## Project: vladmihalcea/flexy-pool

We introduce some terms for avoiding confusions.

- Explicit version declaration in Maven: a library version is declared as a hard-coded value in version tag, e.g., <version>2.5</version>.
- **Implicit version declaration in Maven:** a library version is declared as a referenced value in version tag through a declared property, e.g., <version>\${guava.version}</version>.
- **Inconsistent library:** a library whose multiple versions are used in multiple modules of a project; e.g., module A declares guava 2.5 but module B declares guava 2.6.
- False consistent library: a library that is used in multiple modules of a project with the same version declared separately; e.g., module A declares guava 2.5 explicitly and module B declares guava 2.5 explicitly. Therefore, such a consistency is likely to turn into inconsistency when there is an incomplete library update.

### I. Overview

Your project have 1 inconsistent library.

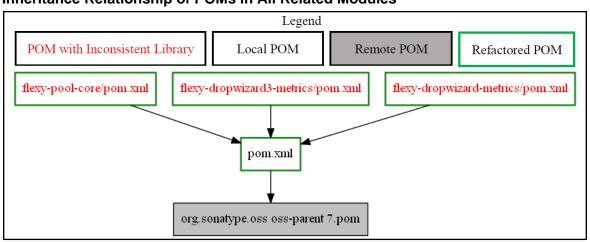
### II. Inconsistent Libraries

## 1. io.dropwizard.metrics:metrics-core

The distinct versions are 4.0.2, 3.2.6.

Index	Module	Туре	Property	Version
1	flexy-dropwizard3-metrics	implicit	dropwizard3.metrics. version	3.2.6
2	flexy-dropwizard-metrics	implicit	dropwizard.metrics.v ersion	4.0.2
3	flexy-pool-core	implicit	dropwizard.metrics.v ersion	4.0.2

## Harmonization Recommendation Inheritance Relationship of POMs in All Related Modules



The pom in red references the property value declared in the pom in green.

## The inconsistent library versions in Modules 1-3 are harmonized into version 4.0.2. Of the 7 deleted APIs, none of them is suggested with a replacement in javadoc.

#### **Harmonization Effort**

Index	Module	NA (NAC)	NDA (NDAC)	NMA (NMAC)
1	flexy-dropwizard3-metrics	16(18)	7(7)	1(1)
2	flexy-dropwizard-metrics	8(10)	0(0)	0(0)
3	flexy-pool-core	5(6)	0(0)	0(0)

NA (Number of APIs): the number of called library APIs in one module.

NAC (Number of API Calls): the number of library API calls in one module.

NDA (Number of Deleted APIs): the number of called library APIs that are deleted in the recommended library version.

NDAC (Number of Deleted API Calls): the number of library API calls that are deleted in the recommended library version.

NMA (Number of Modified APIs): the number of called library APIs whose call graphs (A control flow graph which represents calling relationships between subroutines in the library) are modified in the recommended library version.

 ${\it NMAC (Number of Modified API Calls): the number of library API calls to modified library APIs.}$ 

#### Files related:

Module	File	Туре	API
			com.codahale.metrics.JmxReporter.Builder.bui
			com.codahale.metrics.JmxReporter.stop()
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/JmxMetricReporter.java	Deleted	com.codahale.metrics.JmxReporter.Builder.inD omain(java.lang.String)
flexy-dropwizard3-metrics			com.codahale.metrics.JmxReporter.start()
			com.codahale.metrics.JmxReporter.forRegistry (com.codahale.metrics.MetricRegistry)
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.ScheduledReporter.stop ()
			com.codahale.metrics.ScheduledReporter.start (long,java.util.concurrent.TimeUnit)
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/CodahaleTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)

## The inconsistent library versions in Modules 1-3 are harmonized into version 4.0.3. Of the 7 deleted APIs, none of them is suggested with a replacement in javadoc.

#### **Harmonization Effort**

Index	Module	NA (NAC)	NDA (NDAC)	NMA (NMAC)
1	flexy-dropwizard3-metrics	16(18)	7(7)	1(1)
2	flexy-dropwizard-metrics	8(10)	0(0)	0(0)
3	flexy-pool-core	5(6)	0(0)	0(0)

NA (Number of APIs): the number of called library APIs in one module.

