convertigo

What's new in Convertigo 7.4 (Argon)

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Introduction

Convertigo 7.4 is the new release of the leading Open Source Mobility platform featuring a powerful back-end server mBaaS an integrated hybrid MADP based on Cordova and open SDKs able to integrate Native iOS Android and Xamarin mobile apps.

Convertigo 7.4 is a major release of the platform. This version adds new functionalities and enhances existing ones. This document will describe all the new features available in this release.
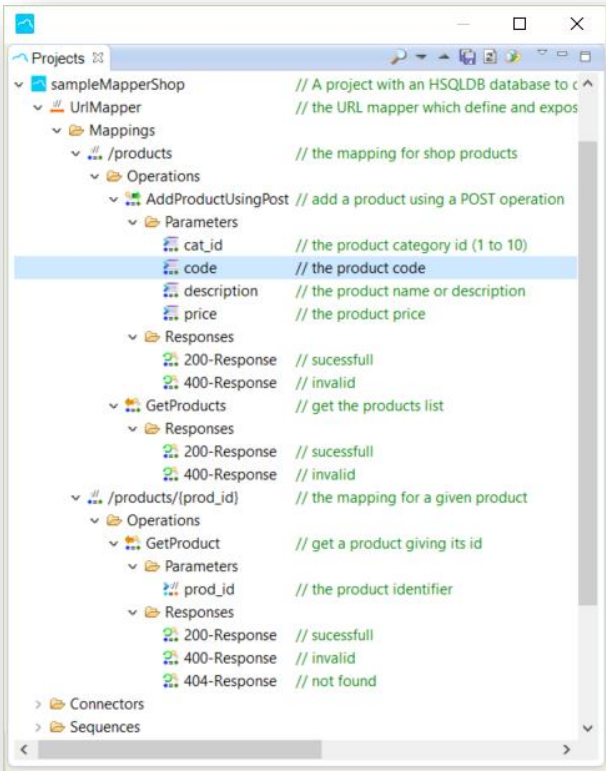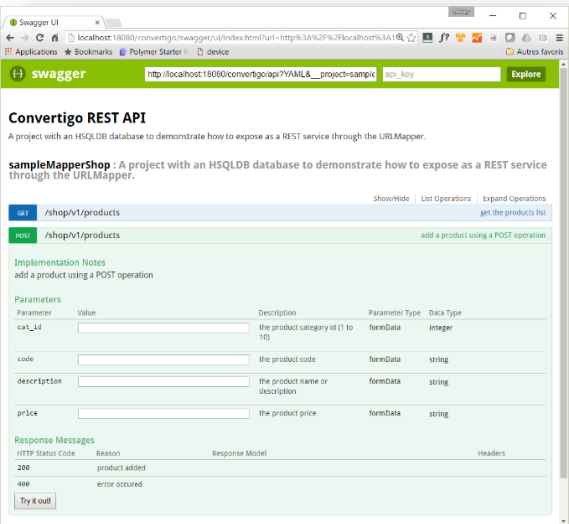
URL Mapper

The URL mapper module role is to expose Convertigo mBaaS services a RESTful URLs. By default all Sequences are exposed to the outside world as REST/XML or REST/jSON services but they follow a fixed URL scheme.

Convertigo Mobile framework and SDKs are designed to comply automatically with this scheme, but if you want to expose your services to some outside non Convertigo clients you might want your services to comply with a customized designed URL scheme. This is where the URL Mapper comes in!

Url Mapper objects

Any Convertigo project may have the new URLmapper objects in the "URLMapper" folder. You can configure here URL patterns and the Sequences that must be launched when a given HTTP verb is invoked. For example, POST on /api/v1/accounts/{id} should trigger the **InsertAccount** Sequence, passing **id** and the POST **body** as variables to the sequence, and the return status code should be 200 if no error occurred or 401 if the account does no exists.

This can be accomplished by just setting up some URLMapper objects in the project folder without any programming as seen above.

