

ENTERPRISE BROWSER V1.0.0

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DESCRIPTION

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

Enterprise Browser allows you to create flexible, OS-independent, hardware-agnostic applications that look, feel and act the same on every supported device. You can rapidly create robust mobile applications 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 & visibility, Enterprise Browser will help you get your enterprise mobility solution up and running.

RELEASE NOTES

Version 1.0

The Enterprise Browser is a cross platform, device agnostic web development kit. It is intended as a successor to PocketBrowser and the RhoElements Shared Runtime. Created exclusively for Symbol devices, EB is a runtime which when installed on a device, will render web pages and provide device capabilities through the use of HTML and Javascript. The Enterprise Browser is targeted at the Enterprise community writing hybrid web applications.

Backwards Compatibility

- RhoElements v1.x
- RhoElements v2.x
- RhoElements v4.x
- PocketBrowser v2.x
- PocketBrowser v3.x

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DEVICE COMPATIBILITY

The Enterprise Browser supports Android, Windows Embedded Handheld 6.1, 6.5 and Windows CE 5, 6 & 7 on Symbol devices.

Symbol 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
	ET1	ET1 (Enterprise Tablet), ET1 WAN	Android 4.1 (JellyBean)	Android Stock 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
	MC40	MC40	Android 4.1 (JellyBean)	Android Stock Webkit
	MC45	MC45	Windows Embedded Handheld 6.5	Internet Explorer, Webkit
	MC55	MC5574, MC5590	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	Internet Explorer, Webkit &




				6.5 Android 4.1 (JellyBean)	Stock Webkit on Android
	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
	TC55	TC55		Android 4.1 (JellyBean)	Android Stock Webkit

Vehicle Computers



	DEVICE FAMILY	DEVICE	OPERATING SYSTEM(S)	SUPPORTED WEB VIEWS
	VC5090	VC5090	Windows CE 5.0	Internet Explorer
	VC6000	VC6000, VC6096	Windows Embedded	Internet Explorer

			Handheld 6.5	
	VC70	VC70	Windows CE 7.0	Internet Explorer, Webkit

Micro 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, MK4090	Windows CE 5.0	Internet Explorer

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. The devices supported span the entire range of the performance spectrum and therefore care should be taken when developing applications, especially for these older devices. Please have the capabilities of your target device in mind when developing your application, the following points will 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. You can use these tools to get a handle on the requirements of your application.
- Resources are available on our [Developer Community](#) to help create great looking, streamlined apps including blogs and webinars coming soon.
- 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](#).

COMPONENTS OF ENTERPRISE BROWSER

PC Components

If the default install location is not changed, the components are installed in the following folders:

COMPONENT	LOCATION
Enterprise Browser Runtime	C:\EnterpriseBrowser\[installation type]\EnterpriseBrowser_[version#]_[webview].[cab/apk]
JavaScript Files	C:\EnterpriseBrowser\EnterpriseBrowser*.js
JavaScript Files (Backwards Compatibility)	C:\EnterpriseBrowser\BackwardsCompatibility*.js
Installer	C:\EnterpriseBrowser\EnterpriseBrowser.exe
Local Help	C:\EnterpriseBrowser\HelpFile\index.html
Printing CAB file	C:\EnterpriseBrowser\Printing-Service\PrintingService.cab

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INSTALLATION

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

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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 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 and the application should be designed to take account of the time taken for the hardware to initialize.
- Only one alert should be shown at any one time on WM/CE devices.

- *1 Printing Issues:
 - Printer discovery is unreliable on Windows and Android devices. The most reliable way to connect to a printer is by calling 'searchPrinters' and providing the Bluetooth or IP address of the printer you want to connect to. Switching from IP to Bluetooth connections on WinCE requires a restart of the application.
 - Attempting to connect to a printer after disconnecting will return an error on Android/WM.
 - The retrieveFileNames and retrieveFileNamesWithExtensions methods require you to pass an anonymous callback function. Named callback functions will not work.
 - Connecting to a Bluetooth printer on Windows CE7 may not work after disconnecting from an existing printer. Please contact Customer support for possible hot fixes.