NAC (Number of API Calls): the number of library API calls in one module.

NDA (Number of Deleted APIs): the number of called library APIs that are deleted in the recommended library version.

NDAC (Number of Deleted API Calls): the number of library API calls that are deleted in the recommended library version.

NMA (Number of Modifiefd APIs): the number of called library APIs whose call graphs (A control flow graph which represents calling relationships between subroutines in the library) are modified in the recommended library version.

NMAC (Number of Modifiefd API Calls): the number of library API calls to modified library APIs.

#### Files related:

Module	File	Туре	API
			com.codahale.metrics.JmxReporter.Builder.bui
			com.codahale.metrics.JmxReporter.start()
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/JmxMetricReporter.java	Deleted	com.codahale.metrics.JmxReporter.Builder.inD omain(java.lang.String)
flexy-dropwizard3-metrics			com.codahale.metrics.JmxReporter.stop()
			com.codahale.metrics.JmxReporter.forRegistry (com.codahale.metrics.MetricRegistry)
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.ScheduledReporter.start (long,java.util.concurrent.TimeUnit)
			com.codahale.metrics.ScheduledReporter.stop ()
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/CodahaleTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)

## The inconsistent library versions in Modules 1-3 are harmonized into version 4.0.4. Of the 7 deleted APIs, none of them is suggested with a replacement in javadoc.

#### **Harmonization Effort**

Index	Module	NA (NAC)	NDA (NDAC)	NMA (NMAC)
1	flexy-dropwizard3-metrics	16(18)	7(7)	1(1)
2	flexy-dropwizard-metrics	8(10)	0(0)	0(0)
3	flexy-pool-core	5(6)	0(0)	0(0)

NA (Number of APIs): the number of called library APIs in one module.

NAC (Number of API Calls): the number of library API calls in one module.

NDA (Number of Deleted APIs): the number of called library APIs that are deleted in the recommended library version.

NDAC (Number of Deleted API Calls): the number of library API calls that are deleted in the recommended library version.

NMA (Number of Modifiefd APIs): the number of called library APIs whose call graphs (A control flow graph which represents calling relationships between subroutines in the library) are modified in the recommended library version.

NMAC (Number of Modifiefd API Calls): the number of library API calls to modified library APIs.

Module	File	Туре	API
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.ScheduledReporter.stop ()

			com.codahale.metrics.ScheduledReporter.start (long,java.util.concurrent.TimeUnit)
			com.codahale.metrics.JmxReporter.forRegistry (com.codahale.metrics.MetricRegistry)
flexy-dropwizard3-metrics			com.codahale.metrics.JmxReporter.Builder.inD omain(java.lang.String)
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/JmxMetricReporter.java	Deleted	com.codahale.metrics.JmxReporter.stop()
			com.codahale.metrics.JmxReporter.start()
			com.codahale.metrics.JmxReporter.Builder.bui
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/CodahaleTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)

The inconsistent library versions in Modules 1-3 are harmonized into version 4.0.5. Of the 7 deleted APIs, none of them is suggested with a replacement in javadoc.

#### **Harmonization Effort**

Index	Module	NA (NAC)	NDA (NDAC)	NMA (NMAC)
1	flexy-dropwizard3-metrics	16(18)	7(7)	1(1)
2	flexy-dropwizard-metrics	8(10)	0(0)	0(0)
3	flexy-pool-core	5(6)	0(0)	0(0)

NA (Number of APIs): the number of called library APIs in one module.

NAC (Number of API Calls): the number of library API calls in one module.

NDA (Number of Deleted APIs): the number of called library APIs that are deleted in the recommended library version.

 $NDAC \ (\textit{Number of Deleted API Calls}): \ the \ number \ of \ library \ API \ calls \ that \ are \ deleted \ in \ the \ recommended \ library \ version.$ 

NMA (Number of Modifiefd APIs): the number of called library APIs whose call graphs (A control flow graph which represents calling relationships between subroutines in the library) are modified in the recommended library version.

