

# Camel 2.1.0 Release

## Camel 2.1.0 release

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### New and Noteworthy

Welcome to the 2.1.0 release which approx 303 issues resolved (new features, improvements and bug fixes such as...)

- Pluggable API for Management allowing 3rd party to manage Camel.
  - Use `org.apache.camel.spi.ManagementStrategy` to plugin 3rd party adapter
  - Fine grained events notifications is now being emitted using `org.apache.camel.spi.EventNotifier`
  - Events being fired can be created using a pluggable factory using `org.apache.camel.spi.EventFactory`
  - Camel now supports using multiple `org.apache.camel.spi.LifecycleStrategy` strategies, that also allows 3rd party to more easily integrate into Camel.
- Overhaul of default [JMX management](#) in Camel to be much improved with more attributes, mbeans, operations, statistics, and route timing working as well.
  - And yes you can now start/stop routes and individual consumers and producers
  - And some special processors such as [Delayer](#) and [Throttler](#) can be managed to change their delay/throttle values
  - You can dynamic manage [tracing](#) even for already running applications
  - [Error handling in Camel](#) is now also manageable so you for example can change the redelivery policies.
  - [JMS](#) consumers being restarted will pickup any configuration changes on JMS endpoints such as changing `concurrentConsumers`. And yes its fully managed using JMX.
  - Number of inflight exchanges per consumer, route and totally per camel context.
  - And much more...
- Improved [IRC](#), [XMPP](#), [MINA](#), [CXF](#) and [FreeMarker](#) components with much thanks to the Camel community
- Added `ClassLoader` set and `get` method in the `CamelContext` to make Camel work better in the Container.
- Introduced camel-spring-osgi bundle which is merged from camel-spring and camel-osgi bundle to avoid the issue of installing upper bundles in a wrong order.
- Now Camel Karaf features are validated with the Karaf plugin.
- [camel-cxf](#) beans component supports JAXWS beans.
- camel-cxf MTOM attachment supports in Payload mode.
- Fixed the Null message will cause camel converter stop working issue.
- camel-cxf endpoint no longer requires the "serviceClass" option or Service Endpoint Interface (SEI) in Payload mode. It means only WSDL is needed but the intended port and service name in the WSDL must be provided for the camel-cxf endpoint.
- [Velocity](#) component supports to take the Velocity configuration by using `propertiesFile` option.
- [Splitter](#) and [Multicast](#) EIP patterns now support the option `stopOnException` to stop continue processing at first exception occurred. See their documentation for more details.
- [Error handlers](#) is restricted to be configured on camel context and/or routes only.
- Camel is now more robust and fault tolerant when shutting down.
- Fixed a race condition when shutting down Camel with [JMS](#) consumers that under some circumstances caused it to appear to hang
- Added pluggable `org.apache.camel.spi.InflightRepository` with a basic implementation that can help with graceful shutdown as you can now see how many exchanges are currently in progress.
- [JmsEndpoint](#) is now singleton
- Individual routes can be [pre configured to not auto startup](#) when Camel starts: `autoStartup=false` in XML DSL and `noAutoStartup()` in Java DSL.
- Camel is more robust on startup as route inputs are deferred to be started at the very end, ensuring all routes services have been pre started and thus ready when consumers is started.
- Improved unit test coverage, now having more than 4200 unit tests in total.
- Fixed `ConsumerTemplate` not working when it was dependency injected with `@EndpointInjected` in a [Bean](#).
- Using IBM special JMS headers now work when sending messages to IBM WebSphere MQ. IBM special headers uses this prefix: `JMS_IBM_`. In fact it works with any `JMS_<vendor>_` header.
- The [ordering of which routes should be started](#) can now be configured by the `startupOrder` attribute which defines a number. Lowest number is started first.
- And `autoStartup` is also supported on [CamelContext](#) itself where it replaces the `shouldStartContext` option, which have been removed.
- Camel now checks on startup if multiple routes uses the **same** endpoint as inputs, if so it fails to start. This prevents starting Camel if you have routes with e.g. copy/paste typos. Only [JMS](#) and [MINA](#) support multiple routes to consume from **same** endpoint. The `MultipleConsumersSupport` interface can be optionally implemented by the endpoint to control this behavior.

