

MOTOROLA RHOMOBILE SUITE V4.1.0

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DESCRIPTION

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

RhoMobile Suite 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, Motorola RhoMobile Suite will help you get your enterprise mobility solution up and running.

DEVICE COMPATIBILITY

RhoMobile Suite supports iOS, Android, Windows Embedded Handheld, and Desktop Windows XP / XPe / 7 development. On MSI devices the RhoMobile Suite supports Android, Windows Embedded Handheld 6.1, 6.5 and Windows CE 5, 6 & 7.

Not all APIs will be available on every supported platform, please refer to The online API compatibility document (<http://docs.rhobile.com/guide/apisummary>) for a comprehensive list.

Consumer Devices

This software release has been approved with the following devices from other manufacturers

MANUFACTURER	DEVICE	OPERATING SYSTEM(S)
Apple	iPod Touch iPhone 3Gs iPhone 4 iPhone 4S iPhone 5 iPad Family	iOS 6.x iOS 7.x
Android Devices	Android Devices	Android 2.3 (Gingerbread) Android 4.0 (Ice Cream Sandwich) Android 4.1-4.3 (JellyBean)

		<i>Building for both ARM and x86 is supported</i>
Windows Phone 8 Devices	Windows Phone 8 Devices	Windows Phone 8

Please note that RhoMobile Suite no longer supports Blackberry development from RMS version 4.0 onwards.

Motorola Solutions Devices

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

Mobile Computers

	DEVICE FAMILY ES400	DEVICE ES400	OPERATING SYSTEM(S) Windows Embedded Handheld 6.5
	ET1	ET1 (Enterprise Tablet), ET1 WAN	Android 2.3 (Gingerbread) Android 4.1 (JellyBean)
	MC2100*	MC2100, MC2180	Windows CE 6.0 Core
	MC3090	MC3000, MC3090	Windows CE 5.0 Windows Mobile 6.1
	MC3100	MC3100R, MC3100S, MC3190G, MC3190R, MC3190S, MC3190Z	Windows CE 6.0 Professional Windows Embedded Handheld 6.5
	MC40	MC40	Android 2.3 (Gingerbread) Android 4.1 (JellyBean)
	MC45	MC45	Windows Embedded Handheld 6.5
	MC55	MC5574, MC5590	Windows Embedded Handheld 6.5

	MC55A0	MC55A0	Windows Embedded Handheld 6.5
	MC55N0	MC55N0	Windows Embedded Handheld 6.5
	MC65	MC659B	Windows Embedded Handheld 6.5
	MC67	MC67	Windows Embedded Handheld 6.5 Android 4.1 (JellyBean)
	MC70	MC7004, MC7090, MC7094, MC7095	Windows Mobile 6.1
	MC75	MC7506, MC7508, MC7596, MC7598	Windows Embedded Handheld 6.5
	MC75a	MC75A0, MC75A6, MC75A8	Windows Embedded Handheld 6.5
	MC9000	MC9090, MC9097, MC9094	Windows CE 5.0 Windows Mobile 6.1
	MC9100	MC9190-G, MC9190Z	Windows CE 6.0 Professional Windows Embedded Handheld 6.5
	MC9200	MC92N0	Windows CE 7.0 Windows Embedded Handheld 6.5
	MC9500	MC9590, MC9596, MC9598, MC959B (WM6.1)	Windows Mobile 6.1, Windows Embedded Handheld 6.5
	TC55	TC55	Android 4.1

(JellyBean)



* The MC2100 family of devices are only supported by RhoElements 2.1.

Vehicle Computers

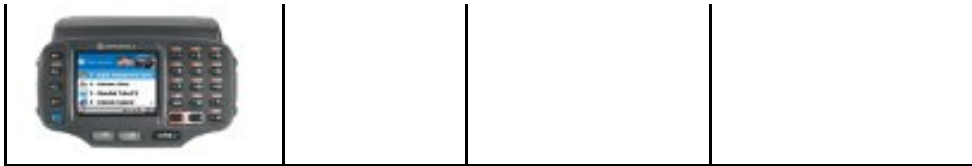
	DEVICE FAMILY VC5090	DEVICE VC5090	OPERATING SYSTEM(S) Windows CE 5.0
	VC6000	VC6000, VC6096	Windows Embedded Handheld 6.5
	VC70	VC70	Windows CE 7.0

Micro Kiosks

	DEVICE FAMILY MK3000	DEVICE MK3000, MK3090	OPERATING SYSTEM(S) Windows CE 5.0
	MK3100	MK3100, MK3190	Windows CE 7.0
	MK4000	MK4000, MK4090	Windows CE 5.0