NMAC (Number of Modifiefd API Calls): the number of library API calls to modified library APIs.

Module	File	Туре	API
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.ScheduledReporter.stop ()
			com.codahale.metrics.ScheduledReporter.start (long,java.util.concurrent.TimeUnit)
			com.codahale.metrics.JmxReporter.Builder.bui
flexy-dropwizard3-metrics			com.codahale.metrics.JmxReporter.forRegistry (com.codahale.metrics.MetricRegistry)
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/JmxMetricReporter.java	Deleted	com.codahale.metrics.JmxReporter.Builder.inD omain(java.lang.String)
			com.codahale.metrics.JmxReporter.start()

		com.codahale.metrics.JmxReporter.stop()
flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/CodahaleTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)

## The inconsistent library versions in Modules 1-3 are harmonized into version 4.0.6. Of the 7 deleted APIs, none of them is suggested with a replacement in javadoc.

#### **Harmonization Effort**

Index	Module	NA (NAC)	NDA (NDAC)	NMA (NMAC)
1	flexy-dropwizard3-metrics	16(18)	7(7)	1(1)
2	flexy-dropwizard-metrics	8(10)	0(0)	0(0)
3	flexy-pool-core	5(6)	0(0)	0(0)

NA (Number of APIs): the number of called library APIs in one module.

NMA (Number of Modifiefd APIs): the number of called library APIs whose call graphs (A control flow graph which represents calling relationships between subroutines in the library) are modified in the recommended library version.

NMAC (Number of Modifiefd API Calls): the number of library API calls to modified library APIs.

#### Files related:

Module	File	Туре	API
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.ScheduledReporter.stop ()
			com.codahale.metrics.ScheduledReporter.start (long,java.util.concurrent.TimeUnit)
			com.codahale.metrics.JmxReporter.Builder.inD omain(java.lang.String)
flexy-dropwizard3-metrics			com.codahale.metrics.JmxReporter.forRegistry (com.codahale.metrics.MetricRegistry)
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/JmxMetricReporter.java	Deleted	com.codahale.metrics.JmxReporter.start()
			com.codahale.metrics.JmxReporter.stop()
			com.codahale.metrics.JmxReporter.Builder.bui
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/CodahaleTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)

The inconsistent library versions in Modules 1-3 are harmonized into version 4.0.7. Of the 7 deleted APIs, none of them is suggested with a replacement in javadoc.

### **Harmonization Effort**

Index	Module	NA (NAC)	NDA (NDAC)	NMA (NMAC)
	1110001010			

NAC (Number of API Calls): the number of library API calls in one module.

NDA (Number of Deleted APIs): the number of called library APIs that are deleted in the recommended library version.

NDAC (Number of Deleted API Calls): the number of library API calls that are deleted in the recommended library version.

1	flexy-dropwizard3-metrics	16(18)	7(7)	1(1)
2	flexy-dropwizard-metrics	8(10)	0(0)	0(0)
3	flexy-pool-core	5(6)	0(0)	0(0)

NA (Number of APIs): the number of called library APIs in one module.

NAC (Number of API Calls): the number of library API calls in one module.

NDA (Number of Deleted APIs): the number of called library APIs that are deleted in the recommended library version.

NDAC (Number of Deleted API Calls): the number of library API calls that are deleted in the recommended library version.

NMA (Number of Modifiefd APIs): the number of called library APIs whose call graphs (A control flow graph which represents calling relationships between subroutines in the library) are modified in the recommended library version.

NMAC (Number of Modifiefd API Calls): the number of library API calls to modified library APIs.

