ENTERPRISE BROWSER FOR WINDOWS V1.8

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DESCRIPTION

Thank you for selecting Enterprise Browser as your mobility solution tool. User friendly mobile applications are key to leveraging the power, value and return on investment of mobile solutions and Enterprise Browser can significantly reduce the time and cost associated with mobile application development.

Enterprise Browser allows creation of flexible, OS-independent, hardware-agnostic applications that look, feel and act the same on every supported device and that can include a wide range of advanced data capture capabilities. Whether you want to streamline your warehouse, delivery or service operations or enable more robust asset tracking and visibility, Enterprise Browser will help you get your enterprise mobility solution up and running.

RELEASE NOTES

Version 1.8

- **See also Enterprise Browser 1.8 online documentation.**

- **New Zebra Device Support**
  - MC55X Windows Embedded Handheld 6.5
  - MC55X Health Care Windows Embedded Handheld 6.5

- **Enterprise Browser Application And Configuration Version Comparision** - *From Enterprise Browser 1.8 and above, Enterprise Browser Application and Configuration version comparison is now gets captured at Enterprise Browser log file.*

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[Show Enterprise Browser 1.6 Release Information]

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DEVICE COMPATIBILITY

Zebra Devices

This software release has been approved for use with the following Enterprise Mobility devices.

Mobile Computers

	DEVICE FAMILY	DEVICE	OPERATING SYSTEM(S)	SUPPORTED WEB VIEWS
	ES400	ES400	Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	MC18	MC18	Windows CE 7.0	Internet Explorer, Webkit
	MC3090	MC3000, MC3090	Windows CE 5.0 Windows Mobile 6.1	Internet Explorer
	MC3100	MC3100R, MC3100S, MC3190G, MC3190R, MC3190S, MC3190Z	Windows CE 6.0 Professional Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	MC32N0	MC32N0	Windows CE 7.0	Internet Explorer, Webkit
	MC45	MC45	Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	MC55	MC5574, MC5590	Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	MC55X	MC55X, MC55X Health Care	Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	MC55A0	MC55A0	Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	MC55N0	MC55N0	Windows Embedded Handheld 6.5	Internet Explorer, Webkit

	MC65	MC659B	Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	MC67	MC67	Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	MC70	MC7004, MC7090, MC7094, MC7095	Windows Mobile 6.1	Internet Explorer
	MC75	MC7506, MC7508, MC7596, MC7598	Windows Embedded Handheld 6.5	Internet Explorer
	MC75a	MC75A0, MC75A6, MC75A8	Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	MC9000	MC9090, MC9097, MC9094	Windows CE 5.0 Windows Mobile 6.1	Internet Explorer
	MC9100	MC9190-G, MC9190Z	Windows CE 6.0 Professional Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	MC9200	MC92N0	Windows CE 7.0 Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	MC9500	MC9590, MC9596, MC9598, MC959B (WM6.1)	Windows Mobile 6.1 Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	Omnii XT15	XT15	Windows CE 6.0 *(Omnii CE-12.2.44149 BSP and above)* Windows	Internet Explorer, Webkit

				Embedded Handheld 6.5 *(Omnii WEH-8.2.44159 BSP and above)*	
	WorkAbout Pro 4	7528		Windows CE 6.0 *(WAP4 CE-2.4 BSP and above)* Windows Embedded Handheld 6.5 *(WAP4 WEH-3.0.1 BSP and above)*	Internet Explorer, Webkit

Vehicle Computers

	DEVICE FAMILY	DEVICE	OPERATING SYSTEM(S)	SUPPORTED WEB VIEWS
	VH10	VH10	Windows CE 6.0 *(Omnii CE-12.2.44149 BSP and above)*	Internet Explorer, Webkit
	VC5090	VC5090	Windows CE 5.0	Internet Explorer
	VC6000	VC6000, VC6096	Windows Embedded Handheld 6.5	Internet Explorer
	VC70	VC70	Windows CE 7.0	Internet Explorer, Webkit

Kiosks

	DEVICE FAMILY	DEVICE	OPERATING SYSTEM(S)	SUPPORTED WEB VIEWS
	MK3000	MK3000, MK3090	Windows CE 5.0	Internet Explorer
	MK3100	MK3100, MK3190	Windows CE 7.0	Internet Explorer, Webkit
	MK4000	MK4000,	Windows CE	Internet Explorer

