



The definitive guide for Mobile Enterprise Application Development



Table of contents

Architecture of a Mobile Platform	3	Push notifications	15
Design and build Mobile services	4	Deploying mobile applications	16
Publish Mobile Services	6	Continuous Integration	17
Connecting to backend data	7	Configuration and monitoring	18
Legacy Connectors	8	Cloud or on premises	19
Mobile Security	9	IoT Integration	20
Design and build Mobile UIs	10	Analytics	21
Angular 2 / Ionic 2 Support	12	Product line	22
Offline data capabilities	13	Conclusion	23
Large file transfer for offline mode	14	About Convertigo	24

New devices, new usages, new business requirements... With 75% or more of applications being mobile by 2016, enterprise IT teams are facing constant new challenges to design, develop, deploy, distribute and manage a portfolio of numerous B2E or B2C mobile applications!

Such complex and moving context makes specific developments hazardous, expensive and time consuming.

In most Enterprises, CIOs are facing Line of Businesses always asking for new applications and usages, while they have to preserve his global information system architecture's integrity and security.

Automated production 100% dedicated to mobility allows speedy developments and instant ROI, especially when it comes to launching or managing numerous apps. Mutualized developments using prebuilt components, processes, tests and templates ensure cost effective and reliable production and reduce time to market for new mobile applications and frequent updates.

Mobile Application Development Platforms industrializes new mobile applications production, or transforms existing enterprise business applications. It ensures that customers have the appropriate enterprise grade security, governance and performances and delivers standardized rich user experience leveraging any device features.

Architecture of a Mobile Platform

A mobile platform differs from a simple mobile application development tool by providing all the components needed to build, run, manage and connect mobile applications to the existing Enterprise Information system.

A Mobile application development platform should include the following capabilities:

- **Mobile back end connectors** to enable mobile apps to connect to the enterprise databases and business applications.
- **Mobile service orchestrator** to enable back end data to be aggregated, filtered and combined to provide a mobile friendly service API. The orchestrator can also augment existing backend application with mobile specific capabilities such as push notifications or locator services.
- **Cross platform UI** development tools to build mobile user interfaces able to run on multiple devices operating systems such as Apple iOS, Google Android or Microsoft Windows Phone.

More advanced Mobile application development platforms provide additional features such as:

- **Cache Manager** to cache on the server side some data avoiding to get it each time from the backend connectors.
- **Identity manager** to be able to authenticate mobile users and to check their rights from an Enterprise user management system or from an identity federation.

- **Off line data synchronization** enabling mobile users work on local data when the network is not available and still be able to sync back this data to the backend systems when the network is restored.
- **Security managers** to encrypt sensible data on the network or on the mobile device.
- **Mobile application SDKs** to be able to integrate other third party mobile UI development tools
- **Integration with Analytics** engines to provide insights for line of businesses, system administrators and mobile developers.
- **Audit management** to provide security officers to track back any mobile transaction made on the enterprise information system.



Convertigo Mobility Platform is the first open source mobile platform to provide a complete combined end to end from backend enablement to mobile UI development tools integrated in one unique MADP (Mobile Application Development Platform) and MBaaS (Mobile Backend as a Service).

The platform is composed of several components, the Convertigo Server, Studio and Third party SDKs.

Design and build Mobile services

Any enterprise mobile application needs mobile services to interact with the enterprise data. Mobile services are usually built on top of existing backend services provided by ESBs or other SOA based architecture, or can be developed from scratch using some backend storage engine.

A mobile application running on a device will interact with mobile services using standard protocols based on HTTP/HTTPS JSON or XML format.

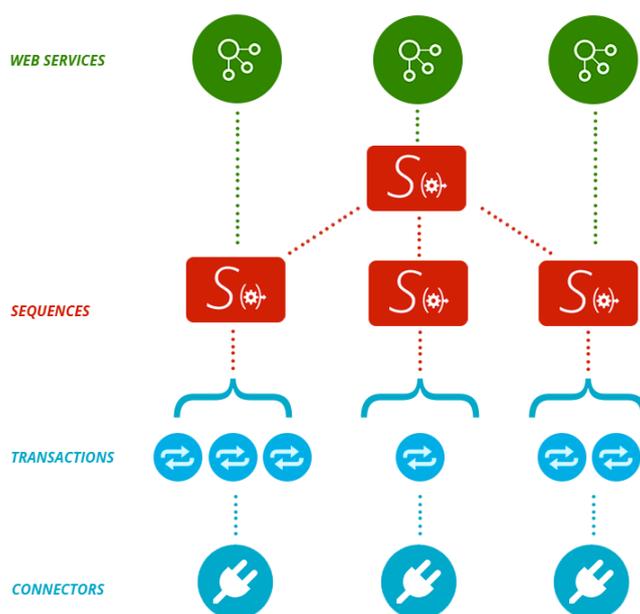
Mobile services can be defined from a bottom up approach (Where the service model is defined by the service developer) or from a top/down approach where the service model is defined by the Mobile UI developer.

A very common situation is that existing Enterprise services are not designed for mobility, or even not designed for the mobile business rules.

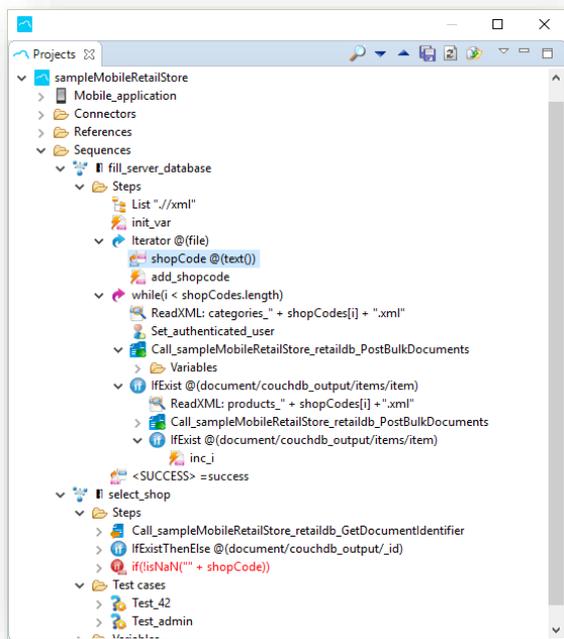
Convertigo Mobility Platform MBaaS component addresses these requirements with:

- **Protocol transformation** enabling transformation of existing internal services including SOAP, SAP BAPIs, REST/XML, SQL, NoSQL to mobile friendly REST/JSON mobile services.
- **Data filtering** to expose only needed data model to mobile devices from existing "heavy" internal services
- **Business logic** augmentation to enhance existing internal services for mobile processes, or to build from scratch new mobile services directly from a SQL or NoSQL data repository.