- The [File](#) component handles renaming and deleting files on Windows better as Windows could block files. Also Antivirus software could causes files to be blocked.
- Fixed issues using `tempPrefix` option with the [File](#) in case of clashes with existing files. The same goes for the `localWorkDirectory` option on the [FTP](#) component which could have a similar issue.
- Optimized [XPath](#) to allow thread safe concurrency which greatly reduces contention.
- Camel works better with Google App Engine
- The [Bean](#) component is better at choosing the best method. If given a method name it will only pick among methods with such a name.
- The [Bean](#) component is now also more strict as it **must** be able to convert to all the parameter types. Was to lenient before by passing in `null` instead, when conversion was not successful.
- The [Bean](#) component now works with Spring `@Transactional` annotations where it uses CGLIB enhanced classes.
- Fixed an issue with setting global error handling in Spring XML not always working
- Camel [adds properties](#) to [Exchange](#) when sending to endpoints. This is useable with [Dead Letter Channel](#) where we can use this to know which [Endpoint](#) failed.
- Improved file operations on Windows platform to retry in case of issues.
- Fixed issue with `replyTo` option on [JMS](#) consumers which wasn't working.
- Fixed issue with using `<camel:proxy>` not working
- Improved `<camel:proxy>` so its easier to work with out of the box. It leverages Camels type converter mechanism to adapt to the interface. Also proxied methods with a single parameter turns that parameter value into the message body.
- Added document for using [Camel proxy](#).
- Improved `enrich` and `pollEnrich` with reference lookup of endpoints and aggregation strategy.
- Added `markRollbackOnly` attribute on `<rollback>` to only mark the [Exchange](#) for rollback. This allows you to set a custom reply message. Previously a `RollbackExchangeException` was always set which causes Camel to thrown an exception to the client. This also works with `transacted` routes as well.
- Camel now logs on shutdown whether there was in flight exchanges or not. All together we are getting closer to having graceful shutdown supported in Camel.
- `@Bean` is now easier to use at you define `ref` and `method` instead of one combined value.
- Introduced `routeId` in the Java DSL to set the id of the route. Prefer to use this over `id`.
- Introduced [RoutePolicy](#) allowing to automatic and dynamically controlling routes at runtime.
- Supplied [ThrottlingRoutePolicy](#) out of the box for dynamic throttling route consumers using metrics based on the current number of inflight exchanges.
- [Data Format](#) is now resolved just as [Components](#) and [Languages](#) by looking for magic file under `META-INF/services/org/apache/camel/dataformat/`.
- The [HTTP](#) component now also supports using NTLM authentication
- [Exception Clause](#) improved to better select the best `onException` to use. Now a direct match will **always** be used in case one existed anywhere in the caused exception hierarchy. This avoid Camel eagerly selecting a too generic such as `onException(Exception.class)` when a direct match existed.
- [FTP](#) can now have its `FTPClient` and `FTPClientConfig` configured using URI parameters. Can for example be used to set a timeout on the `FTPClient`.
- [FTP](#) is now more robust when writing files where it will reconnect the connect in case of problems.
- Added support in camel-core for non blocking [Request Reply](#) using [ToAsync](#).
- [Jetty](#) HTTP producer supports non blocking [Request Reply](#). See more at [ToAsync](#) and the [HTTP Async Example](#).
- `HttpOperationFailedException` now uses pure Java types so it can safely be transported over network without being dependent on 3rd part jars.
- Improvements to [Tracer](#) to let it be more fine grained when used with [Aggregator](#), [Splitter](#) etc. who has sub routes. It now also outputs correct `doTry .. doCatch .. doFinally` and `onException` etc.
- Added `adviceWith(RouteBuilder)` to `RouteDefinition` which allows you to advice any existing route with a route builder where you can define interceptors etc. This is useable for testing so you can write tests based on existing routes and advice them with interceptors so you can detour messages and simulate errors etc.
- [Timer](#) and [Quartz](#) now logs Exchanges that failed with an exception at ERROR level to help identify the problem.
- [Google App Engine supported](#) excellent work by our new committer Martin Krasser.
- Improved [CXF](#) producer in `POJO` mode to use the `POJO` body without having to wrap it in a `java.util.List` which allows for easier usage. See for example the [CXF Async Example](#).
- Added option `testConnectionOnStartup` to [JMS](#) to test connection on startup. The goal is to ensures that when Camel is started all the JMS consumers have a valid connection to the JMS broker. However if a connection cannot be established then Camel throws an exception on startup.
- [Dead Letter Channel](#) is validating its `deadLetterUri` on startup to prevent failing at runtime.
- Failing to create routes is now reported with a more precise error message which pinpoints which route and what part of the route is causing the problem.
- Fixed issue with transacted routes mixed with Camel error handling doing redelivery from the beginning of the route and not only at the failed node in the route path.
- Fixed issue with using [BAM](#) with Hibernate.
- Options to the `java.sql.Statement` can be set from the URI in the [JDBC](#) component. Can be used to set `maxRows` etc.
- Added documentation for [NMR](#) and [Quickfix](#).
- Fixed issues with [Mail](#) and having multiple endpoints defined with different recipients could cause Camel to use the recipients from the last defined endpoint only.
- Improved [Mail](#) to better recover from network failure on subsequent polls
- Improved [Tracer](#) to output route id
- Fixed a potential 2gb file copy limit using NIO when doing from(`"file:xxx"`).XXXX.to(`"file:yyy"`) routing.
- Upgraded and fixed [EL](#) to work with OSGi containers.