#### Files related:

Module	File	Туре	API
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.ScheduledReporter.start (long,java.util.concurrent.TimeUnit)
			com.codahale.metrics.ScheduledReporter.stop ()
			com.codahale.metrics.JmxReporter.Builder.bui
flexy-dropwizard3-metrics			com.codahale.metrics.JmxReporter.stop()
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/JmxMetricReporter.java	Deleted	com.codahale.metrics.JmxReporter.Builder.inD omain(java.lang.String)
			com.codahale.metrics.JmxReporter.forRegistry (com.codahale.metrics.MetricRegistry)
			com.codahale.metrics.JmxReporter.start()
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/CodahaleTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)

The inconsistent library versions in Modules 1-3 are harmonized into version 4.1.0-rc0. Of the 10 deleted APIs, none of them is suggested with a replacement in javadoc.

#### **Harmonization Effort**

Index	Module	NA (NAC)	NDA (NDAC)	NMA (NMAC)
1	flexy-dropwizard3-metrics	16(18)	8(8)	2(2)
2	flexy-dropwizard-metrics	8(10)	1(1)	1(1)
3	flexy-pool-core	5(6)	1(1)	1(1)

NA (Number of APIs): the number of called library APIs in one module.

NAC (Number of API Calls): the number of library API calls in one module.

NDA (Number of Deleted APIs): the number of called library APIs that are deleted in the recommended library version.

NDAC (Number of Deleted API Calls): the number of library API calls that are deleted in the recommended library version.

NMA (Number of Modifiefd APIs): the number of called library APIs whose call graphs (A control flow graph which represents calling relationships between subroutines in the library) are modified in the recommended library version.

NMAC (Number of Modifiefd API Calls): the number of library API calls to modified library APIs.

### Files related:

Module	File	Туре	API
			com.codahale.metrics.JmxReporter.Builder.bui
			com.codahale.metrics.JmxReporter.Builder.inD omain(java.lang.String)
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/JmxMetricReporter.java	Deleted	com.codahale.metrics.JmxReporter.start()
			com.codahale.metrics.JmxReporter.forRegistry (com.codahale.metrics.MetricRegistry)
flexy-dropwizard3-metrics			com.codahale.metrics.JmxReporter.stop()
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/Slf4jMetricReporter.java		com.codahale.metrics.ScheduledReporter.start (long,java.util.concurrent.TimeUnit)
		Deleted	com.codahale.metrics.ScheduledReporter.stop ()
			com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui ld()
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/CodahaleTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)
flexy-dropwizard-metrics	flexy-dropwizard-metrics/src/main/java/co m/vladmihalcea/flexypool/metric/dropwizar d/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui ld()
flexy-pool-core	flexy-pool-core/src/test/java/com/vladmihal cea/flexypool/connection/ConnectionProxy FactoryPerformanceTest.java	Deleted	com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui

The inconsistent library versions in Modules 1-3 are harmonized into version 4.1.0-rc2. Of the 10 deleted APIs, none of them is suggested with a replacement in javadoc.

### **Harmonization Effort**

Index	Module	NA (NAC)	NDA (NDAC)	NMA (NMAC)
1	flexy-dropwizard3-metrics	16(18)	8(8)	2(2)
2	flexy-dropwizard-metrics	8(10)	1(1)	1(1)
3	flexy-pool-core	5(6)	1(1)	1(1)

NA (Number of APIs): the number of called library APIs in one module.

NAC (Number of API Calls): the number of library API calls in one module.

NDA (Number of Deleted APIs): the number of called library APIs that are deleted in the recommended library version.

NDAC (Number of Deleted API Calls): the number of library API calls that are deleted in the recommended library version.

NMA (Number of Modifiefd APIs): the number of called library APIs whose call graphs (A control flow graph which represents calling relationships between subroutines in the library) are modified in the recommended library version.

NMAC (Number of Modifiefd API Calls): the number of library API calls to modified library APIs.

