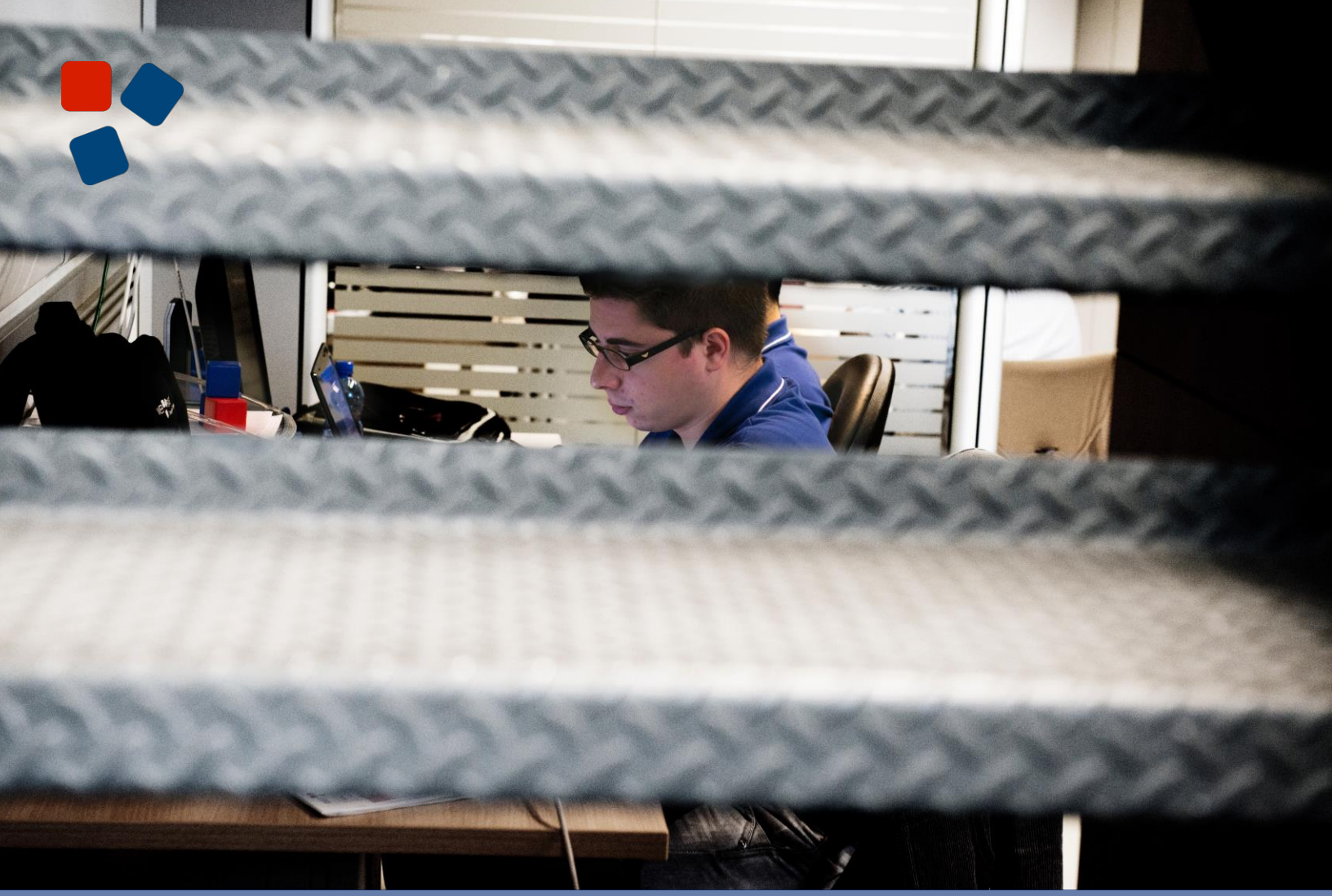
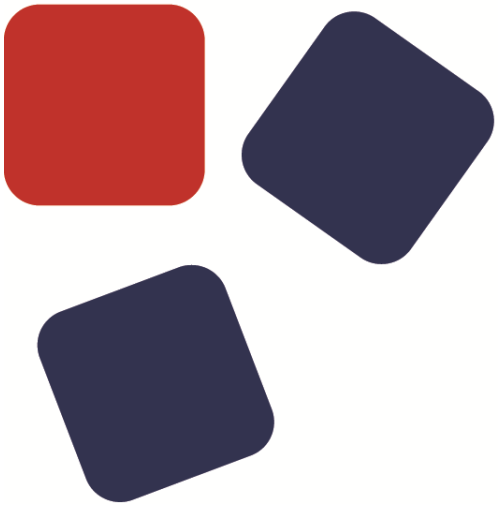


8.10 Mobile Platform Release Notes

WEB RATIO®



RELEASE NOTES

WEBRATIO MOBILE PLATFORM 8.10

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INTRODUCTION

WebRatio Mobile Platform is a powerful development environment that supports business users and IT developers in building mobile applications that can be installed on mobile phones and tablets. These mobile applications can work both offline, without the use of an Internet connection, or online, synchronizing the information with an external system, which can also be developed with WebRatio Mobile Platform.
Let's review the main functionalities of this product release.