Wearable Computers

	DEVICE FAMILY WT4090	DEVICE WT4070, WT4090	OPERATING SYSTEM(S) Windows CE 5.0
	WT41N0	WT41N0	Windows CE 7.0



Printers

The underlying SDK wrapped by RhoElements for each printer manufacturer will support a wide range of that manufacturer's printers and their documentation should be consulted for an up to date list. Motorola Solutions has formally validated a number of specific popular printers, (QLn320, MZ220, MZ220) but the API will support the same range of printers supported by the manufacturer SDK. more details of which can be found at the [Printing](#) documentation

Memory Considerations

RhoElements 4.0 introduces support for our older device families such as the MC9000 and MK4000. The devices supported by RhoElements 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.

- Devices must have a minimum of 128MB of physical RAM to support RhoElements
- 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 then the greater the RAM footprint of the web page will be.
- Out of the box you will find JQueryMobile will not be included automatically in your views on Windows Mobile / CE devices, this is to give the best possible performance.
- 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 developer.motorolasolutions.com to help create great looking, streamlined apps including blogs and webinars.
- 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.
- On some of our lower end CE devices you may find you need to increase the program memory available to install RhoElements and you can do this from the Control Panel. Out of the box you will have sufficient memory on your device but if you have already installed a lot of programs you may need to allocate more program memory or delete your existing files.
- The more RhoElements applications you run on your device the greater the required memory will be. Consider using the TabBar in a single application rather than multiple separate applications.
- Windows Mobile 5.0 is not supported in this release, devices should be updated to Windows Mobile 6.x where possible.
- Some older devices such as the MK4000 and MK3000 have insufficient storage space in the application partition to install RhoElements applications. If required on these devices it is suggested to store RhoElements on an SD card and copy files to the \program files folder using the Motorola Startupctl utility.

Localizations

Motorola RhoMobile Suite 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](#).

Non-Motorola Solutions Devices

Motorola RhoMobile Suite will also run on competitor devices running Windows Embedded Handheld 6.5, though many APIs on this platform are specific to MSI hardware e.g. Barcode, Card Reader etc.

RELEASE NOTES

Version 4.1.0

- Support for the Android MC67 variant
- New API for [Mobile Printing](#) and the more specific [Zebra Printing](#) API. *¹
- New API to support inter-application message passing, 'Intent'.
- Kiosk mode and Push client for XP Embedded
- Additional Bluetooth functionality for Windows Mobile
- Proxy Exceptions on Windows Mobile / CE
- Update to the Android [Notification](#) area
- Beta support for the upcoming [Document Processing eXtensions](#) functionality from Motorola Solutions. This requires a firmware update which will be provided as part of the feature beta program.
- Beta support for the upcoming MC45 [NFC](#) capabilities.
- Beta support for New ORM Common API for [CoreAPI ORM module](#) and [ORM models](#) for both Ruby and JavaScript
- Enhanced [GeoLocation](#) methods exposed
- Additional bug fixes
- RhoConnect
 - Ruby 2.0/2.1 support
 - Obsolete gem 'templatier' is removed and all generator commands implemented on 'thor' API
 - Fixing redis connection string for windows
 - Multiple bug fixes

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[\[Show 2.x Release Information\]](#)

[\[Show 1.x Release Information\]](#)

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COMPONENTS OF RHOMOBILE SUITE

PC Components

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

COMPONENT	LOCATION
RhoStudio	C:\MotorolaRhoMobileSuite[version#]\rhostudio
RhoConnect	C:\MotorolaRhoMobileSuite[version#]\ruby\lib\ruby\gems\1.9.1\gems\rhoconnect-4.1.x
GNU make	C:\MotorolaRhoMobileSuite[version#]\make-3.81
Redis database	C:\MotorolaRhoMobileSuite[version#]\redis-2.6.x
RhoMobile application to build	C:\MotorolaRhoMobileSuite[version#]\RhoElements2

Shared Runtime	
Pre-built Shared Runtimes	C:\MotorolaRhoMobileSuite[version#]\RhoElements2 Shared Runtime
RhoMobile sample applications	C:\MotorolaRhoMobileSuite[version#]\samples

Device components for Windows Embedded Handheld and Windows CE devices:

COMPONENT	LOCATION
Runtime Executable	\Program Files\RhoElements\
Default Configuration Files	\Program Files\RhoElements\Config
Default HTML Files	\Program Files\RhoElements\HTML
Default Image Files	\Program Files\RhoElements\Image
MPM accessory libraries	\Program Files\RhoElements\MPM
NPAPI Plugin Directory	\Program Files\RhoElements\NPAPI
EMML Plugin Libraries	\Program Files\RhoElements\Plugin
Files required for Ruby Wrapper	\Program Files\RhoElements\rho

* You can only have one shared runtime installed on your device at any one time, please uninstall any previous versions before installing a new one.

