## **Method Metrics**

#### References

- jqassistant
- Neo4j Python Driver

#### **Effective Method Line Count**

#### Table 1a - Effective method line count distribution

This table shows the distribution of the effective method line count per artifact. For each artifact the number of methods with effective line count = 1,2,3,... is shown to get an overview of how line counts are distributed over methods.

Only the 15 artifacts with the highest method count and their effective method line count distribution (limited by 40)is shown here. The whole table can be found in the CSV report Effective Method Line Count Distribution .

Have a look below to find out which packages and methods have the highest effective lines of code.

| artifactName       | axon-messaging-<br>4.9.3.jar | axon-eventsourcing-<br>4.9.3.jar | axon-modelling-<br>4.9.3.jar | axon-test-<br>4.9.3.jar | axon-configuration-<br>4.9.3.jar | axon-disruptor-<br>4.9.3.jar |
|--------------------|------------------------------|----------------------------------|------------------------------|-------------------------|----------------------------------|------------------------------|
| effectiveLineCount |                              |                                  |                              |                         |                                  |                              |
| 1                  | 2820                         | 573                              | 532                          | 279                     | 310                              | 84                           |
| 2                  | 823                          | 204                              | 158                          | 170                     | 146                              | 31                           |
| 3                  | 674                          | 127                              | 141                          | 64                      | 34                               | 30                           |
| 4                  | 269                          | 64                               | 57                           | 49                      | 42                               | 8                            |
| 5                  | 220                          | 39                               | 45                           | 24                      | 16                               | 5                            |
| 6                  | 161                          | 34                               | 45                           | 18                      | 17                               | 6                            |
| 7                  | 103                          | 32                               | 24                           | 20                      | 3                                | 2                            |
| 8                  | 80                           | 12                               | 10                           | 11                      | 7                                | 0                            |
| 9                  | 76                           | 17                               | 17                           | 10                      | 8                                | 4                            |
| 10                 | 46                           | 8                                | 8                            | 4                       | 6                                | 3                            |
| 11                 | 45                           | 2                                | 8                            | 9                       | 5                                | 1                            |
| 12                 | 41                           | 5                                | 2                            | 9                       | 1                                | 1                            |
| 13                 | 26                           | 2                                | 9                            | 5                       | 2                                | 1                            |
| 14                 | 17                           | 3                                | 3                            | 3                       | 1                                | 2                            |
| 15                 | 9                            | 2                                | 5                            | 2                       | 0                                | 0                            |
| 16                 | 8                            | 6                                | 2                            | 4                       | 0                                | 0                            |
| 17                 | 10                           | 0                                | 2                            | 3                       | 1                                | 1                            |
| 18                 | 9                            | 3                                | 0                            | 3                       | 1                                | 1                            |
| 19                 | 6                            | 0                                | 1                            | 0                       | 1                                | 1                            |
| 20                 | 5                            | 2                                | 2                            | 1                       | 0                                | 0                            |
| 21                 | 7                            | 2                                | 1                            | 1                       | 1                                | 0                            |
| 22                 | 2                            | 1                                | 2                            | 1                       | 0                                | 1                            |
| 23                 | 5                            | 2                                | 0                            | 1                       | 1                                | 0                            |
| 24                 | 3                            | 1                                | 1                            | 1                       | 0                                | 1                            |
| 25                 | 2                            | 1                                | 0                            | 0                       | 0                                | 0                            |
| 26                 | 2                            | 0                                | 1                            | 1                       | 1                                | 0                            |
| 28                 | 2                            | 0                                | 0                            | 0                       | 0                                | 0                            |
| 29                 | 0                            | 0                                | 0                            | 1                       | 0                                | 0                            |
| 30                 | 1                            | 0                                | 0                            | 0                       | 0                                | 0                            |
| 31                 | 1                            | 0                                | 0                            | 1                       | 0                                | 0                            |
| 32                 | 1                            | 0                                | 0                            | 0                       | 0                                | 1                            |
| 33                 | 1                            | 0                                | 0                            | 0                       | 0                                | 0                            |
| 34                 | 1                            | 0                                | 0                            | 0                       | 0                                | 0                            |
| 36                 | 2                            | 0                                | 0                            | 0                       | 0                                | 0                            |
| 38                 | 0                            | 0                                | 1                            | 0                       | 0                                | 0                            |
| 43                 | 0                            | 0                                | 0                            | 0                       | 1                                | 0                            |
| 44                 | 1                            | 0                                | 0                            | 0                       | 0                                | 0                            |
| 45                 | 0                            | 0                                | 0                            | 1                       | 0                                | 0                            |
| 50                 | 1                            | 0                                | 0                            | 0                       | 1                                | 0                            |
| 63                 | 1                            | 0                                | 0                            | 0                       | 0                                | 0                            |