Swagger console

Once the project is setup this way, opening the integrated SWAGGER console will display all the RESTful service definitions and documentation. Also the Service definition si automatically generated as YAML or jSON so you can import it in any client consuming this REST web Service.

## Return jSON without "document" object

A new project property called **JSON object output** controls how jSON data is returned to the consumer. If you choose "document child nodes", there will no surrounding "document" object.

New HTTP REST Connector

This release brings in the new HTTP connector for accessing REST and SOAP web services. Enhancements have been made to handle RESTful services more easily.

Import YAML/jSON service definitions

Now you can import a YAML or a jSON definition by right-clicking a project and choose "New Reference" This give you the Reference wizard where you can choose REST reference
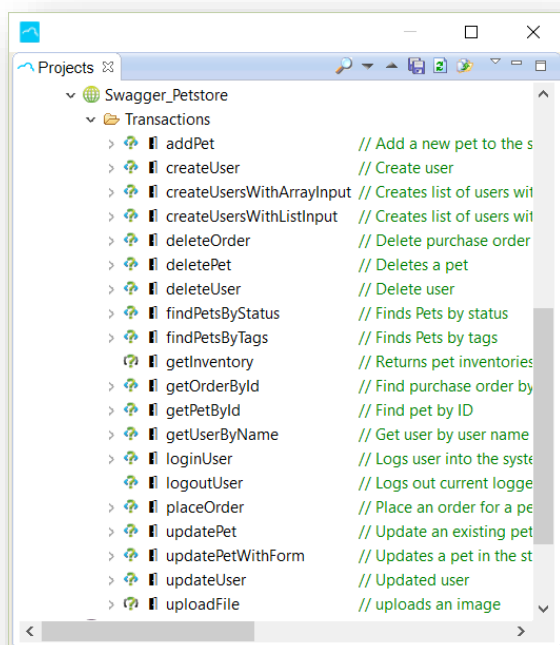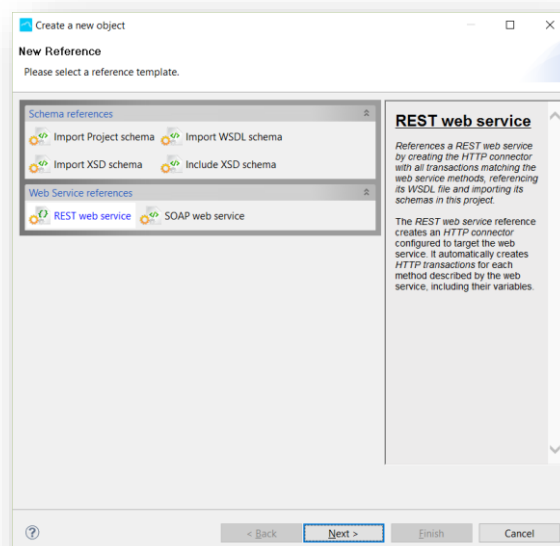

Importing the YAML or jSON reference will automatically create the HTTP connector with all the transactions defining this web service.

The wizard also use the YAML documentation to automatically configure the transactions comments.

New Connector URL scheme

You can now use the '{param}' syntax in your HTTP connector **sub path** properties. This will automatically create the corresponding transactions variables. The target REST Service URL will dynamically computed with values provided to variables when executing the transactions
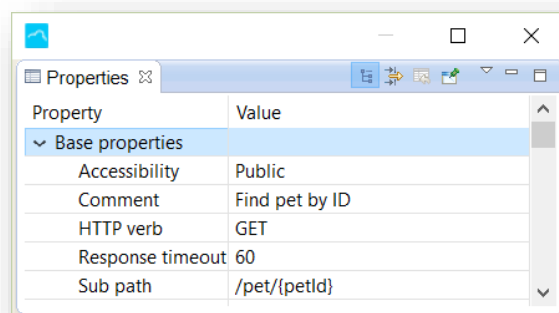
New HTTP system variables