## New Enterprise Integration Patterns

- [Sampling](#) A sampling throttler allowing you to extract a sample of exchanges from the traffic through a route.

## New Components

- [camel-printer](#)
- [camel-cache](#)

- [camel-snmp](#)
- [camel-javaspaces](#)
- [camel-gae](#)
- [camel-quickfix](#)

## New DSL

- [sample](#)
- `markRollbackOnly`
- `routeId`
- [toAsync](#)
- `autoStartup`
- `startupOrder`

## New Annotations

## New [Data Formats](#)

- Camel-bindy [Bindy](#) includes important new features like :
  - Required (`@DataField`) to check mandatory field
  - Position (`@DataField` and `@KeyValuePairField`) when the CSV/FIX message to be generate contain fields which are placed at a different position then those used to parse it
  - Section which allow to define the class containing by example the header, body or footer section
  - OneToMany which allow to Read a FIX message containing repetitive groups (= group of tags/keys) and Generate a CSV with repetitive data

## New [Languages](#)

## New [Examples](#)

- [camel-example-management](#)
- [camel-example-route-throttling](#)
- [camel-example-http-async](#)
- [camel-example-cxf-async](#)

## API breaking

## DSL changes

In the Java DSL the `.errorHandler` is now restricted to be configured on camel context and/or routes only. That means for configuring on routes you have to set it directly after the `.from` DSL.

In Spring DSL the `errorHandlerRef` attribute is now only visible on the `<camelContext>` and `<route>` XML tags.

## New `.jar` dependencies

camel-core now depends on commons-management.jar to facilitate the new overhauled management.  
This project is hosted at [FuseForge](#)

This `.jar` can be retrieved from the maven central repo at: <http://repo1.maven.org/maven2/org/fusesource/commonman/commons-management/1.0/>  
The maven dependency details are:

```
<groupId>org.fusesource.commonman</groupId>
<artifactId>commons-management</artifactId>
<version>1.0</version>
```

## DataFormat resolution

Data formats is now resolved just as components and languages etc. making it consistent. If you have your own custom data formats you need to create the magic file under `META-INF/services/org/apache/camel/dataformat` which is a file with the data format name. See for example `camel-jackson` for an example how to do that.

## camel-http

`HttpOperationFailedException` has been changed.

## Core API

## CamelContext

CamelContext have renamed the method `getLifecycleStrategy` to `getLifecycleStrategies` and now returns a List.

## Exchange

The exchange id has been changed to use the `java.util.UUID` instead. This allows Camel to run on Google App Engine.

## Management

The API in `org.apache.camel.spi.ManagementNamingStrategy` had its methods renaming and method signature adjusted to accommodate the big theme for Camel which was overhaul of management (JMX).

## SPI

The `TraceableUnitOfWork` has been renamed to `TracedRouteNote` which is accessible from `UnitOfWork`.