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INSTALLATION

Instructions for installing RhoMobile Suite including all its components (RhoElements, Rhodes, RhoConnect, runtimes) on both Windows and Mac can be found in the online installation instructions (<http://docs.rhobile.com/en/4.0.0/guide/rhobile-install>).

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USAGE NOTES

Overview / Setup

- RhoMobileSuite allows you to develop applications using Rhodes, an open source development toolkit for mobile devices or using RhoElements, a superset of Rhodes which also includes licensed APIs and support for Windows Mobile / CE.
- Once installed please refer to the online documentation at <http://docs.rhobile.com> for a quick start guide and full list of functionality. A Kitchen Sink demo application is also available at <http://docs.rhobile.com/guide/kitchensink> to illustrate a majority of the API available in RhoMobile suite.
- Installation and Application paths on Windows must not contain spaces.

- If you are writing a hybrid application for Windows Mobile or CE then you should use the 'Shared Runtime', available after product installation. The Android 'Shared Runtime' is no longer available in 4.0 and customers are advised to create native applications for this platform.
- Once the installer has completed you can use 'rhodes-setup' command to provide paths to various SDKs : <http://docs.rhobile.com/rhodes/install#setup-rhodes>. You can also edit rhobuild.yml manually or copy it from an old Rhodes installation. Another way to edit your rhobuild.yml is to use RhoStudio, from the Windows menu select Preferences and then RhoMobile to access the dialog.
- If you are installing from the persistent runtime, this can only be supported if there is sufficient persistent storage space on your device.
- RhoElements 4.x gives users the option of targeting their Android applications for either Motorola WebKit or the Stock Android browser. Moving forward it is recommended for new adopters to target the Stock browser but existing users are still able to take advantage of Motorola WebKit which is required for JavaScript access to the existing (2.2) API set. Motorola Webkit on Android support will be removed in future releases.
- From RMS version 4.1 onwards, building Android applications on Windows XP is no longer supported.

Usage Notes for RhoConnect

The latest guides and information on supported platforms are available at <http://docs.rhobile.com/rhoconnect/introduction>. The migration guide from 2.2 to 4.0 is available at <http://docs.rhobile.com/rhoconnect/migration>

- RhoConnect JavaScript code generation is not available directly in RhoStudio. You will need to call the generators from the command line and pass "--js" flag.
 - For example, to generate an app with JavaScript:
 - `rhoconnect app helloworld --js`
 - Then, to generate a source:
 - `cd helloworld`
 - `rhoconnect source product --js`
- Although you should upgrade your application by following the [migration guide](#), RhoConnect apps using v3.4.x will run with only an updated 'rhoconnect' version in the Gemfile followed by "bundle install" inside of the application.
- All ruby processes should be killed before debugging RhoConnect applications.
- Warning Alerts shown whilst using RhoConnect Push on Android devices can be ignored.
- After uninstalling RhoConnect push from a Windows Mobile / CE device you must also remove the shortcut from the startup folder normally found at `'\Windows\StartUp\rhoconnect-push-service.lnk'`
- RhoConnect client-side JavaScript applications should be hosted locally on the device and not on a remote server.
- RhoConnect push is not available on the MK4000

Usage Notes for RhoStudio

Motorola RhoMobileSuite ships with RhoStudio. The latest guides and information on supported platforms is available at <http://docs.rhobile.com/rhostudio/tutorial>.

- If you are running Windows, Motorola RhoMobile Suite Installer installs the Ruby stack, Redis, RhoConnect, Rhodes and a pre-built RhoElements runtime.
- If you are running Mac OS, Motorola RhoMobile Suite Installer installs Redis, RhoConnect, Rhodes a pre-built RhoElements runtime.
- Although Mac OS has Ruby installed, the official way to install Ruby for RhoStudio is to install Ruby Version Manager and then install Ruby version 1.9.3
- Avoid using custom conditions for breakpoints.
- If you are running Windows 64-bit, you need to use 32-bit Java when you run RhoStudio. You can include the 32-bit Java in the PATH, or you can run RhoStudio with a link to 32-bit Java: `C:\RhoStudio\eclipse\RhoStudio.exe -vm "<32-bit java path>\bin\javaw.exe"`

- Network proxy or firewall settings preventing outgoing https or SSH connections may prevent RhoHub build from working in RhoStudio
- Debugging through RhoStudio may not work on machines connected to multiple networks.
- JavaScript Debugging is limited to the RhoSimulator only
- Ruby exception breakpoints are not supported.