#### Files related:

Module	File	Туре	API
			com.codahale.metrics.ScheduledReporter.start (long,java.util.concurrent.TimeUnit)
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.ScheduledReporter.stop ()
			com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui ld()
flexy-dropwizard3-metrics			com.codahale.metrics.JmxReporter.stop()
			com.codahale.metrics.JmxReporter.Builder.bui
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/JmxMetricReporter.java	Deleted	com.codahale.metrics.JmxReporter.start()
			com.codahale.metrics.JmxReporter.forRegistry (com.codahale.metrics.MetricRegistry)
			com.codahale.metrics.JmxReporter.Builder.inD omain(java.lang.String)
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/CodahaleTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)
flexy-dropwizard-metrics	flexy-dropwizard-metrics/src/main/java/co m/vladmihalcea/flexypool/metric/dropwizar d/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui ld()
flexy-pool-core	flexy-pool-core/src/test/java/com/vladmihal cea/flexypool/connection/ConnectionProxy FactoryPerformanceTest.java	Deleted	com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui ld()

The inconsistent library versions in Modules 1-3 are harmonized into version 4.1.0-rc3. Of the 10 deleted APIs, none of them is suggested with a replacement in javadoc.

#### **Harmonization Effort**

Index	Module	NA (NAC)	NDA (NDAC)	NMA (NMAC)
1	flexy-dropwizard3-metrics	16(18)	8(8)	2(2)
2	flexy-dropwizard-metrics	8(10)	1(1)	1(1)
3	flexy-pool-core	5(6)	1(1)	1(1)

NA (Number of APIs): the number of called library APIs in one module.

 $\it NAC$  (Number of API Calls): the number of library API calls in one module.

 $\textbf{NDA (Number of Deleted APIs):} the number of called \ library \ APIs \ that \ are \ deleted \ in \ the \ recommended \ library \ version.$ 

NDAC (Number of Deleted API Calls): the number of library API calls that are deleted in the recommended library version.

NMA (Number of Modifiefd APIs): the number of called library APIs whose call graphs (A control flow graph which represents calling relationships between subroutines in the library) are modified in the recommended library version.

NMAC (Number of Modifiefd API Calls): the number of library API calls to modified library APIs.

Module	File	Туре	API
			com.codahale.metrics.JmxReporter.start()
			com.codahale.metrics.JmxReporter.forRegistry (com.codahale.metrics.MetricRegistry)
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/JmxMetricReporter.java	Deleted	com.codahale.metrics.JmxReporter.Builder.bui
			com.codahale.metrics.JmxReporter.Builder.inD omain(java.lang.String)
flexy-dropwizard3-metrics			com.codahale.metrics.JmxReporter.stop()
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/Slf4jMetricReporter.java		com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
		Deleted	com.codahale.metrics.ScheduledReporter.stop ()
			com.codahale.metrics.ScheduledReporter.start (long,java.util.concurrent.TimeUnit)
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui ld()
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/CodahaleTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)
flexy-dropwizard-metrics	flexy-dropwizard-metrics/src/main/java/co m/vladmihalcea/flexypool/metric/dropwizar d/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui ld()
flexy-pool-core	flexy-pool-core/src/test/java/com/vladmihal cea/flexypool/connection/ConnectionProxy FactoryPerformanceTest.java	Deleted	com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui

# The inconsistent library versions in Modules 1-3 are harmonized into version 4.1.0. Of the 10 deleted APIs, none of them is suggested with a replacement in javadoc.

#### **Harmonization Effort**

Index	Module	NA (NAC)	NDA (NDAC)	NMA (NMAC)
1	flexy-dropwizard3-metrics	16(18)	8(8)	2(2)
2	flexy-dropwizard-metrics	8(10)	1(1)	2(2)
3	flexy-pool-core	5(6)	1(1)	2(2)

NA (Number of APIs): the number of called library APIs in one module.

NAC (Number of API Calls): the number of library API calls in one module.

NDA (Number of Deleted APIs): the number of called library APIs that are deleted in the recommended library version.

NDAC (Number of Deleted API Calls): the number of library API calls that are deleted in the recommended library version.

NMA (Number of Modifiefd APIs): the number of called library APIs whose call graphs (A control flow graph which represents calling relationships between subroutines in the library) are modified in the recommended library version.