APACHE CORDOVA/PHONEGAP 7

Mobile applications generated with WebRatio Mobile Platform 8.10 are now based on Apache Cordova/PhoneGap 7. This change may require you to update your projects. See the Migration Guide section for further information. Apache Cordova/PhoneGap 7 also changes the System Requirements needed for generated mobile applications. See the related section for further information.

The upgrade to Apache Cordova/Phonegap 7 is mainly due to Google Play Store announcement (see this link) that will require a recent API version to publish new apps or update existing ones.

The timeline is the following:

- **August 2018**: New apps required to target API level 26 (Android 8.0) or higher.
- **November 2018**: Updates to existing apps required to target API level 26 or higher.

In addition, from mid-2019, the Store will also require new/updated apps to compile their native code for 64-bit.

- **August 2019**, Google Play Store will require that new apps and app updates with native libraries provide 64-bit versions in addition to their 32-bit versions.

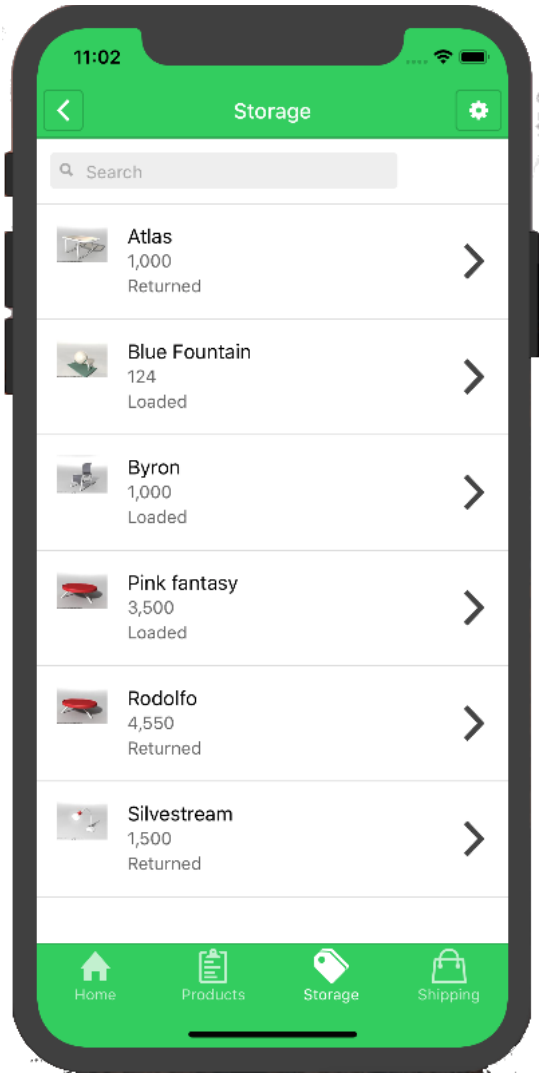
Apache Cordova/PhoneGap 7 meets all these new requirements.

IONIC FRAMEWORK 1.3.5

The Ionic Framework has been upgraded to 1.3.5. This upgrade allows mobile applications generated with WebRatio Mobile Platform 8.10 to fit properly also on iPhone X. Refer to this link to see all Ionic changes.

IPHONE X SUPPORT

iOS generated WebRatio apps now support the iPhone X and its special screen. You do not have to change anything in your project but just re-build the app after looking at the Moving from 8.9 version section.



IOS ENTERPRISE APPS DEPLOYMENT

Apple allows to build and distribute proprietary, in-house mobile applications. This lets companies to securely host and deploy apps to their employees' devices. WebRatio Mobile Platform introduced a new option in the Build Configuration dialog so that you can now build this kind of iOS apps. Please notice that you need to use a dedicated certificate for In House (Enterprise) Apps.

MAPS INTEGRATION IMPROVEMENTS

Customize the Info Window layout

You can now change the layout of the window content shown in the Info Window by passing to the Map View Component an HTML fragment.

Group a set of locations

You can group a set of locations so that they are shown in the map using a single marker when the zoom level makes difficult to distinguish each location. You just have to specify if a location should be part of a group or not. The Map View Component calculates which are the locations that compose a group, since they are close one to the other. Then, depending on another couple of settings, the map shows a single marker for grouped location with the indication about their count.