# Table 1b - Effective method line count distribution (normalized)

The table shown here only includes the first 40 rows which typically represents the most significant entries. Have a look below to find out which packages and methods have the highest effective lines of code.

| artifactName       | axon-messaging-<br>4.9.3.jar | axon-eventsourcing-<br>4.9.3.jar | axon-modelling-<br>4.9.3.jar | axon-test-<br>4.9.3.jar | axon-configuration-<br>4.9.3.jar | axon-disruptor-<br>4.9.3.jar |
|--------------------|------------------------------|----------------------------------|------------------------------|-------------------------|----------------------------------|------------------------------|
| effectiveLineCount |                              |                                  |                              |                         |                                  |                              |
| 1                  | 51.431698                    | 50.175131                        | 49.396472                    | 40.086207               | 51.155116                        | 45.652174                    |
| 2                  | 15.010031                    | 17.863398                        | 14.670381                    | 24.425287               | 24.092409                        | 16.847826                    |
| 3                  | 12.292541                    | 11.120841                        | 13.091922                    | 9.195402                | 5.610561                         | 16.304348                    |
| 4                  | 4.906073                     | 5.604203                         | 5.292479                     | 7.040230                | 6.930693                         | 4.347826                     |
| 5                  | 4.012402                     | 3.415061                         | 4.178273                     | 3.448276                | 2.640264                         | 2.717391                     |
| 6                  | 2.936349                     | 2.977233                         | 4.178273                     | 2.586207                | 2.805281                         | 3.260870                     |
| 7                  | 1.878534                     | 2.802102                         | 2.228412                     | 2.873563                | 0.495050                         | 1.086957                     |
| 8                  | 1.459055                     | 1.050788                         | 0.928505                     | 1.580460                | 1.155116                         | 0.000000                     |
| 9                  | 1.386102                     | 1.488616                         | 1.578459                     | 1.436782                | 1.320132                         | 2.173913                     |
| 10                 | 0.838957                     | 0.700525                         | 0.742804                     | 0.574713                | 0.990099                         | 1.630435                     |
| 11                 | 0.820719                     | 0.175131                         | 0.742804                     | 1.293103                | 0.825083                         | 0.543478                     |
| 12                 | 0.747766                     | 0.437828                         | 0.185701                     | 1.293103                | 0.165017                         | 0.543478                     |
| 13                 | 0.474193                     | 0.175131                         | 0.835655                     | 0.718391                | 0.330033                         | 0.543478                     |
| 14                 | 0.310049                     | 0.262697                         | 0.278552                     | 0.431034                | 0.165017                         | 1.086957                     |
| 15                 | 0.164144                     | 0.175131                         | 0.464253                     | 0.287356                | 0.000000                         | 0.000000                     |
| 16                 | 0.145906                     | 0.525394                         | 0.185701                     | 0.574713                | 0.000000                         | 0.000000                     |
| 17                 | 0.182382                     | 0.000000                         | 0.185701                     | 0.431034                | 0.165017                         | 0.543478                     |
| 18                 | 0.164144                     | 0.262697                         | 0.000000                     | 0.431034                | 0.165017                         | 0.543478                     |
| 19                 | 0.109429                     | 0.000000                         | 0.092851                     | 0.000000                | 0.165017                         | 0.543478                     |
| 20                 | 0.091191                     | 0.175131                         | 0.185701                     | 0.143678                | 0.000000                         | 0.000000                     |
| 21                 | 0.127667                     | 0.175131                         | 0.092851                     | 0.143678                | 0.165017                         | 0.000000                     |
| 22                 | 0.036476                     | 0.087566                         | 0.185701                     | 0.143678                | 0.000000                         | 0.543478                     |
| 23                 | 0.091191                     | 0.175131                         | 0.000000                     | 0.143678                | 0.165017                         | 0.000000                     |
| 24                 | 0.054715                     | 0.087566                         | 0.092851                     | 0.143678                | 0.000000                         | 0.543478                     |
| 25                 | 0.036476                     | 0.087566                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
| 26                 | 0.036476                     | 0.000000                         | 0.092851                     | 0.143678                | 0.165017                         | 0.000000                     |
| 28                 | 0.036476                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
| 29                 | 0.000000                     | 0.000000                         | 0.000000                     | 0.143678                | 0.000000                         | 0.000000                     |
| 30                 | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
| 31                 | 0.018238                     | 0.000000                         | 0.000000                     | 0.143678                | 0.000000                         | 0.000000                     |
| 32                 | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.543478                     |
| 33                 | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
| 34                 | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
| 36                 | 0.036476                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
| 38                 | 0.000000                     | 0.000000                         | 0.092851                     | 0.000000                | 0.000000                         | 0.000000                     |
| 43                 | 0.000000                     | 0.000000                         | 0.000000                     | 0.000000                | 0.165017                         | 0.000000                     |
| 44                 | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
| 45                 | 0.000000                     | 0.000000                         | 0.000000                     | 0.143678                | 0.000000                         | 0.000000                     |
| 50                 | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.165017                         | 0.000000                     |
| 63                 | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
|                    |                              |                                  |                              |                         |                                  |                              |