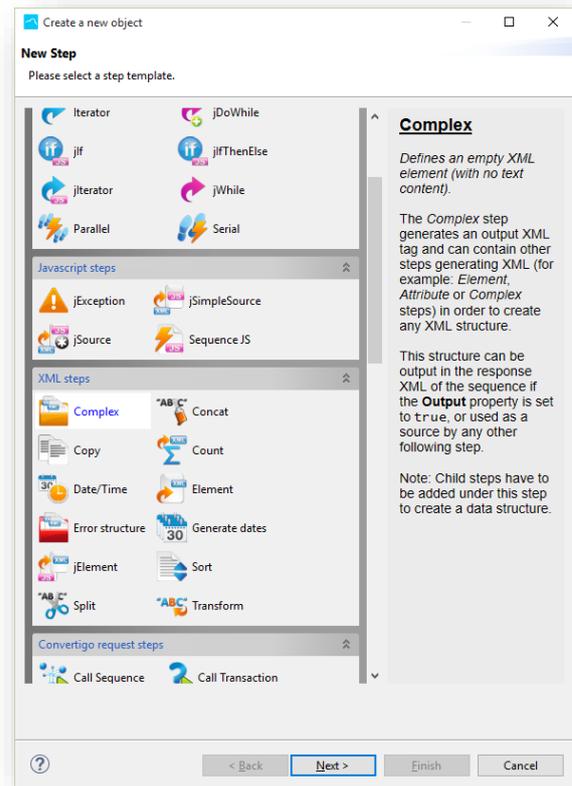
Convertigo MBaaS mobile services are built using a very powerful concept called "Sequences", basically defining all the "Steps" needed to get the data, transform it, handle it with business rules and return it to the mobile device.



Building **Sequences** does not require programming in a specific language and is simply based on object configuration using the Eclipse based Convertigo Studio GUI.



Convertigo uses a library of predefined **Steps** to handle most of the requirements for backend service programming



Sequences can also be enhanced by using Special "Javascript" **Steps** able to perform complex business logic. These steps can even call some custom Java classes.

With all these capabilities, the mobile service developer using **Sequences**, will develop the services significantly faster and will reduce maintenance costs compared to classic programming using PHP, Java or C#.

Publish Mobile Services

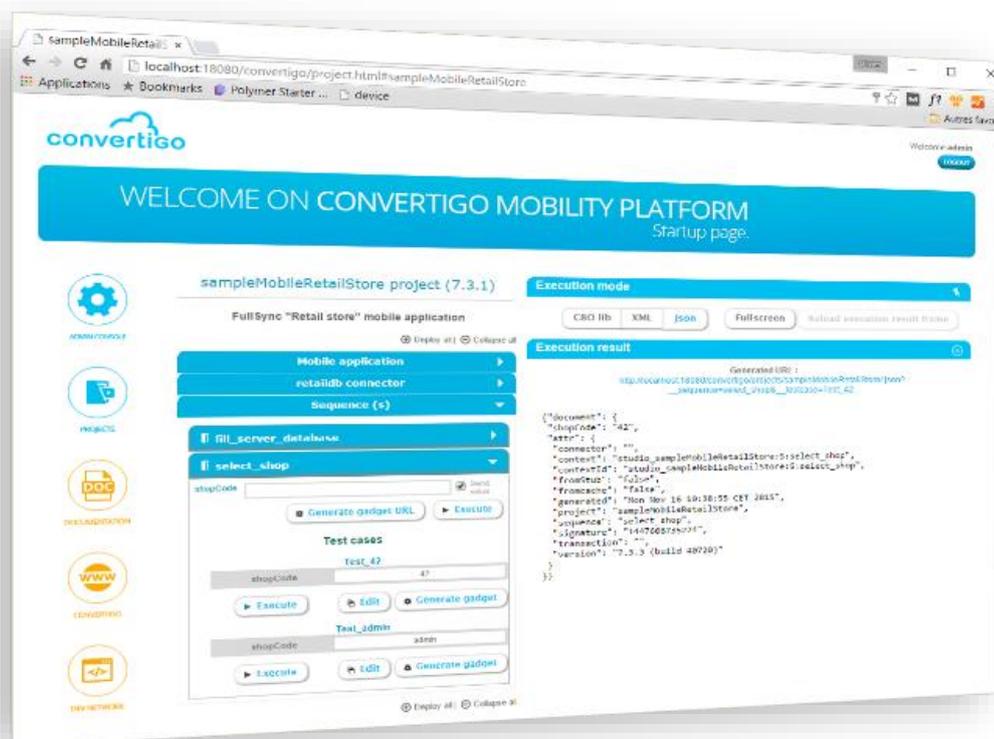
Once the services are developed they can be deployed on Q&A or Production servers in a simple click. All the service definitions will be packaged as a .CAR file and deployed on the server.

Mobile developers and testers will be able to access the services through the Convertigo test platform portal.

This portal enables users to browse the different projects and services, read documentation about them, and test a service using the built-in Convertigo test cases. The portal will show a service result in JSON or XML format.

A mobile service can be published in 3 modes:

- **Private** will make this service only available to other services running on the MBaaS. Mobile applications will not be able to call this service.
- **Hidden** will make this available to the mobile apps but not visible in the test platform portal.
- **Public** will make the service available for mobile apps and visible in the test platform portal.