Usage Notes for RhoElements applications

Interaction with Datawedge

In order to run RhoElements alongside DataWedge please configure a DataWedge profile as documented under the 'Profile Configuration Menu' page in the DW help file under the following scenarios:

- You are running on Windows Embedded Handheld / Windows CE devices
- You are running on Android

You can also refer to the RhoElements scanner documentation page for step by step instructions on how to do this.

Localized Builds

- In order to use the shared runtime or Native application on localized Windows devices(including Korean) - install application to non-localized 'Program Files' folder.
- APD functionality is not available on localized German and Italian builds on MC75a and MC31xx devices.
- RhoElements only supports non Latin fonts when they are encoded in one of the following character sets: US-ASCII, ISO-8859-1 and Unicode.

Licensing

- Neither RhoElements 1.x, RhoElements 2.x, RhoElements 4.x or PocketBrowser can be licensed on the same device; in order to deploy to a device previously using PocketBrowser or RhoElements 1.x / 2.x you should first cancel the previous license for that device.
- The ES400, MK3000 and MK4000 are not able to scan the license barcodes, to license these devices please use the registry key or enter the license code manually.
- The licensing wizard will only be presented on Android if you have specified app_type:rhoelements though if you do not specify it you can still license your device manually.
- If using an application license in your app it should not be launched through a shortcut .lnk file on CE; instead the .exe should be launched directly.

Module specific notes

- It is not recommended to use alert boxes to display scanned information or notify of gesture recognition in a production environment.
- When dropping a table using the ORM API you should always provide at least two non-nil parameters, e.g. tx.executeSql('DROP TABLE myTable',[]);
- The ScannerType property of the Barcode API should not be relied upon to accurately report the type of Scanner in use.
- RhoElements 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.
- Proxy settings for the Network api should be configured through rhoconfig.txt and not through config.xml or the System.setHTTPProxy API for WM/CE devices
- The File API close method is not available on WM/CE devices through Ruby.
- *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.
 - Android Gingerbread devices are not supported by the printing API, please update to Jellybean.

- If not present on your Windows Mobile device, you must first install the .net compact framework before the printing API will work
- Attempting to connect to a printer after disconnecting will return an error on Android/WM but error_not_connected on iOS
- 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 RhoElements full screen mode.
- Streaming audio or video is not available in the Media Player API for WM or CE
- The MediaPlayer Common API may not play videos on WM devices, please use the 2.2 API in preference.
- 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.
- The Video Capture API can not be accessed through Ruby, please use the JavaScript interface instead.
- To set the navigationTimeout of a page please use the configuration file, the value may not be applied if it is set through the WebView API.
- When using the MapView API, the OSM and ESRI maps may not work on some Windows Mobile devices. This does not affect CE.
- Functionality of the Network API should not be exercised through ActiveSync or Windows Device Center, depending on your desktop OS.
- It is recommended to use the polling Battery API where available
- The KeyCapture API will return the capturedKey as a string and not an integer as documented. It is also not possible to undo a remapped key.
- The default value for the vibrate() method of the Notification API should not be used, always specify the required value.
- Bluetooth server connection works unstable
- Ruby Calendar API may not work as expected on some Windows Mobile devices

Usage notes for Android. Both Consumer and Motorola Android

- To compile applications for Android please ensure you have the latest versions of the Android SDK and NDK installed. Google changed the structure of these between our 2.2 and 4.0 releases.

- 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
- Default meta tags cannot be used to specify scanner decoder tags on Android.
- Once disabled, EAN13 barcodes should not be scanned with Android.
- The SIP can not be set to manual mode on Android through Ruby, to work around this issue use the JavaScript SIP interface.
- 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 (both consumer and Motorola) unless you specify <EnableFunctionKey_F1/> and <EnableFunctionKey_F2/> in your config.xml file.
- You should not display an Alert in the callback for the Camera API, doing so will prevent the Camera from being dismissed.
- When extracting the console log from JellyBean devices you should not interact with the device
- The Barcode getDefault API should not be used, instead it is recommended to call Barcode.enumerate() and then Barcode.setDefault()
- The rhoconfig parameter 'local_server_port' is not supported.

Usage notes for iOS

- The MapView API should only be used on iPhone when the device has Internet connectivity.
- The -ipa-file created on the command line cannot be installed on an iOS7 device using iTunes, please use XCode to deploy to the device and submit to the appstore.
- If building an application with RhoElements capabilities please use rake commands to build the archive, rather than XCode.
- Applications running on iOS7 do not support fullscreen mode.
- The look and feel of your application will be different in iOS7 because of Apple's new, flat design; this will impact some UI elements such as Toolbar, TabBar, NavigationBar and the Phone Status bar.