Table 1b Chart 1 - Effective method line count distribution (normalized)

<Figure size 640x480 with 0 Axes>



Table 1c - Top 30 packages with highest effective line counts

The following table shows the top 30 packages with the highest effective lines of code. The whole table can be found in the CSV report Effective\_lines\_of\_method\_code\_per\_package .

|    | artifactName                     | fullPackageName   | linesInPackage | methodCount | maxLinesMethod | maxLinesMethodName                                      |
|----|----------------------------------|---|----------------|-------------|----------------|---|
| 0  | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling                           | 2333           | 838         | 64             | processBatch  |
| 1  | axon-<br>configuration-<br>4.9.3 | org.axonframework.config                                  | 1587           | 606         | 50             | <init></init>   |
| 2  | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling.pooled                    | 1021           | 333         | 78             | run   |
| 3  | axon-test-<br>4.9.3              | org.axonframework.test.aggregate                          | 951            | 249         | 45             | appendEventOverview                                     |
| 4  | axon-<br>messaging-<br>4.9.3     | org.axonframework.queryhandling                           | 927            | 381         | 36             | doQuery   |
| 5  | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling.deadletter.jdbc           | 849            | 249         | 31             | convertToLetter   |
| 6  | axon-<br>modelling-<br>4.9.3     | org.axonframework.modelling.command                       | 824            | 329         | 17             | lambda $initializeHandler$ 7                            |
| 7  | axon-<br>eventsourcing-<br>4.9.3 | org.axonframework.eventsourcing.eventstore                | 712            | 264         | 21             | peekPrivateStream                                       |
| 8  | axon-<br>messaging-<br>4.9.3     | org.axonframework.messaging.annotation                    | 673            | 239         | 23             | <init></init>   |
| 9  | axon-<br>modelling-<br>4.9.3     | org. ax on framework. modelling. command. in spection     | 637            | 218         | 26             | inspectFieldsAndMethods                                 |
| 10 | axon-<br>eventsourcing-<br>4.9.3 | org.axonframework.eventsourcing                           | 623            | 251         | 20             | doScheduleSnapshot                                      |
| 11 | axon-<br>disruptor-4.9.3         | org.axonframework.disruptor.commandhandling               | 605            | 184         | 32             | <init></init>   |
| 12 | axon-<br>eventsourcing-<br>4.9.3 | org.axonframework.eventsourcing.eventstore.leg            | 573            | 187         | 25             | fetchTrackedEvents                                      |
| 13 | axon-<br>eventsourcing-<br>4.9.3 | org.axonframework.eventsourcing.eventstore.jdbc           | 568            | 236         | 24             | <init></init>   |