Connecting to backend data

Although mobile applications can use newly created databases, in most cases, Enterprises already has some data in existing databases or backend applications. The goal of a platform is to be able to access data via the standard protocols so that mobile users can work on it, display it and modifying it.

One gold rule in system architecture is that data should never be modified directly on databases but always through the service layer (when they are available) executing business rules.

Convertigo Mobility platform can create backends or connect to any existing Enterprise backend through its large set of connectors. Most of these connectors will access the services layer of backend applications but the platform can also access data layers directly if needed.

Service layer connectors are:

- **SOAP 1.1/1.2 connector** to connect to any existing SOAP web service provided by an ESB or any other Web Service provider. Convertigo SOAP supports WSDL import and will generate automatically in the Studio all the transactions and schemas for a given web service. Convertigo SOAP connector also supports MTOM attachments to exchange data with ECMs.
- **REST jSON/XML connector** to connect and exchange data with any REST web service in jSON or XML format. Convertigo REST connectors supports OAuth authentication and can import a REST web service definition in YAML format to generate automatically in the Studio all the transactions and schemas for a given web service.

- **SAP BAPI connector** will allow Convertigo to exchange data directly with any SAP NetWeaver system including SAP ERPs (ECC 6.x). Convertigo features a BAPI browser able to search in a SAP system the needed BAPIs and to import them in one click in Convertigo Studio. When imported, it will create automatically SAP transactions with all the needed schema data models.

Data layer connectors are:

- **SQL data sources** to connect to any SQL based database. Convertigo supports any database as long as they provide a JDBC driver. By default the platform is shipped with MariaDB (MySQL), DB2, DB2/400, and SQL server drivers, but any other JDBC driver can be also configured.

Data access can be done directly through JDBC or by using the application server's JNDI data sources. Of course, Convertigo may access SQL stored procedures to execute business logic in the databases.

- **NoSQL databases connector** can be used to read and write data from these BigData document oriented databases. Convertigo supports Apache CouchDB NoSQL databases.
- **Plain Files** can be also used as data sources. Convertigo supports CSV, XML and Excel files.
- **RSS/ATOM/OData feeds** can also be accessed through Convertigo HTTP connector.

Legacy Connectors

This is the real world! Enterprises are still using legacy systems to run some precious business applications. Even if system architects plan to get rid of them, these applications are still in the landscape and have to take part to of the digital Enterprise.

Rewriting these applications in modern languages to have them exchange data in today's standard protocols would be overpriced.

Convertigo Mobility Platform addresses this need by providing two exclusive connectors:

- **Javelin connector** enables the platform to connect to any legacy IBM AS/400, iSeries system and exchange data using the TN5250 protocols through the application's user interface. This way, all the data read or modified in the legacy app is done through the app's existing business logic preserving data integrity and business rules.

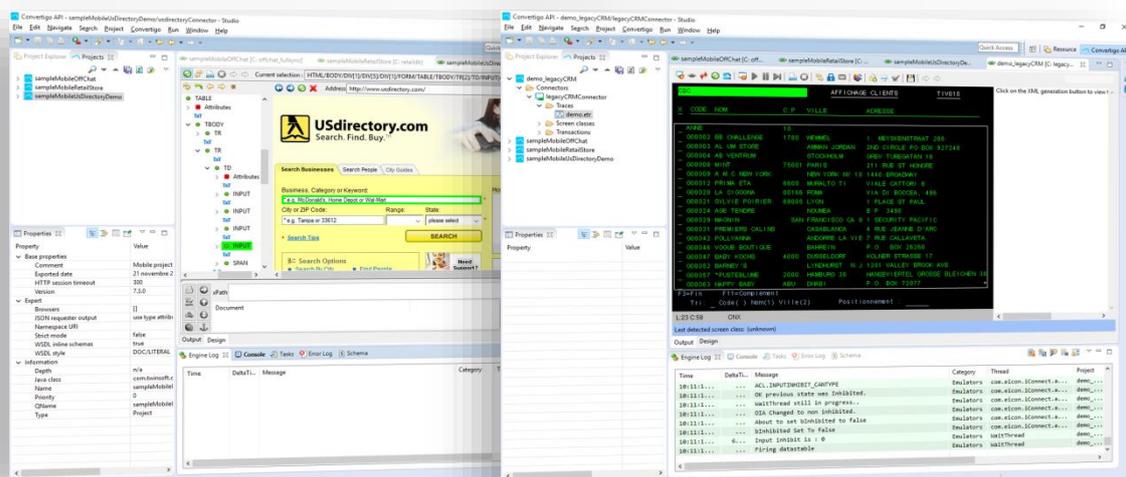
Javelin connector also supports in the same way IBM z/OS Mainframe systems accessing apps using the TN3270E protocols.

- **Web HTML connector** is able to connect to any existing web based application and to exchange data through its WEB UI. The platform uses a powerful parsing engine based on Mozilla's XUL technology to parse and execute web pages code to generate a normalized DOM (Document Object Model). This way, extracting data from the page is easy using the built-in out of the box extraction rules.

The connector is also able to interact with the web UI by clicking on buttons, filling text fields and submitting forms to push data back to the target web application.

These two connectors are completely integrated in Convertigo Studio and can be programmed by using a visual point and click interface.

This way, the platform can "mobilize" any existing Legacy or Web UI application seamlessly without changing one line of code!



Mobile Security

As by definition, mobility implies that some enterprise data will be brought out of the Enterprises; an Enterprise Mobility Platform must have security capabilities to secure data and processes.

These capabilities are:

- **User authentication** to be sure to know who is the user accessing the enterprise data.
- **Access control** to control what part of the data should be seen for this particular mobile user.
- **Protocol encryption** to prevent network spies to read data coming or going to the mobile devices
- **Mobile device data encryption** to prevent attackers to read data on devices if they are lost or stolen.

Convertigo Mobility Platform brings to developers out of the box components to handle these capabilities:

- **User authentication** is supported by using a local user database or LDAP as most Enterprises will prefer to use their own identity servers such as Active Directory or any LDAP based server. Convertigo can also use federated identity frameworks providing SSO services such as SAML or OAuth.
- **Access control** is done by creating a security context before any other mobile service can be used. This security context will be established with a "login" service checking the mobile user identity and deciding if or not he is entitled to open the security context.