 ${\it NMAC (Number of Modified API Calls):} \ the \ number \ of \ library \ API \ calls \ to \ modified \ library \ APIs.$ 

Module	File	Туре	API
			com.codahale.metrics.JmxReporter.stop()
			com.codahale.metrics.JmxReporter.Builder.inD omain(java.lang.String)
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/JmxMetricReporter.java	Deleted	com.codahale.metrics.JmxReporter.forRegistry (com.codahale.metrics.MetricRegistry)
			com.codahale.metrics.JmxReporter.Builder.bui
flexy-dropwizard3-metrics			com.codahale.metrics.JmxReporter.start()
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/SIf4jMetricReporter.java		com.codahale.metrics.ScheduledReporter.stop ()
		Deleted	com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
			com.codahale.metrics.ScheduledReporter.start (long,java.util.concurrent.TimeUnit)
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/CodahaleTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)
	flexy-dropwizard-metrics/src/main/java/co m/vladmihalcea/flexypool/metric/dropwizar d/DropwizardTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)
flexy-dropwizard-metrics	flexy-dropwizard-metrics/src/main/java/co m/vladmihalcea/flexypool/metric/dropwizar d/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui

		Deleted	com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
flexy-pool-core	flexy-pool-core/src/test/java/com/vladmihal cea/flexypool/connection/ConnectionProxy FactoryPerformanceTest.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)
			com.codahale.metrics.Slf4jReporter.Builder.bui

## The inconsistent library versions in Modules 1-3 are harmonized into version 4.1.1. Of the 10 deleted APIs, none of them is suggested with a replacement in javadoc.

### **Harmonization Effort**

Index	Module	NA (NAC)	NDA (NDAC)	NMA (NMAC)
1	flexy-dropwizard3-metrics	16(18)	8(8)	2(2)
2	flexy-dropwizard-metrics	8(10)	1(1)	2(2)
3	flexy-pool-core	5(6)	1(1)	3(4)

 $\it NA$  (Number of APIs): the number of called library APIs in one module.

NAC (Number of API Calls): the number of library API calls in one module.

NDA (Number of Deleted APIs): the number of called library APIs that are deleted in the recommended library version.

NDAC (Number of Deleted API Calls): the number of library API calls that are deleted in the recommended library version.

NMA (Number of Modifiefd APIs): the number of called library APIs whose call graphs (A control flow graph which represents calling relationships between subroutines in the library) are modified in the recommended library version.

 ${\it NMAC (Number of Modified API Calls):} \ the \ number \ of \ library \ API \ calls \ to \ modified \ library \ APIs.$ 

Module	File	Туре	API
flexy-dropwizard3-metrics	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.ScheduledReporter.start (long,java.util.concurrent.TimeUnit)
			com.codahale.metrics.ScheduledReporter.stop ()
			com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/JmxMetricReporter.java	Deleted	com.codahale.metrics.JmxReporter.Builder.inD omain(java.lang.String)
			com.codahale.metrics.JmxReporter.stop()
			com.codahale.metrics.JmxReporter.forRegistry (com.codahale.metrics.MetricRegistry)
			com.codahale.metrics.JmxReporter.Builder.bui
			com.codahale.metrics.JmxReporter.start()
	flexy-dropwizard3-metrics/src/main/java/c om/vladmihalcea/flexypool/metric/codahal e/CodahaleTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)

flexy-dropwizard-metrics	flexy-dropwizard-metrics/src/main/java/co m/vladmihalcea/flexypool/metric/dropwizar d/DropwizardTimer.java	Modified	com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)	
	flexy-dropwizard-metrics/src/main/java/co m/vladmihalcea/flexypool/metric/dropwizar d/Slf4jMetricReporter.java	Deleted	com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)	
		Modified	com.codahale.metrics.Slf4jReporter.Builder.bui	
flexy-pool-core	flexy-pool-core/src/test/java/com/vladmihal cea/flexypool/connection/ConnectionProxy FactoryPerformanceTest.java	Deleted	com.codahale.metrics.Slf4jReporter.forRegistr y(com.codahale.metrics.MetricRegistry)	
		Modified	com.codahale.metrics.MetricRegistry.timer(jav a.lang.String)	
			com.codahale.metrics.Slf4jReporter.Builder.bui	
			com.codahale.metrics.Timer.update(long,java. util.concurrent.TimeUnit)	