Customize the icon marker

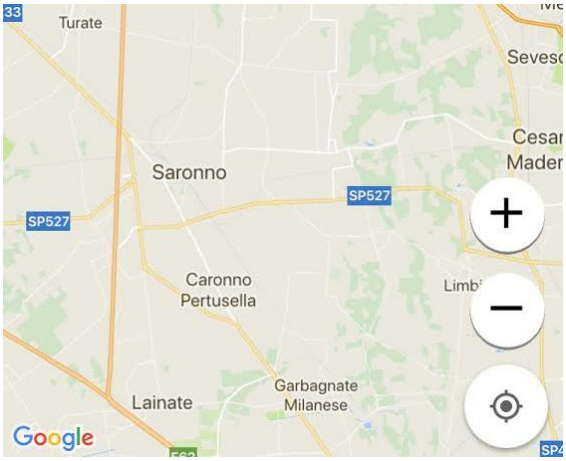
You can change the location marker icon. You just have to pass to the Map View Component the path to the icon you want to use. Remember that the icon must be 32x32px size.

Show my location

You can configure the Map View Component so that the current user location is calculated and shown on the map with the relative button that moves the map on the user location.

Show Zoom Control

You can specify on the Map View Component if the zoom controls are visible or not using the dedicated Layout Parameter.



MOVING FROM 8.10.1

Back-end application deployment

You must check the configuration of the deployment environment to ensure that the new security checks against the "cache poisoning" and "arbitrary URL redirect" do not cause Web application errors.

You can verify that the Web application does not work due to these new security checks by looking at the StrutsError.log file. This log will contain a warning like the following:

```
Validation failed for target host
```

You must add some configurations to the deploy environment to solve this issue.

- In case of reverse proxy you have two options: either you configure the list of valid virtual hosts in the RTXConfig.properties file setting the "`hostWhitelist`" property or you set the "`hostAlwaysAllowed`" property in the same file and check that the reverse proxy is configured with a white list of valid domains.
- In all other cases you have to check that the application server is able to execute a reverse lookup DNS of their address. Otherwise you can set the "`hostWhitelist`" property in the RTXConfig.properties file.

You must check the deployment plans contained in your Web project to ensure that all changes done to fix the security warnings are also reported in each deployment plan.

MOVING FROM VERSION 8.9

This section aims to help you to migrate your project from version 8.9 to version 8.10. You must read this section if you have a **custom mobile style project** or a **custom mobile components project** using one or more of Native Plugins.
You should review the Native Plugin list included in your projects, due to the update of Apache Cordova to version 7. If you are using a Native Plugin included in WebRatio Platform, please check that the reference is still valid. If not, please update it, selecting the plugin again from the provided list. If you are using a Native Plugin which is not included in WebRatio Platform, please download a new version of this plugin, checking that it is compliant with Apache Cordova 7.1.1.

You should review your application once installed on iPhone X. It may happen that your custom style does not handle properly the iPhone X screen. This results in screens that are partially cut from the irregular areas of the iPhone X screen. You have to change some CSS rules using the set of variables provided by the devices.

These variables are:

- `safe-area-inset-top`
- `safe-area-inset-bottom`
- `safe-area-inset-left`
- `safe-area-inset-right`

This is an example of a CSS rule adapted for iPhone X.

```
.topBar {

      /* any Android and iOS less then 11.0 */
      padding-top: 20px;
      /* iOS 11.0 */
      padding-top: constant(safe-area-inset-top);
      /* iOS 11.2 */
      padding-top: env(safe-area-inset-top);

}
```

NOTE
Please use the syntax belonging to the proper target operating system. iOS 11.0 recognizes the constant() function , while on iOS 11.2 or higher the env() function should be used. Please refer to the following links for further information:

- iPhone X guidelines
- Designing websites for iPhone X
- iOS 11 Checklist

FIXED IN 8.10.4

- Fixed the Geolocation Native Plugin so that the Apple Store now accept its usage without giving warnings. These are the Apple Store requirements:

  Starting Spring 2019, all apps submitted to the App Store that access user data are required to include a purpose string. If you're using external libraries or SDKs, they may reference APIs that require a purpose string. While your app might not use these APIs, a purpose string is still required.

- WebRatio generated mobile apps for **Android** now are built using the Cordova Android Platform 8.0.0 to meet the new requirements of Google Play Store summarized here:

  *Starting from August 2019, the Google Play Store requires new and updated apps to target Android Pie (**API level 28**).*

  You just need to re-build your mobile app to meet this requirement.

- The "Generate Branding Assets" command now generates the required "icon.png" file with size 192x192 for Android. This file was missing in the previous release.