- **Protocol encryption** is based on TLS 1.2 encryption and supports client and server certificates.
- **Identity manager** to handle for one unique mobile identity several different credentials to access back end system.
- **Mobile SDKs** provides to mobile developers all the necessary toolbox to encrypt and decrypt data from local databases.



Design and build Mobile UIs

An Enterprise mobile platform needs to include tools to design and build mobile user interfaces (UI). There are several technologies available today to build such mobile UI applications:

- **Native apps** are coded using the native language to a platform. For example, Objective C or Swift for iOS, Java for Android and C# for Windows Mobile.
- **Hybrid apps** are using HTML5 technology to provide user interfaces mixed with some platform native code providing access to specific mobile capabilities such as GPS, Sensors, Camera, Phonebook or network.
- **Cross-compilers** apps are using a specific language such as C# or Java to be cross compiled and able to run on other platforms.

Convertigo Mobility platform support all these technologies providing an outstanding openness for building mobile UI apps.

Comparing different mobile UI development technologies and Integration with Convertigo Mobility Platform

	Cross-platform. One code, several targets (iOS, Android, Windows Mobile)		Proprietary. One code by target		
Technology	Hybrid (HTML5) jQuery Mobile, Angular2/Ionic2	Microsoft Xamarin	Xcode (iOS)	Android Studio (Android)	Visual Studio (Windows mobile)
ROI/target	B2E ++++++++ B2B ++++++ B2C +++	B2E ++++++ B2B ++++++ B2C ++++++	B2E + B2B ++++ B2C ++++++		
Convertigo Platform	Convertigo MADP	Convertigo SDK			
	Convertigo mBaaS Server				

Convertigo has in its built-in MADP (Mobile Application Development Platform) a complete Hybrid engine based on Apache Cordova supporting iOS, Android and Windows Universal Apps (Windows Phone 8.1, Windows Mobile 10 and Windows 10):

- **Mobile UIs** built with Convertigo Hybrid engine can leverage the complete Cordova plugin library and be integrated with the latest UI frameworks such as AngularJS or Polymer.
 - **Convertigo Hybrid engine** also comes with an out of the box UI framework extending jQuery Mobile with a strong data binding framework called CTF (Convertigo Templating Framework). CTF is much simpler to use than other frameworks, providing a fast learning curve to developers.
 - **Flash Update** makes it possible to update applications on devices without having to rebuild them and to deploy them. Each time an app is started on the device its version is compared to the server version and a differential update occurs if needed.
 - **Convertigo Studio IDE** will help the CTF programmers by providing automatic completion for accessing mobile services
 - **Convertigo Hybrid Engine** supports cloud build (building UI apps remotely on the cloud) or local build (Building with locally installed Cordova SDKs).
- **Convertigo Hybrid apps** can benefit from all the backend services provided by Convertigo MBaaS including all the offline data capabilities.

Convertigo also supports **Native** apps by providing a Client SDK. This SDK is available for iOS, Android and .NET. Convertigo Client SDK is also available for **Xamarin cross compiler** technologies. Convertigo Client SDK provides these capabilities:

- **iOS, Android and Windows Phone** native mobile apps can use Objective C or Swift programming language(iOS), Java (Android) and C# for Windows Phone to call data services from Convertigo MBaaS. They will benefit from all the back end mobile services including offline data.
- **Classic Windows WPF .NET** desktop applications are supported using C# or any other .NET language. They will benefit from all the MBaaS services including offline data.
- **Xamarin apps** can use C# to call data services. They will also benefit from all the backend services including offline data.
- **Convertigo SDK** is fully integrated in VisualStudio as NuGET components, in Xcode as a Framework and in Android Studio as a Binary Library Project (AAR).



Angular2 / Ionic 2 Support

Although Convertigo provides its own templating framework based on jQuery Mobile called CTF (Convertigo Templating Framework), the platform also supports the industry standard Angular 2 with the Ionic 2 mobile framework.

This enables developers to use the full power of [Angular 2](#) and the beautiful [Ionic 2](#) mobile framework to write the mobile apps hybrid front ends connected to Convertigo server back-end services.

Cherry on the cake, you can choose to develop the Angular/Ionic part in the same Convertigo Studio than the whole back-end part! Convertigo Studio will automatically handle the build process and will add the Flash Update feature to your hybrid apps.

If you prefer, you can use your favorite Angular2 IDE such as [Webstorm](#) and still use Convertigo back-end service and build capabilities.

Convertigo Back-end services are provided as a standard [Typescript](#) Angular 2 service provider you can use in your apps with a very simple API. The same API can be used to call Back-end services ([Sequences](#)) or to deal with local offline data and synchronize this data with the server using the [FullSync](#) technology;



Offline data capabilities

One of the greatest challenges for mobile apps is that they must be able to work with data even if there is no network. We call this offline data.

Mobility platforms provide mechanisms to provide out of the box offline data capabilities to applications developed with the platform. This way any mobile app will inherit these capabilities without requiring a strong development effort.

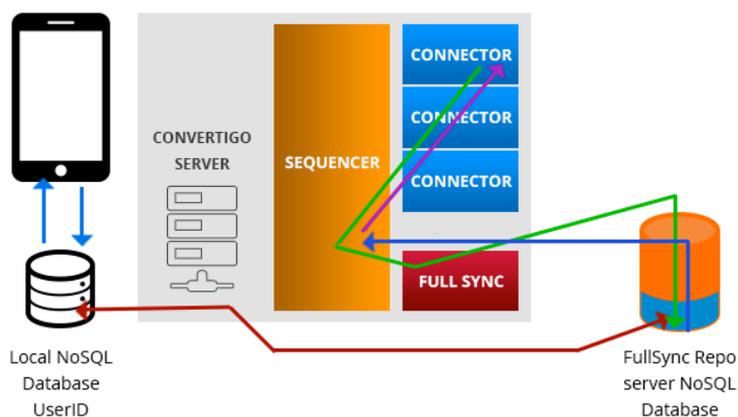
Convertigo Mobility Platform provides powerful offline capabilities with two features:

- **Local cache** is automatically caching server data in a local mobile database. The programmer can define the time to live and the cache policy (Server first or Local database first)

- **FullSync** provides a complete synchronization process between data on the mobile device and data in the back end services. FullSync enables scenarios where the mobile user can read and write business data even when the network is not available. As soon as the network is brought back the data sync process will occur and the local modified data will be updated on the backend side seamlessly.