	MK4090	5.0		

Wearable Computers

	DEVICE FAMILY	DEVICE	OPERATING SYSTEM(S)	SUPPORTED WEB VIEWS
	WT4090	WT4070, WT4090	Windows CE 5.0	Internet Explorer
	WT41N0	WT41N0	Windows CE 7.0	Internet Explorer, Webkit

Memory Considerations

Enterprise Browser offers support for legacy device families such as the MC9000 and MK4000. Supported devices span a range of performance capabilities; therefore care should be taken when developing applications, especially for older devices. The following points might help with this:-

- JavaScript libraries such as Sencha touch or JQuery Mobile can use a significant amount of memory at runtime. The more JavaScript libraries loaded into the DOM the greater the RAM footprint of the web page will be.
- There are APIs available in the product to monitor the memory including memory logs and a Memory API. Use these tools to get a handle on the requirements of an application.
- Resources are available from the Developer Community to help create great looking, streamlined apps.
- Online performance tests for JavaScript and CSS, particularly those involving DOM manipulation will often be written to target desktop computers and may not run on all supported devices.
- Windows Mobile 5.0 is not supported in this release, devices should be updated to Windows Mobile 6.x where possible.

Localizations

The Enterprise Browser has been approved to run on the following localized device operating systems:

- French
- Italian
- German
- Spanish
- Portuguese

- Traditional Chinese
- Simplified Chinese
- Korean (Windows Embedded Handheld Only)
- Japanese

Approved localized operating systems can be obtained from Support Central.

Localization is not supported on below Zebra devices.

- WorkAbout Pro 4 Windows Embedded Handheld 6.5
- WorkAbout Pro 4 CE 6.0
- VH10 CE 6.0
- Omnii XT15 CE 6.0
- Omnii XT15 Windows Embedded Handheld 6.5

COMPONENTS OF ENTERPRISE BROWSER

Windows Desktop PC Components

Enterprise Browser components are installed in the following folders on the Windows Desktop machine:

COMPONENT	LOCATION
Runtimes	C:\EnterpriseBrowserForWindows\Runtimes\ [binary_type]\EnterpriseBrowser_v[version#]_[webview].cab
JavaScript Files (New EnterpriseBrowser API)	C:\EnterpriseBrowserForWindows\JavaScriptFiles\EnterpriseBrowser*.js
JavaScript Files (Backwards Compatibility)	C:\EnterpriseBrowserForWindows\JavaScriptFiles\BackwardCompatibility*.js
Installer	C:\EnterpriseBrowserForWindows\Installer\EnterpriseBrowserForWindows.exe
Feature Demo	C:\EnterpriseBrowserForWindows\Feature-Demo\
Printing CAB file	C:\EnterpriseBrowserForWindows\Printing-Service\PrintingService.cab
Configuration Editor	C:\EnterpriseBrowserForWindows\Configuration Editor\
Shortcuts Utility	C:\EnterpriseBrowserForWindows\Shortcut Utility\

Mac OS X PC Components

Enterprise Browser components are extracted to the application folder on the host Mac OS X machine:

COMPONENT
Runtimes
JavaScript Files (New EnterpriseBrowser API)
JavaScript Files (Backwards Compatibility)
Feature Demo
Printing CAB file
EB Online Help.webloc
Feature Demo ReadMe.webloc

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INSTALLATION

Windows Desktop

Enterprise Browser is installed by running the MSI project available from Support Central. The MSI project can be used to deploy variants of the Enterprise Browser executable to the target device.

Mac OS X

The Enterprise Browser is installed by running the DMG project available from Support Central. The DMG provides access to the Enterprise Browser device executables along with other resources.

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USAGE NOTES

Module-specific notes

- It is not recommended to use alert boxes to display scanned information or notify of gesture recognition or similar kind of stuff (example: under any callback) in a production environment.
- The ScannerType property of the Barcode API should not be relied upon to accurately report the type of Scanner in use.
- Enterprise Browser applications using the Audio capture APIs should specify a name prior to capturing rather than relying on the default name. The application also should be designed to take account of the time taken for the hardware to initialize.
- Only one alert should be shown at any given time on WM/CE devices.
- Printing Issues:
  - Printer discovery is unreliable running on Enterprise Browser supported devices. The most reliable way to connect to a printer is by calling 'searchPrinters' and providing the Bluetooth or IP address of the desired printer.
  - Attempting to connect to a printer after disconnecting will return an error.
  - The retrieveFileNames and retrieveFileNamesWithExtensions methods require passing an anonymous callback function. Named callback functions will not work.
  - Printing on devices loaded with the Stonestreet stack are not supported by Printer APIs. Please use Legacy APD APIs to print with the Stonestreet Stack.
- Debug buttons are not designed to be used in production code and may cause undesirable side effects.
- Capturing a signature in full screen mode is not compatible with the device auto rotation function.