The HTTP connector now supports new system variables you can use to populate some HTTP protocol elements more easily:

- **__body** defining the HTTP body content for POST or PUT verbs
- **__contentType** defining the body content type
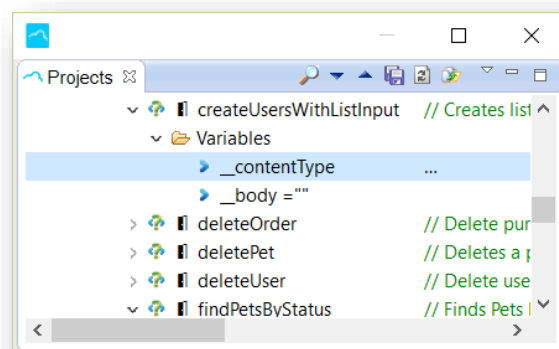
Upload binary content support

You can use the FileUploadMode property value to **multipartFormData** to handle file uploads. The variables value must be valid file paths to the files to be uploaded.

When the transaction is executed, the files will be uploaded using the **multipartFormData** mime type.
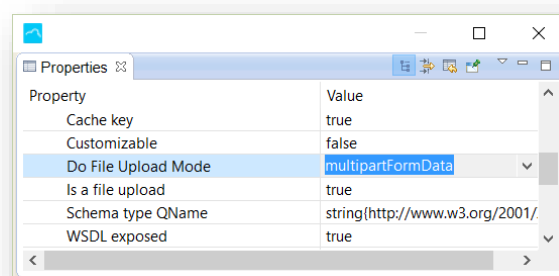
Role based administration

In large enterprises administration tasks may be done by several people having different roles. To handle this Convertigo now supports a role based administration console

Adding accounts

You can now add new accounts to the built-in admin, test platform and anonymous users. When you add an account it will be inserted in the account database and the password will be stored using MD5 hashing.

For each account created you can setup roles defining what this account will be allowed to do with the console.

Each role has a **VIEW** (Read some configuration element) and a **CONFIG** (Set up and write a configuration element)

This way you can define accounts that only have the right to display the Convertigo admin settings   without modifying them.

Admin API role checking

Roles are also checked for the Admin Web Services API. This will prevent unauthorized users to modify admin settings by using RESTful WS request on Convertigo servers.

New Sequencer steps

Convertigo 7.4 introduces new steps you can use in your sequences. The goal is to reduce the number of times you have to program some JavaScript in a Sequence JS step.

LDAP Step

This new step will handle the entire LDAP authentication for you.

The goal of this step is to check that a user/password can bind correctly to a LDAP directory. If the user is authenticated (bind successful) then the Session will be automatically

For Microsoft Active Directory, the user can be:

- A NT account name (DOMAIN\user)
- A full name (Mark Twain)
- An account (account@mydomain.com)

For other directories, you can configure the step to search for given directory name (DN) and then bind using this DN.

For this you will have to configure the search root and a Directory DN / password able to perform these searches.

You can give in the **LDAP servers** property a list of LDAP servers separated by a comma. This way the LDAP step will try to bind on each of these LDAP servers.

LDAP user login and LDAP user password can be sourced from the credentials a mobile user login from could provide.
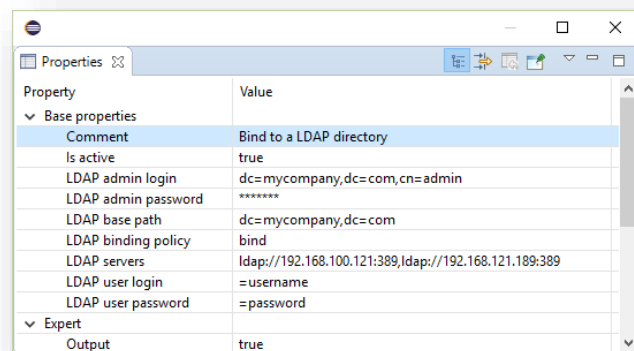
HTTP control steps