FullSync technology is based on NoSQL databases on the mobile client side and on the server side. The databases can sync differentially by transferring only changed data since a previous sync.

They can also have a continuous sync mode so that data is synced in real time as long as the network is available.



1. **Sequence** pulls data out from the back end from a back-end connector, and pushes it to a Full Sync database tagged with a target UserID
2. **Data gets replicated** to the mobile devices only for this UserID
3. **User Interacts locally** with the mobile NoSQL database
4. **Any modifications are replicated back** to the Full Sync database
5. **Data modifications in Full Sync database triggers** update sequences to the backend

Large file transfer for offline mode

In many mobile processes occurring for example in manufacturing, Enterprises are facing usage of large files on their mobile devices. These files can be documents such as PDFs or even some media files such as MPEG videos.

In an Offline mode, users still want to use these files and of course streaming will not be possible. This is why these files must be transferred on the mobile devices easily so that they can be used offline.

Convertigo Mobility Platform addresses this need by providing a powerful file Transfer mechanism based on [FullSync](#) technology.

Basically, Convertigo can get a file from any ECM (Enterprise Control Manager) and transfer it to one or several mobile devices. The transfer is done in chunks so that if a file is not transferred totally when the network breaks, only non-transferred contents will be retransmitted. File transfers are done as background tasks as long as the Mobile Application is running.

Convertigo provides these capabilities out of the box as an SDK API that can be used on Android and iOS devices.

Push notifications

In the mobility space, push notifications are one of the most interesting features brought by mobile platforms such as iOS or Android.

With push notifications, mobile users can receive alerts and data even when the mobile device is in sleep or locked mode. Push notifications can be received even if no mobile applications are running.

In most cases Push notifications are based on Device Tokens, a unique identifier generated by the Push provider and managed by a backend third party server.

They are several types of push notifications:

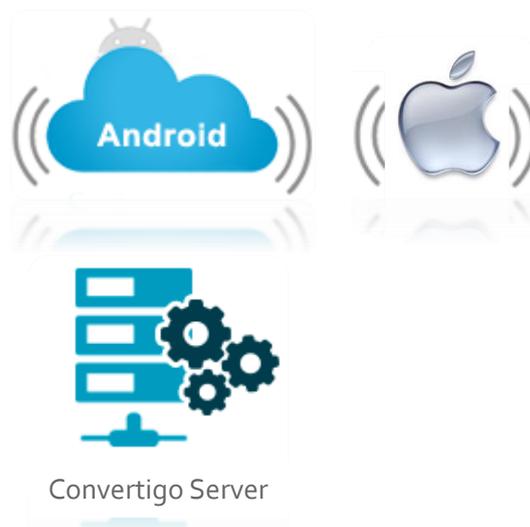
- **APNS** (Apple Push Notification Services) is a service of Apple Computer to push data to iOS devices.
- **GCM** (Google Cloud Messaging) is a service from Google to push data to multiple devices including Android Devices.
- **Some proprietary in-app** push services to push directly some data within an app.



Convertigo MBaaS provides all the necessary components to handle **APNS** and **GCM** push notifications:

- **Full Hybrid** support for iOS and Android with a Cordova plugin to enable Mobile UI apps to receive APNS or GCM push notifications
- **Server Side Device token registry** to manage APNS and GCM device tokens.
- **An "agnostic" Push notification Step** that can be used in any sequence to push data to mobile devices whatever the mobile platform they are running on (iOS, Android).

Globally, Convertigo MBaaS provides out of the box push notification mechanisms to help developers to setup push notifications in their apps reducing development time and maintenance costs.



Deploying mobile applications

Having mobile applications developed is fine, but how can Enterprises deploy them to users?

They may be several categories of users described here:

- **B2C** users are the company consumer users, for example people using a mobile m-Commerce application or mobile travel application. These users will use the application from a public app store such as Apple's App Store, Google Play or Microsoft Windows Store on their own devices.
- **B2B** users are the company partners. For example insurance brokers or car dealers. This population will use the company apps on their own devices or on devices controlled by the company. They will install them from a public store as seen above or from the company private store.
- **B2E** users are the company employees. They can be blue collars such as warehouse managers or white collars such as any employee using an Enterprise HR mobile application. B2E users can use the company mobile apps on their own devices (**BYOD**) or use them on some special heavy duty device. In most cases, apps will be installed from private stores.
- **Testing panel** users are using the apps in development phase before they are officially published to a store.

Convertigo Mobility Platform addresses these needs in several ways:

- **Public Store** compatibility enables all applications developed with the platform to be deployed on such app stores. Hybrid Cloud builds and local builds supports App signing for distribution or AdHoc deployments. The same with native builds.
- **Private Store** compatibility enables all Application developed to be deployed to most of the existing third party private stores and **MDMs** (Mobile Device Management).
- **Convertigo Store**. The Mobility platform provides its own private store for Hybrid Applications. This store targets B2E and B2B users and specially testing panel users.



Continuous Integration

Modern software development should be based on agile methods and continuous integration (CI). CI makes it possible to develop software and having tests executed in continuous mode each time a developer commits code in the source repository. This is often called TDD (Test Driven Development)

An Enterprise mobile platform should provide CI capabilities and be integrated with SCM (Source Control Management).

Convertigo Mobility Platform is designed to be integrated in such environments by providing the following capabilities:

- **SCM integration** with most of standard SCM systems such as GIT, SVN, TVS and many others. SCM integration is done through Eclipse Studio plugins. By default Convertigo Studio is shipped with a pre-installed SVN plugin but any other SCM plugins can be installed.

Convertigo projects are based on standard XML files and other text based resources so they can be easily committed to SCM repositories. There are no binary files required for Convertigo projects.