Usage notes for WP8

- The NativeTabBar properties useCurrentViewForTab, selectedColor, backgroundColor are not yet supported.

Usage notes for the 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 in the Motorola 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
- Use of HTML5 geolocation in your application may lengthen the time the application takes to quit on Windows Mobile devices.

Notes for running multiple applications simultaneously

- Only licensed RhoElements applications should be run simultaneously on Windows Mobile, this applies regardless of whether or not the application is using the shared runtime.
- Windows applications running in the background should not attempt to display a JavaScript alert.
- Scanner parameters 'ScanTimeout' and 'DisconnectBtOnDisable' are not application specific and their default should not be assumed prior to use.
- Minimized applications should be brought to the foreground by using the application shortcut.
- Notifications such as the beeper must have their state set to 'off' prior to switching applications on Android to work between applications.
- To use the Barcode API in multiple applications you must ensure both applications are running before you use the Barcode API in either app.

Development

- During development the application exe should not be forcibly quit on WM/CE. If absolutely required then a warm boot should be performed following the quit.
- If developing on multiple WM/CE devices, clean your work environment before transitioning devices
- The Notification API showStatus method is not available for Win32 applications or the RhoSimulator
- The Network API detectConnection method should not be exercised in the RhoSimulator.
- SendLog should not be used in the RhoSimulator, the log file is stored on your machine disk.

Configuration Options

- On Windows Embedded Handheld and Windows CE the configuration option <LogURI> is not fully supported. The name of the log file will always be 'rholog.txt' and for native applications it will always be stored in the \rho directory of the application.
- The only <LogProtocol /> configuration option supported is 'file'
- On reinstalling RhoElements 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.
- Some JavaScript libraries check for the existence of 'ActiveXObject' and if it exists try to create a 'Microsoft.XMLHTTP' object for AJAX. To avoid libraries erroneously doing this for RhoElements set all <PreloadLegacy* /> options to '0'.
- The contents or size of rholog.txt is unaffected by the configuration settings <LogMaxSize/>, <LogError/> or <LogWarning/> in the Shared Runtime.
- To navigate to secure web pages please it is necessary to specify both the HTTP and HTTPS proxies

Usage notes for Beta Functionality

- DPX: Do not press the Android home button whilst capturing a document when using DPX
- NFC: It is not possible to make an NFC tag read-only through the API.
- NFC: Passing the parameter 'tagsToBeDetected' to the setTagDetectionHandler method will have no effect.

Usage Notes for New ORM Common API (Beta)

New ORM API provides Ruby and JS access to the Rhodes mini database object mapper (ORM), performing database operation on Rhodes model objects. It replaces old Ruby and JS implementations and serve as a basis for new features and enhancements. For further information consult online [Module Core API](#) and [Models API](#) documents. Existing implementation (Old ORM) is kept in parallel at this moment to provide smooth transitioning to the new API. By default, existing Old ORM API will be enabled by default in RE 4.1.

- To enable New ORM API for existing Rhodes app
 - Edit "rhoconfig.txt" file and add 'use_new_orm' option to it
 - use_new_orm = 1
 - For JavaScript app make sure that your html file includes reference to "rhoapi-modules.js" file. Any references to "rhoapi-modules-ORM.js" should be commented or removed.

- New ORM JS API uses different interface for 'addModel' like `Rho.ORM.addModel('Product', function(model){ /* ... */ })`. Update your code properly.
- To enable/continue usage of Old ORM API for existing Rhodes app
 - In "rhoconfig.txt" file remove 'use_new_orm' option or set it as `use_new_orm = 0`
 - Make sure that your main html file includes references to both files
 - rhoapi-modules.js
 - rhoapi-modules-ORM.js

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KNOWN ISSUES

Known Issues with RhoConnect

- Async mode is not supported with RhoStudio debugger.
- Async mode is only supported with Thin Server.
- RhoConnect applications currently do not run on Windows XP due to issues with the redis server.

Known issues with RhoStudio

- Debugging of RhoConnect applications does not work on Windows
- The Clean command will not delete the cab files associated with a build.

Known Issues with RhoElements applications

Known issues with Modules

- The following APIs are not supported in the JavaScript ORM: `deleteAll()`, `find(args)` with advanced queries, `clearNotification()`, `findAll()`, `findBySql(string)`, `paginate`, `setNotification()`, `search()`, `sync()`. An alternative to the `sync()` call is to use `RhoConnectClient.doSync()`.
- The following APIs are not supported in RhoConnect client: JS Search, JS bulk Sync, JS blob sync, JS `onSyncCreate` / `Update` / `DeleteError` handlers. Applications requiring this functionality are currently limited to the Ruby API.
- The Sensor API `readData()` method should not be relied upon to return immediate Sensor data, please use the `start()` method to read the data periodically.
- The `RhomSource` API will return incorrect sync information for the following fields: `last_inserted_size`, `last_deleted_size` and `distinct_objects`.