## DeadLetterChannel

The `deadLetterUri` uri now only accepts a single endpoint which is prechecked on startup. You cannot any longer using multiple endpoints separated by comma. That was in fact an internal hidden feature because a recipient list was used beforehand to produce to the dead letter queue. Adding the precheck removed the recipient list. You can use [Direct](#) and route to a route which can then use a recipient list in case you really need this.

## Client API

### Removed classes

- `org.apache.camel.processor.CompositeProcessor` was never used
- `org.apache.camel.impl.ProducerTemplateProcessor` was never used
- `org.apache.camel.impl.NoPolicy` was never used
- `org.apache.camel.spring.handler.LazyLoadingBeanDefinitionParser` was never used
- `org.apache.camel.spring.handler.ScriptDefinitionParser` was never used
- `org.apache.camel.spring.remoting.SendBeforeInterceptor` was never used
- `org.apache.camel.spring.spi.SpringConverters` was never used

### Moved classes

- `org.apache.camel.PollingConsumerPollStrategy` is moved to `org.apache.camel.spi.PollingConsumerPollStrategy`
- `org.apache.camel.impl.scan.PatternBasedPackageScanFilter` is moved to `org.apache.camel.spring.PatternBasedPackageScanFilter` in the **camel-spring** jar.

### Removed methods

- `getSingletonEndpoints` method have been removed from various classes in the `camel-test` component.

### Removed in Spring XML

The option `shouldStartContext` on `<camelContext>` have been removed. Its replaced with `autoStartup` which you can read more about here [Configuring route startup ordering and autostartup](#).

## @Bean

`@Bean` now uses a `ref` attribute to refer to the bean name. Also added a new `method` attribute to set the method to use (optional). You need to upgrade your code to use these attributes as the default `value` have been removed. We assume only a very few people knew and uses this `@Bean` annotation.

## Direct component

The option `allowMultipleConsumers` has been removed as it did not make sense to have concurrent consumers on a direct endpoint.

## Known Issues

[Routing Slip](#) EIP does not break when Exchange is failed, see [CAMEL-2245](#).

Using `<transacted/>` in Spring XML does not work properly when using route scoped `<onException>` and/or `<onCompletion>`. Using context scoped works. And the Java DSL does not have this flaw. See [CAMEL-2336](#).

When using the [Recipient List](#) together with [MINA](#) endpoints Camel will over time hold on to memory which could lead to `OutOfMemoryErrors`. See more at: [CAMEL-2484](#)

See known issues from previous releases.

## Important changes to consider when upgrading

### Getting the Distributions

#### Binary Distributions

Description	Download Link	PGP Signature file of download
Windows Distribution	<a href="#">apache-camel-2.1.0.zip</a>	<a href="#">apache-camel-2.1.0.zip.asc</a>
Unix/Linux/Cygwin Distribution	<a href="#">apache-camel-2.1.0.tar.gz</a>	<a href="#">apache-camel-2.1.0.tar.gz.asc</a>



#### The above URLs use redirection

The above URLs use the Apache Mirror system to redirect you to a suitable mirror for your download. Some users have experienced issues with some versions of browsers (e.g. some Safari browsers). If the download doesn't seem to work for you from the above URL then try using [Mozilla Firefox](#)

#### Source Distributions

Description	Download Link	PGP Signature file of download
Source for Windows	<a href="#">apache-camel-2.1.0-src.zip</a>	<a href="#">apache-camel-2.1.0-src.zip.asc</a>
Source for Unix/Linux/Cygwin	<a href="#">apache-camel-2.1.0-src.tar.gz</a>	<a href="#">apache-camel-2.1.0-src.tar.gz.asc</a>

#### Getting the Binaries using Maven 2

To use this release in your maven project, the proper dependency configuration that you should use in your [Maven POM](#) is:

```
<dependency>
  <groupId>org.apache.camel</groupId>
  <artifactId>camel-core</artifactId>
  <version>2.1.0</version>
</dependency>
```

#### SVN Tag Checkout

```
svn co http://svn.apache.org/repos/asf/camel/tags/camel-2.1.0
```

#### Changelog

For a more detailed view of new features and bug fixes, see:

- [JIRA Release notes for 2.1.0](#)