- **Test cases** provide for each mobile service a set of request input variables so that a service can be executed in a particular test case. Test cases are very useful for developers as they can easily test their Sequences. Test cases are also very useful for continuous integration as seen further on.

- **Jenkins CI** integration enables Convertigo projects to be completely integrated in continuous integration processes. A Convertigo Jenkins plugin is available to build, deploy and test Convertigo mobile services. As soon as a mobile developer commits a file in the SCM, the project will be built and deployed on a Convertigo integration server. Then a list of **Test cases** will be executed and their results will be compiled in the Jenkins CI console.



Jenkins



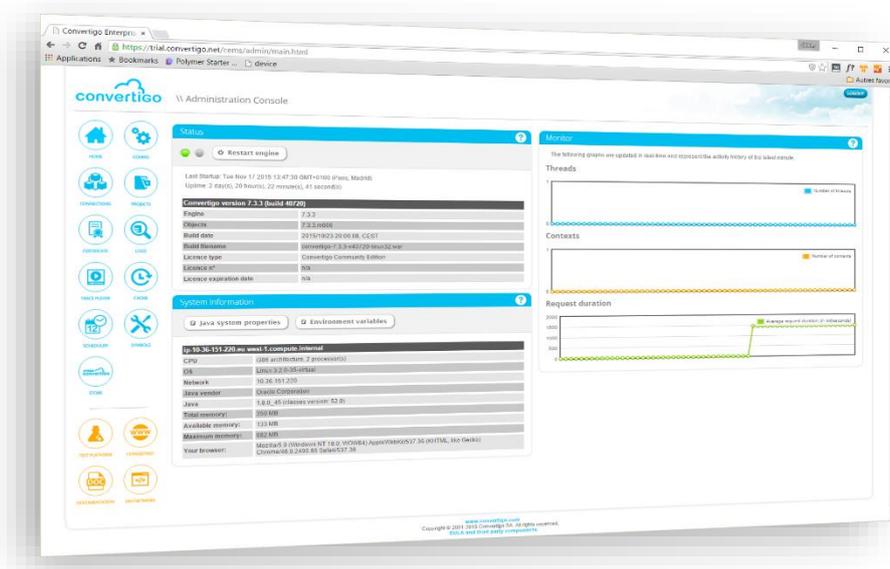
Configuration and monitoring

An Enterprise platform is not just a framework. Platforms must have configuration consoles, monitoring tools, log management and can be integrated in Enterprise's management systems.

This is why Convertigo Mobility Platform comes with a complete set of administration tools and interfaces to provide the best manageability to system operators.

Convertigo console is a web based application providing these capabilities:

- **Server activity monitoring** will show in real time the number of contexts open, the number of simultaneous requests passing through the MBaaS server, and the average request duration. This gives in one glance a complete overview of a server's health.
- **Configuration parameters** will help the system operator to configure different platform's components such as logs, Proxys, Cache and many others. Most of these configuration parameters are taken in account in real time.
- **Log manager** will enable developers or system operators to browse logs, archive them, and even see these logs in real time mode. The log manager also has strong filtering capabilities enabling to filter out the traffic for a particular device for example.
- **Certificate manager** will enable sysops to manage all the SSL certificates used in Web Services and connectors. The Convertigo MBaaS server supports client and server certificates.
- **Convertigo Scheduler** is a built in scheduler able to trigger any Sequence at a given time. This component provides a key capability for most of mobile processes, especially for loading FullSync database from backend Data.
- **Symbols Management** is a very useful capability able to define symbols used by projects for specific environment configurations such as Q&A, Pre-Prod or Production. This way, the project can be developed with agnostic symbols, taking their real values when deployed on the target environments.



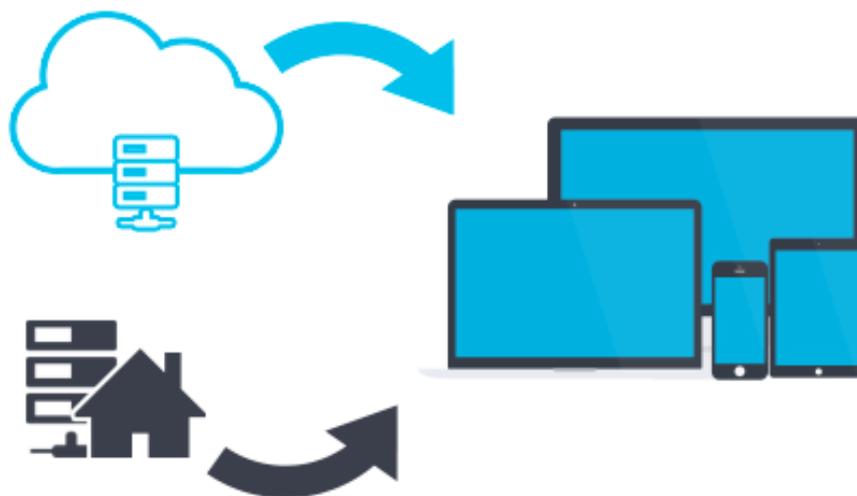
Cloud or on premises

When it comes to server installation, Enterprises have the choice of using their own infrastructure "On premises" or using cloud service to run a platform.

Convertigo Mobility Platform can be used in 3 different configurations:

- **On premises**, the platform is installed on a virtualized or physical server farm running Linux or Windows. The Enterprise is responsible for setting up the Firewalls, DMZ and load balancers leading Mobile traffic to Convertigo servers. Usually this is done by using Apache reverse proxys, but this can be done with any other technology including appliances.
- **Convertigo for Azure** is a preconfigured Convertigo MBaaS server ready to use on the Microsoft Azure Market Place for enterprises. This makes possible to use a "Microsoft Centric" stack composed of Xamarin for front end, and Convertigo running on Azure for backend.
- **Convertigo for AWS** is a preconfigured Convertigo MBaaS server ready to use on the Amazon Market Place for enterprises. This one click turnkey Amazon instance can be also integrated in the Enterprise Private network using Amazon's VPC and VPN capabilities.