Usage notes for Windows Mobile / Windows Embedded Handheld and Windows CE

- Scanner and Imager viewfinder parameters are not infinitely adjustable. The requested resolution must be supported by the hardware, or the output might be scaled or snapped to the closest supported size. The viewfinder should be configured prior to being displayed. Additionally, the Imager module width and height parameters on devices running Windows Embedded Handheld should not be set to 500 or greater when using the color camera.
- Configuring the data buffer size or data format on Windows CE or Windows Embedded handheld should be done prior to enabling the scanner.
- Kiosk devices sometimes errorneously report that they have a camera installed when queried through the System API.
- When capturing a video on the MC45 device the preview window fills the whole screen. To stop the capture prematurely use the KeyCapture API to stop() the capture.
- Filenames used in the Video Capture API should be restricted to alphabetical characters.
- When using the Signature API on Windows, the filename of the capture will be returned without the associated extension.
- When capturing audio or video, please be aware of file locks when overwriting existing files, as this can cause the capture to fail.
- Audio Capture should not be invoked on devices without a microphone, such as the VC5090.
- Do not set the Windows start menu to 'auto hide' on CE as this has compatibility issues with Enterprise Browser full screen mode.
- Streaming audio or video is not available in the Media Player API for WM or CE.
- Notes around using the RemoteScanner Module:
  - It is recommended to store the PIN and not require users to manually enter it when associating with the scanner.
  - The rsmDecodeFeedback property cannot be used to disable the sound and illumination.
- Functionality of the Network API should not be exercised through ActiveSync or Windows Device Center, depending on your desktop OS.
- The Bluetooth server connection has stability issues under some deployment scenarios.
- The takeFullScreen method of the Signature API should not be used on the MK3100 device, non full screen signature capture is still available.
- The takePicture method of Camera API should not be used on MC9190 device running WM. Instead, use showPreview method of Camera API.

- JavaScript onkeydown,onkeypress,onkeyup events are not supported on devices running on Windows Mobile devices with IE rendering engine. Instead, use EnterpriseBrowser Keycapture APIs to capture the key presses.
- When launching basic autheticated URLs on an Enterprise Browser startpage, perform the following steps:-
  - License the Device. Note: *If the requirement is to have a basic authenticated URL as a startpage, it's the device must first be licensed and the ShowLicenseConfirmation parameter must contain a value to 0.*
  - Set <ShowLicenseConfirmation value="0"> Note:*Setting ShowLicenseConfirmation value="0" will bypass the License screen if the device is already licensed*
  - Refer to 'ShowLicenseConfirmation' section in Config Reference Guide for more information.
- Avoid using F10 key in Enterprise Browser application when webkit engine is used.

Usage notes for the Webkit Rendering Engine

- SMS, Email and wtai URIs e.g. <a href="tel:18006535350"> are not supported on Windows Mobile / CE.
- It is strongly recommended to avoid using framesets and make use of <div> and <span> tags instead. A single page is faster to process and it is not possible to guarantee which frames' tags will be parsed first; also any JavaScript callbacks will always be sent to the parent frameset page.
- Form input types http://www.w3.org/TR/html5/forms.html are not yet supported.
- HTML5 Video / Audio is not supported.
- CSS Gradients, Complicated CSS shadows or displaying shadows on rotated objects have been known to cause visual and performance issues on the CE/WEHH WebKit browser.
- The HTML5 web worker functionality should not be used on Windows devices.
- Input attribute 'autofocus' should not be relied upon to set field focus; use JavaScript alternatives.
- On WM/CE Ekioh Webkit, the "Basic" and "Digest" forms of the WWW-Authenticate header are supported as described here: https://www.ietf.org/rfc/rfc2617.txt.

Configuration Options

- The <LogUser /> log severity has no effect if <LogInfo /> is disabled, disabling <LogInfo /> will have no effect on info logs.
- To navigate to secure web pages, it is necessary to specify both the HTTP and HTTPS proxies.