- Fixed the status code returned from the REST API when a Data Service request contains an unexpected character in the "filter" query string parameter. Now the "400 Bad Request" status code is returned.

- Improved the reading of xlsx files managed by published data service avoiding memory consumption . Now the xlsx data is temporarily stored on hard disk instead of memory.

FIXED IN 8.10.3

- WebRatio generated mobile apps for **iOS** now are build using the SDK 12 to meet the new requirements of Apple Store summarized here:

  Starting March 2019, all new apps and app updates for iPhone, including universal apps, will need to be built with the iOS 12 SDK and support iPhone XS Max. All new apps and app updates for Apple Watch will need to be built with the watchOS 5 SDK and support Apple Watch Series 4

  You just need to re-build your mobile app to meet this requirement.

- WebRatio generated mobile apps for **Android** now use the Firebase Cloud Messaging service to send push notifications. This change is due to the news that Google will shut down the Google Cloud Messaging (GCM) service on 11 April 2019. You just need to re-build your data service app to make it use the new service.
- Fixed the behavior of push notification on Android so that each notification received by the device does not replace the previous one.
- Fixed the PC emulator of mobile apps to be compliant with Google Chrome browser update 71 or higher.
- Improved the perspective layout organization by making the Properties View independent from the Outline. Now it's possible to freely resize the Properties View width. Reset the perspective using Window -> Reset perspective command to apply the new layout.
- Improved the validation associated to the App Version field in the Build Configuration of mobile projects. Now the expected pattern 00.00.00 is compared with the provided value. Please check your App Version in the Build Configuration dialog.
- Fixed the "Sandbox" flag in the Build Configuration dialog of DataService project. Now the flag properly saves its value overriding the project settings.

FIXED IN 8.10.2

Security Fixes

- Fixed an issue related to the publishing of REST web services in a Data Service Project. Now when the web service fails no exception trace is included in the response, preventing an "Information Disclosure" vulnerability.
- Fixed an issue that allowed to manipulate the "Host" header parameter in the Data Service Project. This issue could be exploited to carry out a "Cache Poisoning" attack. Now the "Host" header parameter is always validated using a whitelist coming from the web application or from the reverse proxy/application server.
- The Apache Commons File Upload library has been upgraded to version 1.3.3 to fix the vulnerabilities "CVE-2016-3092" and "CVE-2016-100031".
- Added the Password Strength validation rule that ensure that the provided password is a secure one. This validation rule can be used in a Data Service Project. It's mandatory on password attributes.

Other Fixes

- Changed the WebRatio Addon login mechanism to meet the new privacy requirements. Since this change involve external web services, previous WebRatio versions cannot access anymore the WebRatio Addon.
- Now it is possible to Generate and Run the back-end applications on a local test environment also in the Community Edition.
- Removed the CumuLogic Cloud Account and Deploy Configuration since the third party service is not available anymore.
- Fixed an issue that prevented the Restful Request Response Operation of the Data Service Project to properly call a Rest service in which the Content-Type response header is missing. Now the response is treated as a Text response.
- Fixed an issue related to XSD synchronization in the Domain Model of the Data Service Project. In particular the presence of both xsd:element and xsd:complex-type in the XSD produced duplicated elements in the domain model.

- Fixed an issue that prevented a REST web service request in the Data Service Project to be accepted when the endpoint contains the ".do" string.
- Fixed an error of the Data Service Project Create operation that prevented to properly save an incoming date having the ISO format.
- Fixed an issue of the Restful Request Response operation of the Data Service Project that prevent to call successfully some web services. In particular, some web servers may reject the user-agent used by the operation. Now a “safe” user-agent is sent for the request.
- Fixed the PBKDF2WithHmacSHA1 algorithm so that now the white space character can be used inside passwords.
- Added the Password Strength validation rule that ensure that the provided password is a secure one. This validation rule works both on client side and on server side. It’s mandatory on password attributes. Check the “Moving from 7.2.16” section to see the migration guide.
- Fixed a problem in the PC emulator that prevented to emulate IOS devices.
- Added the "ExtraAllowedSources" custom property on the mobile project to let the developer specify a whitelist of external URLs used by the project that must be trusted by the Content Security Policy used by mobile applications.
- Fixed the Update operation of the Mobile project so that the "bulk" mode treats properly input parameters passed as scalar values or arrays having length equals to one.
- Fixed the Create operation of the Mobile project so that the "bulk" mode treats properly input parameters passed as scalar values or arrays having length equals to one.
- Fixed an issue that prevented to see the error details when the generation of a mobile project fails. Now the generation process returns the expected error and details about it now.
- Fixed the Android build process of the mobile project so that no generation error is returned when you set “Free” in the Orientation property in the Mobile project.
- Fixed an error about the update of the user password when it is encrypted with the PBKDF2WithHmacSHA1 algorithm.
- Fixed the Data Services so that now when a validation error occurs, the response contains a meaningful message and not the error code.

