Look Inside Your OSGi Bundles and Build them Block by Block

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Without OSGi
With OSGi
OSGi

IoT Application

Gateways

- roadside stations
- onboard units
- residential gateways
- ...
IoT Application

Gateways

- autonomous
- remotely managed
- interfaces to “things”
- network connections
GPIO
Main Application Bundle
DB
Runtime
MQTT
Modbus
Events

- life cycle
- other bundles
- config changes
- messages
- network
- handle hardware
Concurrency
ain't one. I got 99 problems but concurrency
```java
public void start(BundleContext b) throws Exception {

    // application goes here
}
```
The logo must be surrounded with adequate clear space to ensure maximum prominence and visual impact. All scaling of the logo is to be proportional. In case the logo needs to appear on a limited background, the minimum size allowed is not less than 15 mm.
public void start(BundleContext b) throws Exception {

TODO show the start() from the bundle method also here?
}
Title - edit manually in the normal master
public void ledOn() {
    logInfo("Switching on LED");
    leds[0].setState(true);
}

public void ledOff() {
    logInfo("Switching off LED");
    leds[0].setState(false);
}
LED Blink

on

off
Joining Data
Buffering
Limiting Data
OSGi and Concurrency

Java Interfaces

✔️ Names
✔️ Types
❌ Sequences
❌ Timing

OSGi Events
Documentation
LED Blink

- on
- ledOn
- active
- ledOff
- off

ESM of LED Blink
This error shows that there is an activity step that terminates the enclosing block MQTT Request, but the step does not respect the interface contract (i.e., ESM) of block c0.

An ESM, depicted as states and transitions, describes the order in which tokens can enter or exit the related block via the block’s pins. Therefore, it expresses how the block can be combined with other blocks without understanding the block’s detailed internal behavior.

Learn more about ESM on our [reference site](#).

This issue is related to an activity step that is
OSGi and Concurrency

Java Interfaces
- ✔ Names
- ✔ Types
- ✗ Sequences
- ✗ Timing

OSGi Events

Building Blocks for OSGi
Configuration
Next Steps:

- bitreactive.com
- IoT Playground
- Tutorials