You can now control in your sequences some response HTTP protocol elements such as response headers and the response status

- Use the **Set response header** step to add a custom response header to your REST response.
- Use the **Set response status** step to set a custom HTTP status code to you REST response.
- Use the **Get request header** step to read a HTTP header from the request
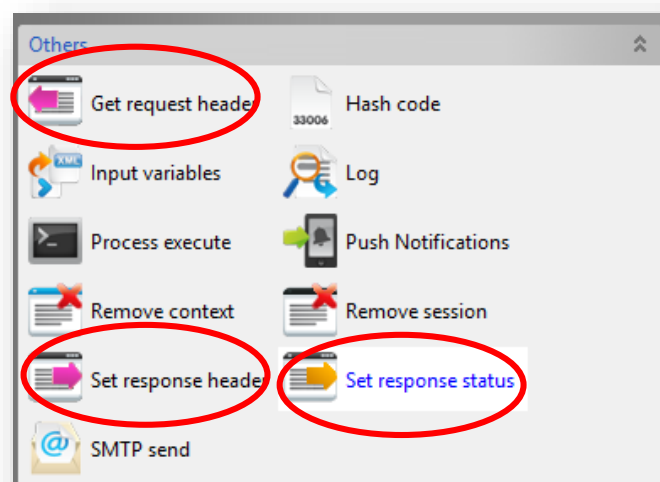
Studio enhancements

Convertigo Studio based on Eclipse is used to program Convertigo projects. Some useful enhancements have been made to increase developer productivity.

Convertigo object comments

All Convertigo project objects have a **Comment** property that you can configure. Unfortunately this was not clearly visible in previous versions.

In Convertigo 7.4 Comments properties will appear in green by the side of the object, giving much better visibility.

The first line of the comment property will be displayed. All other lines will be shown when editing the Comment property.

You can directly edit a comment by clicking on the comment itself and when there is no comment yet by clicking on the' …' next to objects.

Avoid useless conflicts when committing on source control

In previous version each time you saved a Convertigo project an attribute called "exportdate" was update in the <project>.XML. This was causing a conflict on the project object as the same line had always different "exportdate" attribute values.

This attribute is now not used anymore so your <project>.xml file will not conflict anymore for nothing.

Edit beginning of XPATHs in source picker

Previous version was preventing you to edit the beginning of an XPATH in Source picker. Now you can, useful for Xpath function such as concat() or substring-after()
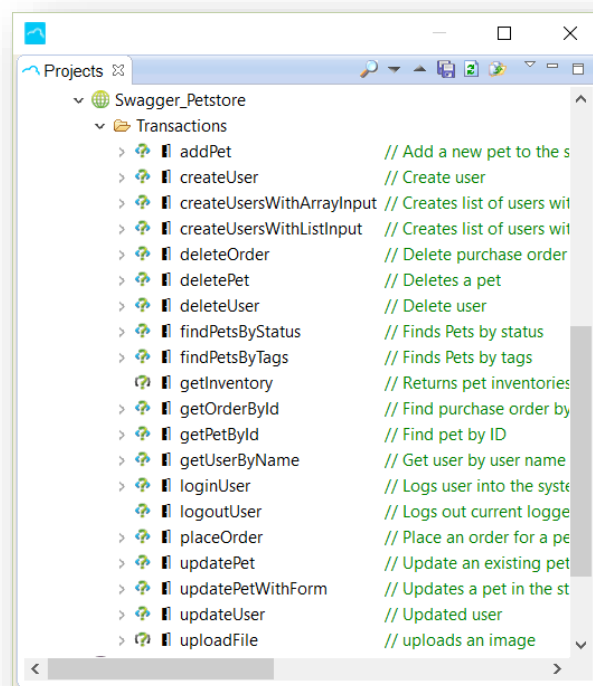
Enable symbols for list properties