- Fixed the Update operation of the Mobile project so that the "bulk" mode now fails when the input parameters do not contain enough values to update all retrieved objects.
- Fixed an issue related to the app versioning. In some case the converted version value of a new updated app results wrongly older than the previous version causing a block of the app deployment process on the Google Play Store.
- Fixed a problem in BarCode and Calendar components that prevented the IOS application to be approved by the Apple Store when containing these components.
- Fixed an issue related to the Empty Case of the Switch operation of the Mobile project. Now when the operation does not follow the EMPTY code when it receives in input an array with a null as first element.
- The Branding assets command of the Mobile project now creates all icons and splash screens for IOS applications.
- Fixed an issue related to wrong identification (content-type) of PDF files converted from Base64 to Blob on IOS mobile applications.
- Fixed an issue related to missing outbound synchronization of deleted items. Now the synchronization algorithm removes data from the central repository as expected.
- Fixed the Geolocation Native Plugin so that the Apple Store now accept its usage without giving warnings.

FIXED IN 8.10.1

- You need to provide additional icons for iOS mobile apps to full support the iPhone X device. You can generate all of them using the "Generate Branding Assets" command.
- Improved the mobile application performances. Now the object deletion is 360 times faster than the previous implementation.
- Fixed a security issue of the Mobile Default style. Now an external library is used to escape special characters instead of a custom code.
- Fixed a security issue on the published data service. Now the user private information (password, token, and so on) are not exposed when you publish data services for the "User" class. This happens also if you select these attributes by mistake.
- Fixed an error of the synchronization algorithm that prevented the update of the app to ends successfully in some cases.
- Fixed a problem of the Calendar View Component that prevented the emulation to work properly when the current locale is not one of the supported by the application.
- Fixed a problem of the Calendar View Component emulation. Now when the user saves an event on the calendar the location information is correctly shown.

THIRD PARTY LIBRARIES

Java libraries

Library	Link
ANTLR 2.7.7 ANTL is a language tool that provides a framework for constructing recognizers, compilers, and translators from grammatical descriptions containing Java, C#, C++, or Python actions.	ANTLR 2
Apache Commons BeanUtils Core 1.8.3 BeanUtils component provides easy-to-use wrappers around the Java language Reflection and Introspection APIs.	BeanUtils
Apache Commons Codec 1.10 Apache Commons Codec (TM) software provides implementations of common encoders and decoders such as Base64, Hex, Phonetic and URLs.	Codec
Apache Commons Collections 3.2.1 Commons-Collections builds upon the JDK data structures classes by providing new interfaces, implementations and utilities that accelerate development of most significant Java applications.	Collections
Apache Commons DBCP 1.4 This Commons package provides Database Connection Pools facilities.	DBCP
Apache Commons Digester 1.8.1 The Digester package lets configure an XML -> Java object mapping module, which triggers certain actions called rules whenever a particular pattern of nested XML elements is recognized.	Digester
Apache Commons Exec 1.2 Allow to execute the external processes from Java.	Exec
Apache Commons HttpClient 4 HttpClient provides an efficient, up-to-date, and feature-rich package implementing the client side of the most recent HTTP standards and recommendations.	HttpClient
Apache Commons IO 2.4 Commons IO is a library of utilities to assist with developing IO functionality.	IO
Apache Commons Lang 2.6	Lang

Lang provides a host of helper utilities for the java.lang API, notably String manipulation methods, basic numerical methods, object reflection, concurrency, creation and serialization and System properties.	
Apache Commons Logging 1.1.3 The Logging package is an ultra-thin bridge between different logging implementations. A library that uses the commons-logging API can be used with any logging implementation at runtime.	Logging
Apache Commons Net 3.3 Apache Commons Net library implements the client side of many basic Internet protocols. The purpose of the library is to provide fundamental protocol access, not higher-level abstractions.	Net
Apache Commons Pool 1.6 Pool provides an Object-pooling API, with three major aspects: a generic object pool interface that clients and implementers can use to provide easily interchangeable pooling implementations, a toolkit for creating modular object pools, several general purpose pool implementations.	Pool
Apache Cordova 6.1.1 Apache Cordova is an open-source mobile development framework.	Cordova
Apache Derby 10.5.3.0 Apache Derby is an open source relational database implemented entirely in Java.	Derby
Apache FontBox 1.5.0 Apache FontBox library is an open source Java tool to obtain low level information from font files.	FontBox
Apache HttpComponents 4.3.6 Apache HttpComponents project is responsible for creating and maintaining a toolset of low level Java components focused on HTTP and associated protocols.	HttpComponents
Apache JempBox 1.5.0 JempBox is an open source Java library that implements Adobe's XMP(TM) specification.	JempBox
Apache POI 3.11 Apache POI is a facility to create and maintain Java APIs for manipulating various file formats based upon the Office Open XML standards (OOXML) and Microsoft's OLE 2 Compound Document format (OLE2).	POI