Convertigo Servers are Java based and run on most Java application servers such as Tomcat, jBoss, WebSphere or WebLogic.



IoT Integration

Internet of Things (IoT) is the next challenge Enterprises will face, connecting billions of devices by 2020. These devices take part in the Enterprise ecosystem by interacting with existing systems and applications already deployed in the companies.

Tracking objects, detecting smoke, monitor machines, signaling empty parking slots are some obvious uses cases where IoT technology can help. In all these cases, some data from these sensors must be integrated in central back end systems.

IoT world is divided in several fields;

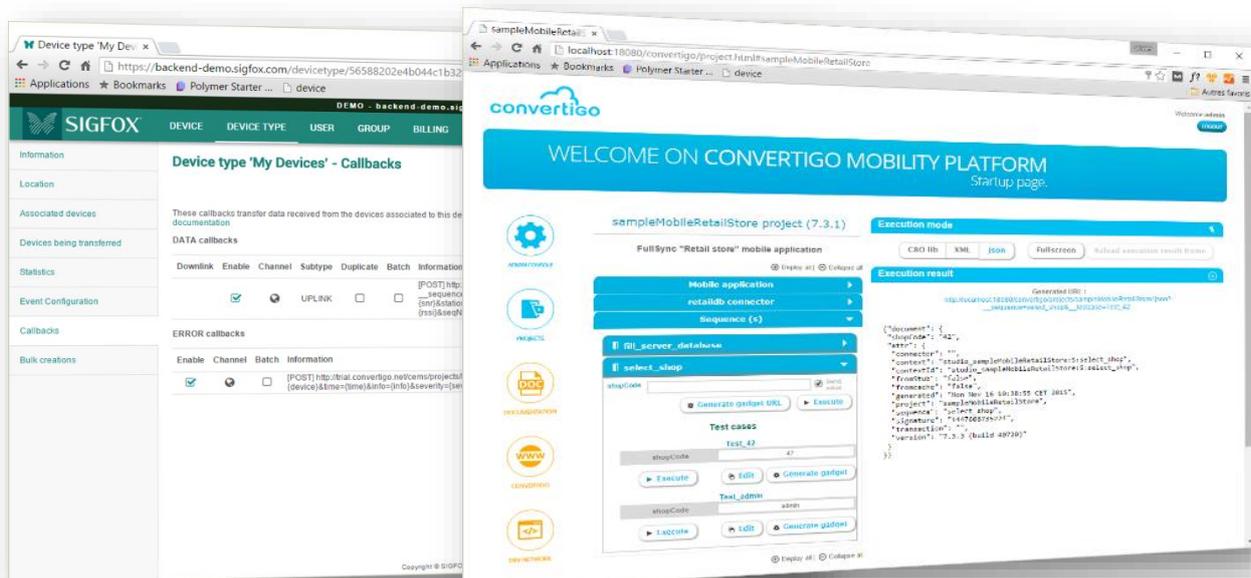
- **IoT devices vendors** providing numerous devices able to exchange data with network operators.
- **IoT network operators** deploying radio networks over the planet able to handle IoT Devices traffic
- **Platform vendors** providing software to connect IoT network with existing backend systems or data repositories.

Convertigo Mobility Platform is able to handle data coming for IoT devices through an IoT network operator. This way, all the backend services from Convertigo such as connectors, the sequencer and security management can be used to push and pull data from backend repositories and applications.

For example, while monitoring fuel levels in gas stations, if the level goes to low, this would automatically trigger an update in the CRM managing this particular gas station.

Convertigo Mobility Platform is fully integrated with the Sigfox™ network as a P3 platform.

The platform can be connected to Sigfox™ network using Sigfox's call back API. This way any IoT device triggering an event will be captured by the platform and will be processed by sequences to orchestrate actions to be done in the backend systems.



The image displays two screenshots of the Convertigo Mobility Platform interface. The left screenshot shows the 'SIGFOX' management console with a 'Device type 'My Devices' - Callbacks' configuration page. The right screenshot shows the 'convertigo' 'WELCOME ON CONVERTIGO MOBILITY PLATFORM' startup page for a 'sampleMobileRetailStore' project, displaying a sequence editor and test cases.