Known issues on Windows Mobile / Windows Embedded Handheld and Windows CE

- After installing the persistent shared runtime on WM it is necessary to create the shortcut icon manually.
- HTTP authentication (Basic and Digest) does not work on Non Motorola WM devices.
- Native applications will not launch on the MC21XX series of devices, only hybrid applications are supported using RhoElements which ships on the device.
- Supplementals will not be decoded if picklist mode is enabled on the MC65.
- `displayBtAddressBarcodeOnEnable` parameter will fail to re-pair the RSM device after connection timeout. The RSM will need to be reconnected by clicking hardware reconnection button.
- On large screen CE devices, such as the VC70, the `MapView` control will not be rendered full screen.
- The Bluetooth module should not be instructed to `disconnect()` on Windows Mobile prior to a connection being established or without specifying a device name.
- The signal icon will remain reporting full signal strength on the VC70 even after the WLAN has been disconnected.
- The `MapView` API `zoom_enabled` and `scroll_enabled` properties are ignored on CE7 and will default to true.

- 3D gestures will not be reliably detected on the WT41N0
- When restoring minimized applications on WM/CE, they will not come back full screen regardless of the value of the fullScreen configuration option.
- For WM/CE the Bluetooth method is_bluetooth_available will return whether or not the device has Bluetooth capabilities. On Android the same method will return whether or not Bluetooth is turned on.
- The diagnostics property of the Gesture API on Windows is not available on WM or CE devices
- The Alarm API is not available on WM/CE devices
- <ReadConfigSetting/> and <WriteConfigSetting/> are not functioning on WM/CE.
- convertGs1DataBarToUpcean property has no effect when scanning GS1Databar barcodes.
- It is not possible to disable the touch screen on the MC92 CE7 device through the Stylus API
- Disabling poll based synchronization with RhoConnect Client may cause issues with SSL connections
- The navigationTimeout property of the WebView API is not available, please specify this setting in your configuration file.
- When accessing the Native Toolbar through JavaScript the predefined icons will be replaced by text. The predefined icons are 'back', 'home', etc.
- The following APIs should not be exercised on Non Motorola WM devices: Notification, ScreenOrientation, CardReader, Log, Network.
- For two or more applications to share the scanner resource on the device, when each application gains focus it should re-enable the scanner with its required configuration
- The app_install method of the System API will not work for CE devices, please instead use System.applicationInstall(). To install remote applications, first download the app to the device with the Network API.

Known issues on Android. Both Consumer and Motorola Android

- When Android devices running Android 3.2 have no connectivity applications may not work for some carrier providers.
- Bluetooth printers should be paired to the device prior to using APD, otherwise the first call may not be received.
- On the ET1 if you are running RhoElements you should disable the Camera when it is not in use.
- The FaceUp 3D gesture does not work on Android
- It is not possible to delete gestures on Android through the Ruby API, please use the JavaScript API instead.
- Setting the Scanner illuminationMode will have no effect on Android.
- For Android and iOS the Bluetooth method session_bt_disconnect will always return status 'error' in the callback regardless of success.
- getProperty and getProperties do not work for the Barcode API on consumer Android.
- The Sensor API method makeSensorType() does not return a valid Sensor object on Android.
- The Sensor and Media Player APIs are not available on MC40 Gingerbread, please update your device to JellyBean.
- The Audio Capture API should be allowed to record for the configured number of seconds, rather than allowing the user to stop the recording on demand
- Inline Signature Capture should not be used, instead please use the (non inline) Signature API on this platform.
- Web Plugins (Flash) is only available on Android 2.x and below. On Android 3.x and above the WebView API 'enableWebPlugins' will not be able to successfully enable Flash.
- The System API method isMotorolaDevice will return false regardless of the device if the application is built without app_type:RhoElements.

Known issues on iOS

- Barcode scanning is not yet available on iPod
- The Webview API methods navigationBack() and currentLocation() may not work as expected.
- The Camera API should not be used on iOS7
- The Application event callbacks 'ScreenOn' and 'Deactivated' are not supported in Ruby applications.

Known issues on Windows Phone 8

- If your compiler complains about machine type conflicts following a build then perform a clean build first.