Previous versions of studio were not able to setup global symbols for properties having lists such as Boolean properties. This now possible by selecting the ${symbol} entry in the list
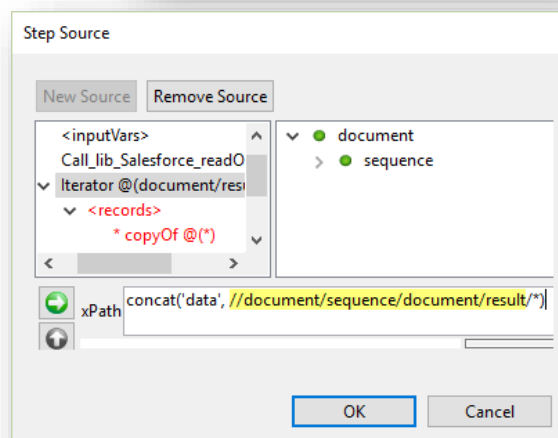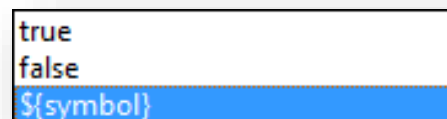
New local build engine

Local build makes it possible to build mobile apps directly on the developer workstation, opposed to cloud build using Convertigo cloud resources to build mobile apps.

Convertigo 7.4 brings a brand new build engine with these enhancements:

Multiple Cordova version management

Convertigo 7.4 will now automatically handle several version of Cordova on the same workstation. Also Cordova configuration and installation will be done automatically.
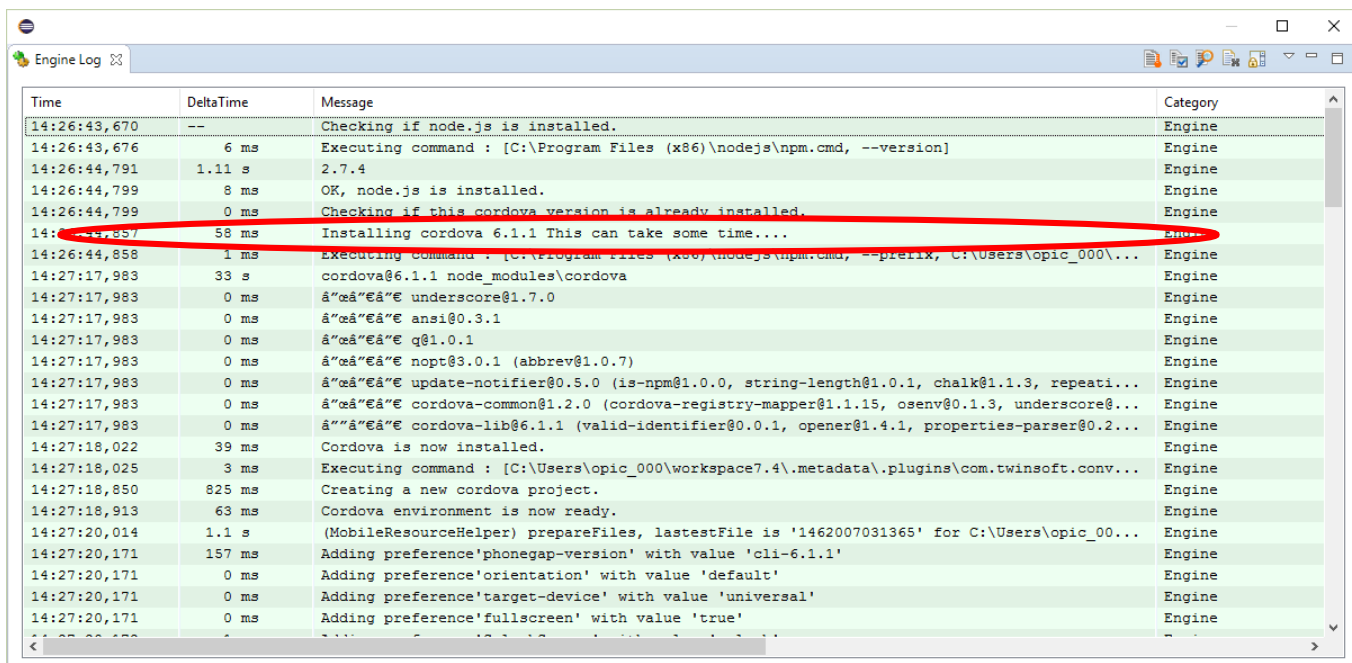
You just have to configure your config.xml (as provided in the templates) and Convertigo will do all the work by itself, downloading the correct Cordova version, the required plugins, build or build and run the app on the target device or simulator.