| 14 | axon-<br>messaging-<br>4.9.3     | org.axonframework.serialization                           | 537            | 181         | 22             | <init></init>   |
| 15 | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling.deadletter.jpa            | 522            | 132         | 28             | equals  |
| 16 | axon-<br>messaging-<br>4.9.3     | org.axonframework.common                                  | 501            | 144         | 24             | get Exact Direct Super Types Of Parameterized Type Or C |
| 17 | axon-test-<br>4.9.3              | org.axonframework.test.saga                               | 492            | 168         | 29             | <init></init>   |
| 18 | axon-<br>modelling-<br>4.9.3     | org.axonframework.modelling.saga                          | 490            | 194         | 22             | handle  |
| 19 | axon-<br>messaging-<br>4.9.3     | org.axonframework.commandhandling.gateway                 | 488            | 174         | 50             | createGateway   |
| 20 | axon-<br>messaging-<br>4.9.3     | org.axonframework.commandhandling.distributed             | 477            | 175         | 23             | dispatch  |
| 21 | axon-<br>messaging-<br>4.9.3     | org. ax on framework. eventh and ling. to ken store. jdbc | 430            | 130         | 26             | updateToken   |
| 22 | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling.deadletter.leg            | 401            | 97          | 21             | convert   |
| 23 | axon-<br>messaging-<br>4.9.3     | org.axonframework.commandhandling                         | 377            | 169         | 13             | <init></init>   |
| 24 | axon-<br>modelling-<br>4.9.3     | org.axonframework.modelling.saga.repository.jdbc          | 374            | 84          | 38             | updateSaga  |
| 25 | axon-<br>messaging-<br>4.9.3     | org.axonframework.messaging.unitofwork                    | 363            | 129         | 32             | executeWithResult                                       |
| 26 | axon-test-<br>4.9.3              | org.axonframework.test.matchers                           | 351            | 108         | 21             | matchingFields  |

| maxLinesMethodName | maxLinesMethod | methodCount | linesInPackage | fullPackageName                                | artifactName                     |    |
|--------------------|----------------|-------------|----------------|--|----------------------------------|----|
| defaultHeaders     | 13             | 156         | 348            | org.axonframework.messaging                    | axon-<br>messaging-<br>4.9.3     | 27 |
| execute            | 18             | 103         | 321            | org.axonframework.deadline.dbscheduler         | axon-<br>messaging-<br>4.9.3     | 28 |
| fetchTrackedEvents | 23             | 101         | 318            | org.axonframework.eventsourcing.eventstore.jpa | axon-<br>eventsourcing-<br>4.9.3 | 29 |

## Table 1d - Top 30 methods with the highest effective line count

The following table shows the top 30 methods with the highest effective lines of code. The whole table can be found in the CSV report Effective\_lines\_of\_method\_code\_per\_package.