Known issues on Windows Desktop applications & RhoSimulator

- The mask color of the Toolbar API will have no effect.
- The application log is not available in RhoSimulator

Rendering Engine Issues

- The following HTML5 canvas methods / properties have not yet been fully implemented
 - GlobalCompositeOperation (Copy), fill(), animation using drawImage and StrokeText
- Cookie expiration times should not be relied upon in Windows Mobile and Windows CE.
- CSS Font-Family property is not functioning.
- The viewport meta tag, once set, will persist across pages and is not compatible with device rotation.

Known issues with New ORM Common API

- Blob type is not supported
- Ruby implementation for Property Bag models with advanced find options (:conditions, :select, :op, :order) is incomplete and should be avoided.

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USAGE NOTES AFFECTING 2.2 APIS

With the move to 4.0 a number of new APIs were created to harmonize the sometimes disjointed set of APIs available under 2.2. All 2.2 APIs are still backwardly supported under 4.0 and a migration guide is available under <http://docs.rhobile.com/guide/apiusage>. The following usage notes only affect those APIs included in 4.0 for backwards compatibility with 2.2.

Module Specific Notes

- The Camera API is not available on the ES400
- When using relative URLs in any RhoElements File Transfer call you should avoid navigating up to the root of the local device filesystem.
- To prevent users overriding the application program flow it is recommended that the following RhoElements modules should be limited to debugging your application only: AddressBar, BackButton, ForwardButton, GoButton, StopButton, HomeButton, QuitButton.
 - You may notice the loading screen visible behind the page if you invoke the keyboard on Windows Embedded Handheld devices whilst using the debug functionality.
 - The address bar should not be used as a substitute for an industrial browser and on some devices it may not receive keys from the hardware keyboard.
 - Use of debug buttons will prevent your application from correctly minimizing or restoring.
- Applications should not raise more than one simultaneous popup via the Ruby Alert API.
- When initiating a File Transfer on Android either directly through the File Transfer module or indirectly through Signature Capture, Imager etc. the 'username' and 'password' should be specified using the corresponding module properties rather than being included in the destination or source URL.
- The RhoElements Push API is only available on Android, through the JavaScript interface on the default port. Please transition your application to RhoConnect Push.
- EMMML Profiles should be stored locally on Windows Embedded Handheld and Windows CE devices.
- When using the FileTransfer, Signature and Imager API, HTTP and FTP transfers are sometimes failing on Android. It is recommended to transition your application to use the Network API to download files.
- The Signature API to return a dataUri object is not available through the JavaScript API

- Once attached, it is not possible to detach the TriggerEvent from the 2.2 KeyCapture API. Instead please use the KeyCapture API introduced in 4.0.

Device Specific Notes

- On Android the Scanner will not necessarily start automatically when being brought back to the foreground.
- The return value of the "Pre-existing" JavaScript objects (e.g. generic) should not be used on Android
- Whilst RhoElements is running on Android do not enable USB storage
- Entering data into a password field will not be visible on Android using the default 'Droid Sans Fallback' font.
- The PowerOn event is not available on the MC65 or MC92 when specified through Ruby, please use JavaScript to register for this event.
- On Android preloading Pre-existing JavaScript objects (e.g. generic) cannot be disabled individually; they must all be disabled to have any effect.
- The Bluetooth API is not available on MC67 Windows Mobile

Internet Explorer

- The Internet Explorer rendering engine is not supported in Motorola RhoElements. It is recommended to upgrade existing PocketBrowser applications to use Motorola WebKit in order to function in RhoElements.

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KNOWN ISSUES AFFECTING 2.2 APIS

With the move to 4.0 a number of new APIs were created to harmonize the sometimes disjointed set of APIs available under 2.2. All 2.2 APIs are still backwardly supported under 4.0 and a migration guide is available under <http://docs.rhomobile.com/guide/apiusage>. The following known issues only affect those APIs included in 4.0 for backwards compatibility with 2.2.

Issues with the Rhodes' API set

- Not all properties of the Alert.show_popup call are available on Windows CE, to reliably display an alert box on this platform use the simplified `Alert.show_popup 'message'`.
- Application.restore does not work through Ruby on Windows devices and debug buttons should not be used in conjunction with minimized applications.
- Setting color-model to Grayscale on Android will have no effect with the Camera API.
- The System.zip_file JavaScript APIs are not supported. Please use Ruby instead.
- When using the File API ensure the file exists before attempting to open the file.
- The front facing camera is not supported via the Camera API on the Samsung Galaxy Tab.
- Rhom.database_import does not work on Android devices.
- Map created by Rho.MapView.create API is unstable when page with the map keeps in idle state for long period of time on Android devices. Recommend using JavaScript MapView instead.
- System.set_network_status_notify method does not work on Windows Mobile, Windows CE and Windows Desktop platforms
- The Bluetooth method stop_current_connection_process method will not work on iPhone devices.
- The Timer and Alert Rhodes' APIs supplied in 2.2 are not functioning in 4.0, please use their 4.0 equivalents.
- The WebView.current_location() function returns the referrer page URL rather than the current URL.
- The forward button is not available on the Native Toolbar
- System.get_property(attribute) issues:

Attribute name	Note
has_calendar	Always returns false on Android
phone_id	Only available on Android
country	Not supported on Windows Mobile. Use System.get_property('locale') instead.