ASM 3.3.1 ASM is an all purpose Java bytecode manipulation and analysis framework.	ASM
AWS SDK for Java 1.9.33 The SDK helps take the complexity out of coding by providing Java APIs for many AWS services.	AWS SDK
Aho-Corasick Aho-Corasick algorithm is used for finding occurences of words in text and it is faster than other common algorithms.	Aho-Corasick
c3p0 0.9.5 c3p0 is an easy-to-use library for augmenting traditional JDBC drivers with JNDI-bindable DataSources, including DataSources that implement Connection and Statement Pooling.	c3p0
Dom4j 1.6.1 dom4j is an open source library for working with XML, XPath and XSLT on the Java platform using the Java Collections Framework and with full support for DOM, SAX and JAXP.	Dom4j
Ehcache 2.10.0 Ehcache is an open source, standards-based cache that boosts performance, offloads your database, and simplifies scalability.	Ehcache
FontBox 1.5.0 FontBox is a Java library used to obtain low level information from font files. FontBox is a subproject of PDFBox.	PDFBox
Groovy 2.4.0 Groovy is an agile and dynamic language for the Java Virtual Machine that builds upon Java but has additional power features inspired by languages like Python, Ruby and Smalltalk and compiles straight to Java bytecode.	Groovy
Guava 18.0 The Guava project contains several of Google's core libraries: collections, caching, primitives support, concurrency libraries, common annotations, string processing, I/O, and so forth.	Guava
H2 1.3.176 H2 is a Java SQL in-memory databases database, very fast, open source, with JDBC API.	H2
HK2 2.2.0 HK2 is an implementation of JSR-330 in a JavaSE environment.	HK2

Hibernate 4.2.17 Hibernate is an object relational database persistence API that is the "de facto" standard for persistence in Java.	Hibernate
iText 2.1.7 iText is an open source library that allows to create and manipulate PDF documents.	iText
Jackson 1.9.13 Jackson is a multi-purpose Java library for processing JSON data format.	Jackson
Jackson 2.4.5 Jackson is a multi-purpose Java library for processing JSON data format.	Jackson
Jakarta Oro 2.0.8 The Jakarta-ORO Java classes are a set of text-processing Java classes that provide Perl5 compatible regular expressions, AWK-like regular expressions, glob expressions, and utility classes for performing substitutions, splits, filtering filenames, etc.	Oro
Java Annotation API 1.2 This JSR will develop annotations for common semantic concepts in the J2SE and J2EE platforms that apply across a variety of individual technologies.	Annotation
Java Persistence 2.0 API 1.0.1 The Java Persistence API provides a POJO persistence model for object-relational mapping.	Persistence
Java Transaction API 1.1 Java Transaction API specifies standard Java interfaces between a transaction manager and the parties involved in a distributed transaction system: the resource manager, the application server, and the transactional applications.	Transaction
Java Validation API 1.1.0 Validation is a Java specification which lets you express constraints on object models via annotations, provides the APIs to validate and reports the set of violations.	Validation
JavaMail API 1.5.2 The JavaMail API is a set of abstract APIs that model a mail system. The API provides a platform independent and protocol independent framework to build Java technology based email client applications. The JavaMail API provides facilities for reading and sending email. Service providers implement particular protocols.	Mail

Javassist 3.18.2 Javassist (Java programming assistant) is a load-time reflective system for Java. It is a class library for editing bytecodes in Java.	Javaassist
JAX-RS 2.0 JAX-RS is a Java programming language API that provides support in creating web services according to the REST architectural pattern.	JAX-RS
JBoss Logging 3.1.4 JBoss Logging is a "logging bridge" providing integration with numerous logging frameworks.	Logging
Jaxen 1.1.6 Jaxen is an open source XPath library written in Java. It is adaptable to many different object models, including DOM, XOM, dom4j, and JDOM.	Jaxen
JCaptcha 1.0 JCAPTCHA stands for Java Completely Automated Public Test to tell Computers and Humans Apart. It is the open source java framework for captcha definition and integration.	Captcha
JCommon 1.0.15 JCommon is a Java class library that contains miscellaneous classes for chart displaying.	JCommon
JempBox 1.5.0 The Apache JempBox library is an open source Java tool that implements Adobe's XMP(TM) specification. JempBox is a subproject of Apache PDFBox.	PDFBox
Jersey 2.6 Jersey provides it's own API that extend the JAX-RS toolkit with additional features and utilities to further simplify RESTful service and client development.	Jersey
Jericho HTML Parser 3.3 Jericho HTML Parser is a java library allowing analysis and manipulation of parts of an HTML document, including server-side tags, while reproducing verbatim any unrecognised or invalid HTML	Jericho
JFreeChart 1.0.12 JFreeChart is a Java chart library that makes it easy for developers to display professional quality charts in their applications.	FreeChart
Joda-Time 2.4 Joda-Time provides a quality replacement for the Java date and time classes.	Joda-Time