| i  | index | artifactName                     | fullPackageName  | maxLinesMethodType                                     | maxLinesMetho  |
|----|-------|----------------------------------|--|--|--|
| 0  | 2     | axon-<br>messaging-<br>4.9.3     | org. ax on framework. eventh and ling. pooled            | Coordinator\$CoordinationTask                          |  |
| 1  | 0     | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling                          | TrackingEventProcessor                                 | proces   |
| 2  | 19    | axon-<br>messaging-<br>4.9.3     | org.axonframework.commandhandling.gateway                | CommandGatewayFactory                                  | createG  |
| 3  | 1     | axon-<br>configuration-<br>4.9.3 | org.axonframework.config                                 | DefaultConfigurer                                      |  |
| 4  | 3     | axon-test-<br>4.9.3              | org.axonframework.test.aggregate                         | Reporter   | appendEventO <sub>1</sub>  |
| 5  | 35    | axon-<br>messaging-<br>4.9.3     | org.axonframework.deadline.quartz                        | DeadlineJob  | ę  |
| 6  | 24    | axon-<br>modelling-<br>4.9.3     | org.axonframework.modelling.saga.repository.jdbc         | JdbcSagaStore  | upda   |
| 7  | 4     | axon-<br>messaging-<br>4.9.3     | org.axonframework.queryhandling                          | SimpleQueryBus   | d  |
| 8  | 30    | axon-<br>messaging-<br>4.9.3     | org.axonframework.messaging.deadletter                   | InMemorySequencedDeadLetterQueue                       | ţ  |
| 9  | 25    | axon-<br>messaging-<br>4.9.3     | org.axonframework.messaging.unitofwork                   | BatchingUnitOfWork                                     | executeWitl  |
| 10 | 11    | axon-<br>disruptor-4.9.3         | org.axonframework.disruptor.commandhandling              | DisruptorCommandBus                                    |  |
| 11 | 5     | axon-<br>messaging-<br>4.9.3     | org. ax on framework. eventh and ling. dead letter. jdbc | DefaultDeadLetterJdbcConverter                         | convert1   |
| 12 | 17    | axon-test-<br>4.9.3              | org.axonframework.test.saga                              | SagaTestFixture  |  |
| 13 | 15    | axon-<br>messaging-<br>4.9.3     | org. ax on framework. eventhand ling. dead letter. jp a  | DeadLetterEventEntry                                   |  |
| 14 | 9     | axon-<br>modelling-<br>4.9.3     | org.axonframework.modelling.command.inspection           | Annotated Aggregate Meta Model Factory \$ Annotated Ag | inspectFieldsAndN  |
| 15 | 21    | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling.tokenstore.jdbc          | JdbcTokenStore   | updat  |
| 16 | 12    | axon-<br>eventsourcing-<br>4.9.3 | org. ax on framework. events our cing. events to re.leg  | JpaEventStorageEngine                                  | fetchTrackec   |
| 17 | 34    | axon-<br>messaging-<br>4.9.3     | org.axonframework.deadline                               | SimpleDeadlineManager\$DeadlineTask                    |  |
| 18 | 13    | axon-<br>eventsourcing-<br>4.9.3 | org.axonframework.eventsourcing.eventstore.jdbc          | JdbcEventStorageEngine                                 |  |
| 19 | 16    | axon-<br>messaging-<br>4.9.3     | org.axonframework.common                                 | TypeReflectionUtils                                    | get Exact Direct Super Types Of Parameterized Types Of Parameteriz |
| 20 | 20    | axon-<br>messaging-<br>4.9.3     | org.axonframework.commandhandling.distributed            | DistributedCommandBus                                  | d  |
| 21 | 29    | axon-<br>eventsourcing-<br>4.9.3 | org.axonframework.eventsourcing.eventstore.jpa           | JpaEventStorageEngine                                  | fetchTrackec   |
| 22 | 8     | axon-<br>messaging-<br>4.9.3     | org.axonframework.messaging.annotation                   | AnnotatedMessageHandlingMember                         |  |
| 23 | 47    | axon-<br>messaging-<br>4.9.3     | org.axonframework.deadline.jobrunr                       | JobRunrDeadlineManager                                 | ę  |
| 24 | 32    | axon-<br>modelling-<br>4.9.3     | org.axonframework.modelling.saga.repository              | AssociationValueMap\$AssociationValueComparator        | CI   |
| 25 | 18    | axon-<br>modelling-<br>4.9.3     | org.axonframework.modelling.saga                         | AbstractSagaManager                                    |  |
| 26 | 14    | axon-<br>messaging-<br>4.9.3     | org.axonframework.serialization                          | AbstractXStreamSerializer                              |  |