The only thing you have to configure by yourself is a valid NodeJS installation and the required SDK tools for the target platform mobile development.

Cordova versions will coexist side by side in the

`<workspace>\.metadata\.plugins\com.twi nsoft.convertigo.studio\cordovas`

Directory

Support for newest Cordova versions

Convertigo 7.4 has been tested with Cordova from 4.0 to 6.1 versions ensuring high compatibility with Cordova. Any new Cordova version will be automatically supported by just configuring the config.xml.

- Configure the X.Y.Z

  ```
   <preference name="phonegap-
  version" value="cli-X.Y.Z" />
  ```

  to the new Cordova CLI (Command Line Interface) version.

- Configure the X.Y.Z

  ```
  <engine
  name="$(CordovaPlatform)$"
  spec="~X.Y.Z" />
  ```

  to the wanted Cordova platform version for your target platform.

Full Support for Windows Platforms

Convertigo 7.4 brings full support for Windows Mobile platforms. You can now use the Windows UWP (Windows 10 and Windows Mobile 10), Windows 8.1 and Windows Phone 8.1 Convertigo mobile platform objects to build the apps for the requested targets.

Each of these platforms will have a different Config.xml file with directives to build the app accordingly.
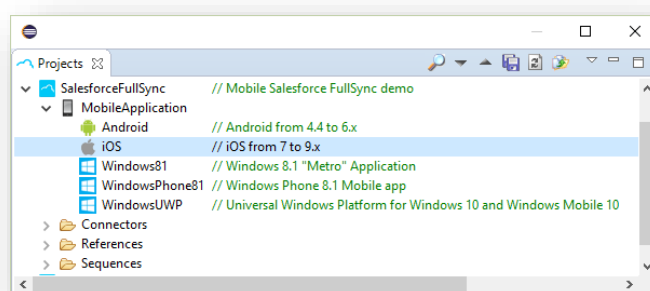
Performance enhancements

Convertigo has gone through several performance enhancements since version 7.3. A significant performance increase as been done between 7.3.3 and 7.3.4 by using a different algorithm while generating XML outputs in the sequencer.

Convertigo 7.4 goes further by introducing a new XPATH engine.

New XPATH Engine property

All previous versions of Convertigo were using the standard Apache Xalan Xpath engine. Benchmarking and testing made it appear as a strong bottleneck for Convertigo performances.