Upgrading Enterprise Browser

Settings are not preserved automatically when updating Enterprise Browser. To preserve previous settings, please perform the following steps:

- Save a copy of the Enterprise Browser Config.xml file(s) with existing settings from the following locations:
  - *\Program Files\EnterpriseBrowser\Config\Config.xml*
- Uninstall Enterprise Browser from the device.
- Install the new version of Enterprise Browser.
- Overwrite the default config.xml file created at installation with the modified Config.xml.
  - *\Program Files\EnterpriseBrowser\Config\Config.xml*

Data Persistence

Users have a number of options when choosing to persist their data locally including Web Storage and Web SQL databases.

- On Windows Mobile the location of the databases is defined in your Config.xml and will also persist across a re-install of Enterprise Browser. If wiping your device, it is recommended to take a copy of your .db files on Windows Mobile/CE.

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KNOWN ISSUES

Known issues using Webkit Engine

- Zebra Printer APIs is not supported on Windows CE devices.
- Calling takePicture method of Camera API does not take effect on MC9190 device running WM.
- Calling takeFullScreen method with SignatureCapture set to full screen fails to capture on an MK3100 device running CE7.
- The scanTimeout parameter does not take effect on MC18 device running CE7.
- Installed Persistent Enterprise Browser is not shown in Remove Programs on CE device after cold boot.
- Config tag <JavascriptEnabled> cannot be disabled when using Webkit on Windows.
- Passkey is required to be set in order to use the Push API. Affects MC9190 device running CE6.
- ResizeOnSIP has no effect on MC92N0 devices running CE/WEHH
- RSM DecodeFeedback cannot be disabled. This occurs on the MC9190 device running CE6.
- Setting autoRotate to Enabled or Disabled does not have any effect on MC67NA WM devices.
- SIP disappears when changing screen orientation on Windows Mobile from portrait to landscape. This occurrs on the MC9190 device running CE6.
- Streaming video via HTTP will not function when using MediaPlayer on the MC32N0 device running CE7.
- The barcode scanner fails to fire on MK3100 CE7 device when the <LowBatteryScan> tag, in Config.xml, is set to 0.
- The notification event returns LED and pager objects that do not exist on MK3100 devices.
- Signature barcode is not supported on MC92N0 device running CE7.
- Due to platform limitation, tilt and shake gestures may not work as intended in certain WM/CE devices.
- Rotating the screen from landscape to portrait while simultaneously displaying the SIP, results in a reposition of the SIP.
- After Enterprise Browser is minimized on MC92N0 device running CE7, the device is rotated to landscape position during a restore operation the application may fail to maximize. This can be avoided by setting <AutoRotate> tag value to 0 in Config.xml.
- Setting the screen orientation using the API 'EB.ScreenOrientation' does not take effect on MC65 device running WM.
- Hold Gestures are not detected on an MC18 device running CE7.

Known Issues using Internet Explorer Engine

- Gesture Diagnostics overlay disappears when a gesture is performed. This issue occurs when using the IE webview on Windows Mobile only. Tapping the screen after a gesture action will resume the display.
- Including external JS/CSS files hosted on Apache server do not take effect on WM device.
- The product registration screen fails to show the licensee on MC67 device running WM6.5.
- The SignatureCapture area may lose focus, and will not be visible, after scrolling on MC32N0 devices.
- The Alarm method will not fire on MK4000 device running CE5 when using the IE webview. As a workaround, use setInterval or setTimeout.
- The card reader does not function on the MC959B device running WM6.1 when using the IE webview.
- When navigating to an Authentication screen with IE as the webview, on either WM or CE, the application will navigate to the badlink page after the timeout set <NavTimeout> in Config.xml. Note it is not possible to set the time out higher than 45 seconds on IE.
- CE5 and CE6 truncate the request variables when a navigation to badlink occurs, so the page will be navigated to, but the reason for the failure will not be displayed.

Known Issues common to Internet Explorer and Webkit Engine

- Push does not function when setting the port to 8080 on MC32N0 device running CE7.