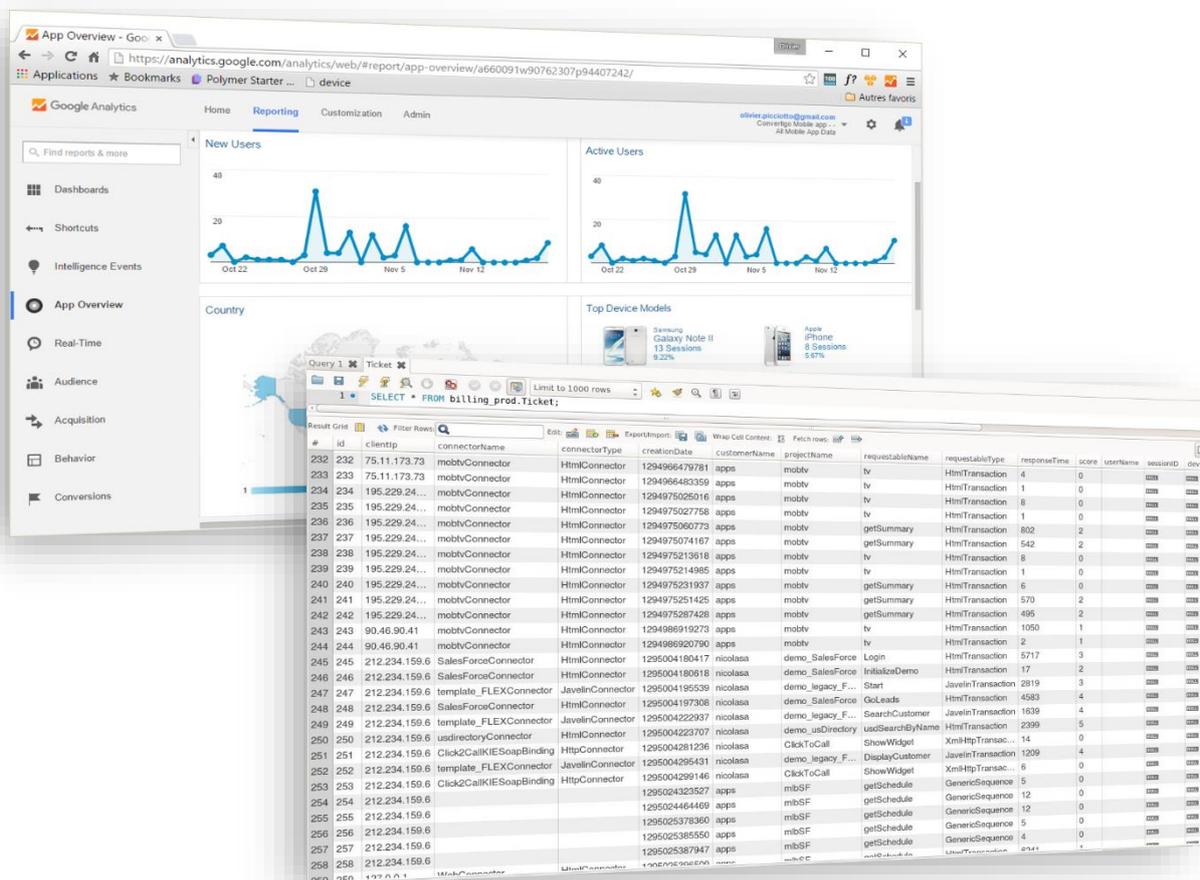
Analytics

As the platform is the only entry point for all mobile applications, its obvious analytics could be handled by it automatically.

Analytics can help lines of business to understand how applications are used. Analytics can also help Enterprise central IT departments to allocate operating costs among several business units.

Convertigo Mobility Platform supports two analytics systems. The both systems can be configured to work at the same time:

- **Google Analytics (GA)** is supported by having (if configured) the platform reporting to GA automatically any executed Sequence (Mobile Service) or Transaction (Call to a backend server) as an Analytics Event. This will have GA be able to display all these events in the Graphical Analytics console.
- **Analytics databases** can be (if configured) any type of SQL database (MySQL, PostgreSQL, SQL Server, Oracle, IBM DB2..) receiving for each Sequence or Transaction execution a new line in the "Ticket" table.



Product line

Convertigo addresses companies from small individual developers to very large Enterprises, with a ramp up product line.

The "Indie" developers or Universities will love the unsupported free **Community Edition** able to build Mobile apps and deploy them on our free trial cloud.

Larger startups or small companies will benefit from our **Convertigo for Amazon Market Place** or **Convertigo for Azure Market Place**, offering unbeatable price / capabilities for Enterprise mobile apps.

Large corporations will use Convertigo **Standard Edition or Extended Edition** installed on premises providing them an outstanding Enterprise grade mobility platform.

Community Edition	Standard Edition	Extended Edition
Server side Business logic Cross-platform Hybrid Flash Update	Server side Business logic Cross-platform Hybrid Flash Update	Server side Business logic Cross-platform Hybrid Flash Update
Standard security	Enhanced security	Enhanced security
Standard Connectors	Standard Connectors	Standard Connectors Extended Connectors SAP, HTML, Mainframe
Community Support	Enterprise Support	Enterprise Support
	Native Client SDKs Load balanced scalable Local Cache	Native Client SDKs Load balanced scalable Local Cache FullSync offline data
		Available on convertigo for aws
		Available on Microsoft Azure

Conclusion

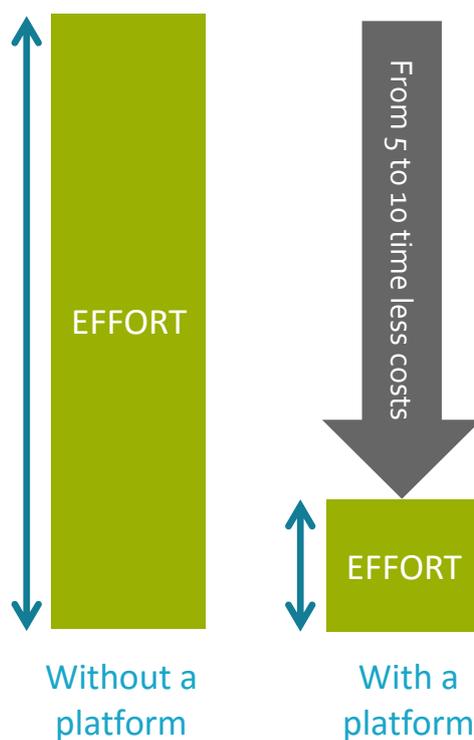
Mobile platforms are key components of the Digital Enterprise as most of the companies have designed their information system for the Web and not for Mobile Devices. Mobile platforms enable companies to gain in agility, to reduce development and maintenance costs, to preserve system integrity and to gain in security.

With the new requirements of the digital world, Enterprises will be facing numerous Mobile applications developments and will widen the gap between the needs and their development and integrations capabilities.

Convertigo offers with its Mobility platform all the required components to make Enterprises access the Digital world for their customers, their employees and their partners with controlled costs and project timings.

Using Convertigo Mobility Platform will avoid having the same services to be redeveloped each time Enterprises need a new mobile application, thus reducing development costs and technical debt.

Convertigo Open Source technology provides Enterprises flexibility, openness, auditability, security and avoids vendor locking for a reasonable cost compared to "Do It Yourself" solutions.



About Convertigo

Convertigo is a privately held company recognized as a “pure player” in the enterprise Mobility market and the first software vendor to distribute its cloud based or on premise Mobile Application Development Platform (MADP) and MBaaS as Open Source.

Convertigo is delivering a secured and scalable disruptive all-in-one solution integrating rapid cross platform mobile development tools and a powerful MBaaS covering challenging backend enablement, featuring a middleware optimized for mobility.

With more than 100.000 installations of its community edition, Convertigo technologies have a proven track record with secured and scalable implementations deployed in global fortune 500 companies in EMEA and North America.

For more information, visit:
<http://www.convertigo.com>

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