Issues with the RhoElements API set

- NPAPI Objects (JavaScript Object syntax and ActiveX replacement in WebKit) are not available in HTML embedded within an SVG application.
- The Push module's "Unattended" parameter has no effect.
- The resolution should not be changed from the default value when using the Camera API.
- The Rho.GeoLocation API will not work on Windows Mobile devices.
- On Android, videoSaveEvent is not currently supported.
- The transfer capability of the video capture module should not be exercised
- The Restore method of the Application module should not be used in hybrid or native applications.
- Both the TriggerEvent or AlarmFiredEvent do not get fired reliably from Ruby on Android.
- The Notification module does not support the LED on Android
- The APD 'SendString' command is not available on Android devices
- The Signal icon available in 2.2 will no longer function on CE devices, it is required to transition to the Signal API introduced in 4.0 for CE support.
- The Destination parameter in the following APIs is not working on WM/CE: 2.2 Signature & Imager, Audio Capture, Video Capture. It is recommended to use the Network API to upload any files to a remote destination.
- Applications using the Scanner API should not rely on the following properties, please transition your application to use the Barcode API in 4.0 to resolve this issue: sameSymbolTimeout, differentSymbolTimeout, connectionIdleTimeout, enableTimeout.
- The RawSensors API available in 2.2 may no longer work in 4.0, depending on your device. It is recommended to transition to the 4.0 Sensor API.

Issues with Sample Applications

- The BluetoothChat application, part of the system-api-sample, should not be exercised on Windows Mobile.
- The samples for the following methods will not work: Rho.AsyncHttp.post, Rho.AsyncHttp.get and Rho.AsyncHttp.upload_file methods.
- Camera coordinate parameters are not working for the viewfinder on Android for the Rho.Camera samples.
- The rollback functionality is not working in the ORM Database sample.

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SUPPORTED CIPHERS

The following SSL Ciphers are supported in Motorola WebKit

- TLS_DHE_RSA_WITH_AES_256_CBC_SHA (0x0039)
- TLS_DHE_DSS_WITH_AES_256_CBC_SHA (0x0038)
- TLS_RSA_WITH_AES_256_CBC_SHA (0x0035)
- TLS_DHE_RSA_WITH_3DES_EDE_CBC_SHA (0x0016)
- TLS_DHE_DSS_WITH_3DES_EDE_CBC_SHA (0x0013)
- TLS_RSA_WITH_3DES_EDE_CBC_SHA (0x000a)
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA (0x0033)
- TLS_DHE_DSS_WITH_AES_128_CBC_SHA (0x0032)
- TLS_RSA_WITH_AES_128_CBC_SHA (0x002f)
- TLS_RSA_WITH_RC4_128_SHA (0x0005)
- TLS_RSA_WITH_RC4_128_MD5 (0x0004)
- TLS_DHE_RSA_WITH_DES_CBC_SHA (0x0015)
- TLS_DHE_DSS_WITH_DES_CBC_SHA (0x0012)
- TLS_RSA_WITH_DES_CBC_SHA (0x0009)
- TLS_DHE_RSA_EXPORT_WITH_DES40_CBC_SHA (0x0014)
- TLS_DHE_DSS_EXPORT_WITH_DES40_CBC_SHA (0x0011)

- TLS_RSA_EXPORT_WITH_DES40_CBC_SHA (0x0008)
- TLS_RSA_EXPORT_WITH_RC2_CBC_40_MD5 (0x0006)
- TLS_RSA_EXPORT_WITH_RC4_40_MD5 (0x0003)
- TLS_EMPTY_RENEGOTIATION_INFO_SCSV (0x00ff)

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PART NUMBERS

The following table lists the part numbers for RhoMobile Suite

PART NUMBER	DESCRIPTION	PLANNED FIRST RELEASE DATE	COMMENTS
RMS_040101_WIN	RhoMobile Suite for Windows operating systems	4th April 2014	Version 4.1
RMS_040101_DMG	RhoMobile Suite for Mac operating systems	4th April 2014	Version 4.1

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Last revised: 07th April 2014

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