Json-smart 1.3 Json-smart is a performance focused, JSON processor lib.	Json-smart
JSP API 2.2.1 JSP provides a container independent implementation of JSP 2.1.	JSP
JSR-330 2.2.0.b25 JSR-330 standardizes annotations like @Inject and the Provider interfaces for Java platforms.	JRS-330
JSR 305 1.3.9 JSR 305 works to develop standard annotations (such as @NonNull) that can be applied to Java programs to assist tools that detect software defects.	JSR305
JSTL API 1.2.1 JSTL is a standard tag library for JSP pages.	JSRL
Log4j 1.2.17 Apache log4j is a logging library for Java.	Log4j
Logstash log4j extensions 1.6.0 Logstash is an open source data collection engine with real-time pipelining capabilities.	Logstash
Lucene 2.3.2 The Apache LuceneTM project develops open-source search software.	Lucene
Metrics 3.0.2 Metrics is a Java library which gives you unparalleled insight into what your code does in production.	Metrics
MIMEpull 1.5 Mimepull project provides a streaming API to access attachments parts in a MIME message.	MIMEPull
PDFBox 1.5.0 Apache PDFBox is an open source Java tool for working with PDF documents. This project allows creation of new PDF documents, manipulation of existing documents and the ability to extract content from documents.	PDFBox
Quartz 2.1.7 Quartz is a richly featured, open source job scheduling library that can be integrated within virtually any Java application - from the smallest stand-alone application to the largest e-commerce system.	Quartz
Saxon 6.5.5 Saxon is a Java XSLT and XQuery Processor.	Saxon

Slf4j 1.7.10 The Simple Logging Facade for Java is a simple facade or abstraction for various logging frameworks (e.g. java.util.logging, logback, log4j) allowing the end user to plug in the desired logging framework at deployment time.	Slf4j
Spring Framework 4 • Spring AOP 4.1.4 • Spring Beans 4.1.4 • Spring Context 4.1.4 • Spring Context Support 4.1.4 • Spring Core 4.1.4 • Spring Expression Language 4.1.4 • Spring Web 4.1.4 • Spring Web MVC 4.1.4 The Spring Framework provides a comprehensive programming and configuration model for modern Java-based enterprise applications - on any kind of deployment platform.	Spring
Standard Taglib 1.2.1 Apache Standard Taglib is an implementation of the JSP Standard Tag Library specification.	Taglib
Textmining Extractors 1.0 Java API to extract Microsoft Word documents.	Textmining
Vert.x 2.0.2 Vert.x lets your app scale with minimal hardware.	Vert.x
WSDL4j 1.6.3 The Web Services Description Language for Java (WSDL4J) allows the creation, representation, and manipulation of WSDL documents. Is the reference implementation for JSR110 'JWSDL' (jcp.org).	WSDL4j
XMLBeans 2.6.0 XMLBeans is a technology for accessing XML by binding it to Java types.	XMLBeans
XMLSchema 1.4.7 XMLSchema is a lightweight Java object model that can be used to manipulate and generate XML schema representations.	XMLSchema
ZXing 3.1.0 ZXing is an open-source, multi-format 1D/2D barcode image processing library implemented in Java, with ports to other languages.	ZXing

JavaScript libraries

Library	Link
Angular 1.5.5 AngularJS is a toolset for building the framework most suited to your application development.	Angular
Angular UI Router 0.2.13 UI Router is the de-facto solution to flexible routing with nested views in AngularJS.	UI Router
Babel Loader 5.0.0 Babel Loader allows transpiling JavaScript files using Babel and webpack.	Babel
Big Js 2.5.2 Big Js is a small, fast JavaScript library for arbitrary-precision decimal arithmetic.	BigJs
Cldr Js 0.4.1 CLDR provides key building blocks for software to support the world's languages, with the largest and most extensive standard repository of locale data available.	Cldr
CKeditor 4.3 CKEditor is a ready-for-use HTML text editor designed to simplify web content creation. It's a WYSIWYG editor that brings common word processor features directly into web pages.	CKeditor
ES6 Promises 2.2.0 Promises are a pattern that helps with one particular kind of asynchronous programming.	Promises
ExplorerCanvas 3 ExplorerCanvas bring HTML5 canvas tag functionalities to Internet Explorer.	Canvas
Flotr2 2.0 Flotr2 is a plotting library to draw HTML5 charts and graph.	Flotr2
Ionic 1.3.5 Ionic is a powerful HTML5 SDK that helps you build native-feeling mobile apps using web technologies like HTML, CSS, and Javascript.	Ionic
JayData 1.3.6 JayData is a standards-based, cross-platform Javascript library and a set of practices to access and manipulate data from various online and offline sources.	JayData
jQuery Timepicker Addon 1.4.5	Timepicker