SUPPORTED CIPHERS

The following SSL Ciphers are supported in Windows WebKit

- TLS_ECDHE_RSA_WITH_RC4_128_SHA (0xc011)
- TLS_ECDHE_ECDSA_WITH_RC4_128_SHA (0xc007)
- TLS_ECDH_RSA_WITH_RC4_128_SHA (0xc00c)
- TLS_ECDH_ECDSA_WITH_RC4_128_SHA (0xc002)
- TLS_RSA_WITH_RC4_128_SHA (0x0005)
- TLS_RSA_WITH_RC4_128_MD5 (0x0004)
- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384 (0xc030)
- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384 (0xc02c)
- TLS_ECDHE_RSA _WITH_AES_256_CBC_SHA384 (0xc028)
- TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA384 (0xc024)
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA (0xc014)
- TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA (0xc00a)
- TLS_DHE_DSS_WITH_AES_256_GCM_SHA384 (0x00a3)
- TLS_DHE_RSA_WITH_AES_256_GCM_SHA384 (0x009f)
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA256 (0x006b)
- TLS_DHE_DSS_WITH_AES_256_CBC_SHA256 (0x006a)
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA (0x0039)
- TLS_DHE_DSS_WITH_AES_256_CBC_SHA (0x0038)
- TLS_ECDH_RSA_WITH_AES_256_GCM_SHA384 (0xc032)
- TLS_ECDH_ECDSA_WITH_AES_256_GCM_SHA384 (0xc02e)
- TLS_ECDH_RSA_WITH_AES_256_CBC_SHA384 (0xc02a)
- TLS_ECDH_ECDSA_WITH_AES_256_CBC_SHA384 (0xc026)
- TLS_ECDH_RSA_WITH_AES_256_CBC_SHA (0xc00f)
- TLS_ECDH_ECDSA_WITH_AES_256_CBC_SHA (0xc005)
- TLS_RSA_WITH_AES_256_GCM_SHA384 (0x009d)
- TLS_RSA_WITH_AES_256_CBC_SHA256 (0x003d)
- TLS_RSA_WITH_AES_256_CBC_SHA (0x0035)
- TLS_ECDHE_RSA_WITH_3DES_EDE_CBC_SHA (0xc013)
- TLS_ECDHE_E CDSA_WITH_3DES_EDE_CBC_SHA (0xc008)
- TLS_DHE_RSA_WITH_3DES_EDE_CBC_SHA (0x0016)
- TLS_DHE_DSS_WITH_3DES_EDE_CBC_SHA (0x0013)
- TLS_ECDH_RSA_WITH_3DES_EDE_CBC_SHA (0xc00d)
- TLS_ECDH_ECDSA_WITH_3DES_EDE_CBC_SHA (0xc003)
- TLS_RSA_WITH_3DES_EDE_CBC_SHA (0x000a)
- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256 (0xc02f)
- TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256 (0xc02b)
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256 (0xc027)
- TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256 (0xc023)
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA (0xc013)
- TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA (0xc009)
- TLS_DHE_DSS_WITH_AES_128_GCM_SHA256 (0x00a2)
- TLS_DHE_RSA_WITH_AES_128_GCM_SHA256 (0x009e)
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA256 (0x0067)
- TLS_DHE_DSS_WITH_AES_128_CBC_SHA256 (0x0040)
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA (0x0033)
- TLS_DHE_DSS_WITH_AES_128_CBC_SHA (0x0032)
- TLS_ECDH_RSA_WITH_AES_128_GCM_SHA256 (0xc031)
- TLS_ECDH_ECDSA_WITH_AES_128_GCM_SHA256 (0xc02d)
- TLS_ECDH_RSA_WITH_AES_128_CBC_SHA256 (0xc029)
- TLS_ECDH_ECDSA_WITH_AES_128_CBC_SHA256 (0xc025)
- TLS_ECDH_RSA_WITH_AES_128_CBC_SHA (0xc00e)
- TLS_ECDH_ECDSA_WITH_AES_128_CBC_SHA (0xc004)

- TLS_RSA_WITH_AES_128_GCM_SHA256 (0x009c)
- TLS_RSA_WITH_AES_128_CBC_SHA256 (0x003c)
- TLS_RSA_WITH_AES_128_CBC_SHA (0x002f)
- TLS_EMPTY_RENEGOTIATION_INFO_SCSV (0x00ff)

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PART NUMBERS

The following table lists the part numbers for Enterprise Browser

PART NUMBER	DESCRIPTION	FIRST RELEASE DATE	COMMENTS
SW-ENTBR-WIN	Enterprise Browser for Windows operating systems	28th May 2018	Version 1.8.0.0

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Last revised: 28th May 2018