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

- Scanner and Imager viewfinder parameters are not infinitely adjustable and the requested resolution must be supported by the hardware, otherwise the output may be scaled or snapped to the closest supported size. The viewfinder should be configured prior to being displayed. Additionally on Windows Embedded Handheld the Imager module width and height parameters 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.
- The Kiosk devices may spuriously report that they have a camera installed when queried through the System API.
- When capturing a video on the MC45 device the preview window will fill 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, 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 can not 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.

Usage notes for Android.

- The Home Key cannot be intercepted or blocked on Android; please refer to the device documentation for details of how to enable OS lockout.
- UsPlanetReportCheckDigit and UsPostNetReportCheckDigit have no effect on Android.
- Once disabled, EAN13 barcodes should not be scanned with Android.
- Bluetooth radio does not turn off when BluetoothManager.off_bluetooth is called and will not turn on automatically on Android when Bluetooth APIs are exercised.
- The Code128IsBtTable Barcode symbology is not supported on Android.
- Autorotate should not be disabled on Android devices.
- When using the Native TabBar on Android, ensure the enablePageLoadingIndication property is set to 'true' to avoid potential issues on load.
- The device volume buttons will become non-functional in all Android devices unless you specify <EnableFunctionKey_F1/> and <EnableFunctionKey_F2/> in your config.xml file.
- When extracting the console log from JellyBean devices you should not interact with the device.
- The rhoconfig parameter 'local_server_port' is not supported.

- The CardReader API is not available on the MC32 Android device.

Usage notes for the Webkit Rendering Engine

- SMS, Email and wtai URIs e.g. `` are not supported on Windows Mobile / CE.
- It is strongly recommended to avoid using framesets and make use of `<div>` and `` tags. 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 yet 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.
- You can not select multiple items simultaneously from a combo box on Android devices.
- Input attribute 'autofocus' should not be relied upon to set field focus, please use JavaScript alternatives.

Configuration Options

- On reinstalling Enterprise Browser on Android, the previous config.xml file will not be overwritten.
- 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.

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KNOWN ISSUES

Known Issues using Android

- LogMaxSize does not take effect on Android.
- TransferEvents with Imager, Signature and File Transfer modules do not work on Android using IIS 6 web server.
- WriteConfigSetting and ReadConfigSetting of Generic module do not function on Android.

Known issues using Webkit on Windows

- Calling take with SignatureCapture set to full screen fails to capture on MK3100 CE7.
- Disabling touch input by using the Stylus API has no effect on MC92N0 CE/WM.
- Installed Persistent Enterprise Browser is not shown in Remove Programs on CE device after cold boot.
- Javascript cannot be disabled when using Webkit on Windows.
- Passkey is required to be set in order to use the Push API. Affects MC9190 CE6.
- ResizeOnSIP has no effect on MC92N0 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 occurs on the MC9190 device running CE6.
- Streaming video via HTTP will not function when using MediaPlayer on the MC32N0 CE7.
- TextSelectionEnabled (Config entry) does not function as expected on CE7 devices.
- The barcode scanner fails to fire on a MK3100 CE7 device when the System\LowBattery option, in Config.xml, is set to 0.
- The notification event returns LED and pager objects that do not exist. Occurs on MK3100 when using Webkit.
- Unexpected behaviour when scanning Signature barcodes on the MC92N0 CE7
- Unpredictable behaviour when using tilt and shake gestures on Windows devices.
- Rotating the screen from landscape to portrait and simultaneously displaying the SIP, results in a reposition of the SIP. This occurs on the MC9190 CE6.

Known Issues using Internet Explorer on Windows

- Gesture Diagnostics overlay disappears when the 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 do not take affect if hosted on Apache server. Affects Windows Mobile.
- MicroFlash ActiveX does not work on WM and CE devices.
- SIP position cannot be changed on CE 7 devices using the IE engine.
- The product registration screen fails to show the licensee. Affects MC67 WM6.5 using the IE Webview.
- The SignatureCapture area may lose focus, and will not be visible, after scrolling on the MC32N0 .

Offline Help Document Issues

- Sections of the offline help docs erroneously mention IOS. please note IOS is not supported in Enterprise Browser.

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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_ECDSA_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)

PART NUMBERS

The following table lists the part numbers for RhoMobile Suite

PART NUMBER	DESCRIPTION	PLANNED FIRST RELEASE DATE	COMMENTS
EB_1_0	Enterprise Browser Windows Installer	17 October 2014	Version 1.0

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