Timepicker extends jQuery UI Datepicker for entering times and timestamps.	
JQuery 1.7.2 jQuery is a fast, small, and feature-rich JavaScript library with an easy-to-use API that works across a multitude of browsers.	JQuery
JQuery BBQ 1.2.1 BBQ is a jQuery plug-in that allows simple, yet powerful bookmarkable #hash history.	BBQ
JQuery Cookie 1.3.1 A simple, lightweight jQuery plugin for reading, writing and deleting cookies.	Cookie
JQuery DialogExtend 1.0 A simple, lightweight jQuery plugin for Maximizing and Minimizing Buttons for UI Dialog.	Dialog
JQuery UI 1.9.2 jQuery UI is a curated set of user interface interactions, effects, widgets, and themes built on top of the jQuery JavaScript Library.	UI
JsDump 1.0.0 This script library can dump any type of Javascript data (or most), thus, generating a string out of the received information.	JSDump
JsHashtable 2.1 JsHashtable is a standalone implementation of hash table in JavaScript.	JSHashtable
ParseURI 1.2.2 Split URLs in JavaScript.	ParseURI
Respond.js 1.4.0 Respond is a fast & lightweight polyfill for min/max-width CSS3 Media Queries (for IE 6-8, and more).	Respond
Underscore 1.3.3 Underscore is a utility-belt library for JavaScript that provides a lot of the functional programming support like both the usual functional suspects: map, select, invoke - as well as more specialized helpers: function binding, javascript templating, deep equality testing, and so on.	Underscore
Underscore String 2.2.0rc Underscore String is a String manipulation extensions for Underscore.	Underscore
XRegExp 2.0.0	XRegExp

XRegExp is an open source JavaScript library that provides augmented and extensible regular expressions.	
Webpack 1.8.5 WEbpack allows to split your codebase into multiple bundles, which can be loaded on demand.	Webpack

OLDER RELEASES

Here you can find the release notes of previous WebRatio Mobile Platform releases:

- WebRatio Mobile Platform 8.9 Release Notes
- WebRatio Mobile Platform 8.8 Release Notes
- WebRatio Mobile Platform 8.7 Release Notes
- WebRatio Mobile Platform 8.6 Release Notes
- WebRatio Mobile Platform 8.5 Release Notes
- WebRatio Mobile Platform 8.4 Release Notes
- WebRatio Mobile Platform 8.3 Release Notes
- WebRatio Mobile Platform 8.2 Release Notes
- WebRatio Mobile Platform 8.1 Release Notes
- WebRatio Mobile Platform 8.0 Release Notes

SYSTEM REQUIREMENTS

WebRatio Development Platform

Operating System

- Microsoft Windows Vista or higher, 64 bit
- Linux, 64 bit
- Mac OSX 10.7 (Lion) or higher, 64 bit

Installing WebRatio Development Platform also requires:

- Disk Space: 600 MB
- RAM: 4 GB minimum, suggested is 8 GB

Java

When running WebRatio Development Platform on a computer you will need the Java Runtime Environment (JRE) 1.8. The other versions are not supported.
You can download JDKs here:
http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

WebRatio Generated Server Applications

Application Server

When running WebRatio Generated Server Applications on a server you will need a Java Application Server compatible with Servlet 3.0 and JSP 2.2.

Java

When running WebRatio Generated Server Applications on a server you will need the Java Runtime Environment (JRE) 1.7 or higher.
You can download JDKs here:
http://www.oracle.com/technetwork/java/javase/downloads/index.html

WebRatio Generated Mobile Applications

The Mobile Apps generated with WebRatio Mobile Platform are compatible with:

- Android 4.4 or higher
- iOS 9.0 or higher

LIMITATIONS

WebRatio Generated Mobile Applications

Mobile Apps data synchronization performance has been verified and it can be guaranteed up to certain limits on modern devices.
The average time needed to complete the synchronization of fewer than 500 objects is about 5 seconds.
The average synchronization time increases to 30 seconds when the synchronized data goes up to 3000 objects.
WebRatio does not guarantee the synchronization performance when the synchronized data are above 3000 objects.

WEB RATIO®

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