Sample sequence execution time (mS)
(the lower the better)
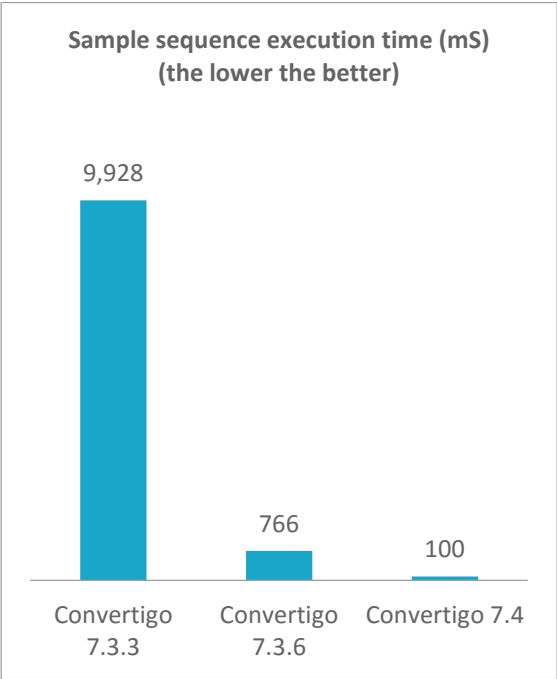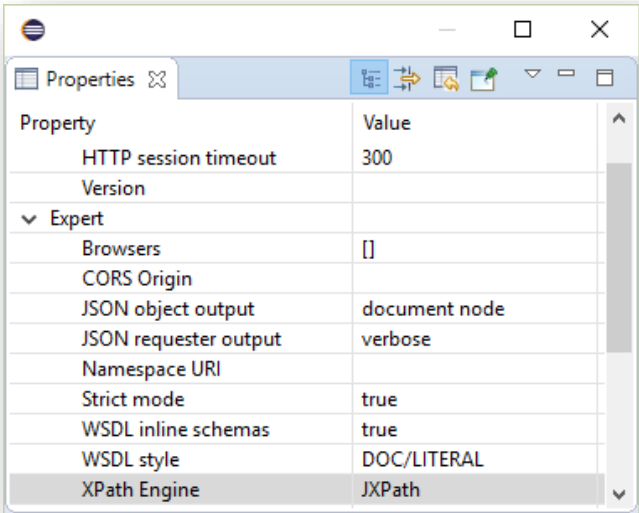
A new XPath engine, **JXPath** has been implemented increasing drastically performances for Sequencer iterations on node lists. With this XPath engine Convertigo has a 10x performance increase on long iteration loops compared to previous versions.

By default all projects will use the new XPath engine. All previous projects migrated to this new version will automatically benefit from this engine. In any case you find a regression in your project you can switch to the standard **Xalan** engine by configuring the project's **XPath Engine** property

Miscellaneous

General enhancements and new features are presented here

New 'Required' property on variables

When developing sequences you often have to check if a variable value is set and throw an error if it's not. Convertigo now dose this automatically by providing the **required** property on a variable.

If this property is set to **true** and that the requestable's (Sequence or Transaction) variable is empty, then Convertigo will return an error automatically.

Opening admin console from the Studio

The open console menu from the Convertigo menu in studio was already opening the Web Admin console for the internal built-in Convertigo Studio server but you had to login in with admin credentials in order to use it.

You will be now automatically signed in as admin on this console.

Exporting projects without test cases

You can now choose to export or deploy your projects without the test cases. This is useful for production when you do not want some test case data to be published to production servers.

Enhanced Push notification step

The **Push notification** step has been enhanced to support complex data as payload. This way you can control much better the data you send mobile devices and handle badges, sound, and specific platform capabilities

Hybrid mobile CTF wait indicator

You can now set the minimum time to wait for a C8O.call response before having the Wait indicator displayed. This is useful when you use local data from **FullSync**. As this data is returned very quickly, you usually want to avoid displaying the wait indicator causing flickering UIs.

Use objects in C8O.log

You can now use JavaScript objects as arguments to the C8O.log function in the Convertigo Hybrid framework API. This will result having you object automatically serialized and displayed in the server(s execution console device logger.

Silent server install mode for Linux

Now the Linux .run package supports an optional silent install mode removing all interactive questions, see –h options. This is useful for automatic Convertigo server deployments.

64 Bit .run install package

Linux servers does now have a 64 bits Convertigo server .run install package. This provides the 64 JVM, Tomcat and Convertigo server with 64 Bits version of the HTML connector.

Although Convertigo does support 64 bits VMs, we strongly discourage their usage for the HTML connector as this leads to very poor performances.

About Convertigo

With this major release Convertigo is brought to the next level of Enterprise mobility.

Convertigo commitment is to provide the best Open Source Enterprise grade products for leveraging Enterprise skills and assets to build exciting mobile solutions increasing business productivity.

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