| maxLinesMetho | me fullPackageName maxLinesMethodType |   | artifactName                     | index |    |
|---------------|---------------------------------------|---|----------------------------------|-------|----|
| matchin       | DeepEqualsMatcher                     | org.axonframework.test.matchers                         | axon-test-<br>4.9.3              | 26    | 27 |
|               | EventMessageDeadLetterJpaConverter    | org. ax on framework. eventh and ling. dead letter. leg | axon-<br>messaging-<br>4.9.3     | 22    | 28 |
| peekPrivate   | EmbeddedEventStore\$EventConsumer     | org.axonframework.eventsourcing.eventstore              | axon-<br>eventsourcing-<br>4.9.3 | 7     | 29 |

# Cyclomatic Complexity

#### Table 2a - Cyclomatic method complexity distribution

This table shows the distribution of the cyclomatic complexity of methods per artifact. For each artifact the number of methods with the cyclomatic complexity = 1,2,3,... is shown to get an overview of how cyclomatic complexity is distributed over methods.

Only the 15 artifacts with the highest method count sum and their cyclomatic method complexity distribution (limited by 40) is shown here. The whole table can be found in the CSV report Cyclomatic\_Method\_Complexity\_Distribution.

Have a look below to find out which packages and methods have the highest effective lines of code.

| artifactName         | axon-messaging-<br>4.9.3.jar | axon-eventsourcing-<br>4.9.3.jar | axon-modelling-<br>4.9.3.jar | axon-test-<br>4.9.3.jar | axon-configuration-<br>4.9.3.jar | axon-disruptor-<br>4.9.3.jar |
|----------------------|------------------------------|----------------------------------|------------------------------|-------------------------|----------------------------------|------------------------------|
| cyclomaticComplexity |                              |                                  |                              |                         |                                  |                              |
| 1                    | 4414                         | 943                              | 895                          | 519                     | 542                              | 146                          |
| 2                    | 462                          | 94                               | 75                           | 60                      | 37                               | 20                           |
| 3                    | 283                          | 53                               | 38                           | 60                      | 17                               | 5                            |
| 4                    | 140                          | 24                               | 29                           | 22                      | 5                                | 4                            |
| 5                    | 74                           | 9                                | 24                           | 12                      | 3                                | 3                            |
| 6                    | 46                           | 4                                | 10                           | 9                       | 0                                | 2                            |
| 7                    | 20                           | 7                                | 2                            | 4                       | 2                                | 2                            |
| 8                    | 12                           | 7                                | 1                            | 3                       | 0                                | 2                            |
| 9                    | 7                            | 0                                | 2                            | 1                       | 0                                | 0                            |
| 10                   | 4                            | 0                                | 0                            | 1                       | 0                                | 0                            |
| 11                   | 9                            | 0                                | 0                            | 2                       | 0                                | 0                            |
| 12                   | 4                            | 0                                | 0                            | 2                       | 0                                | 0                            |
| 13                   | 2                            | 1                                | 0                            | 1                       | 0                                | 0                            |
| 14                   | 1                            | 0                                | 0                            | 0                       | 0                                | 0                            |
| 15                   | 1                            | 0                                | 0                            | 0                       | 0                                | 0                            |
| 16                   | 0                            | 0                                | 1                            | 0                       | 0                                | 0                            |
| 17                   | 1                            | 0                                | 0                            | 0                       | 0                                | 0                            |
| 21                   | 1                            | 0                                | 0                            | 0                       | 0                                | 0                            |
| 22                   | 1                            | 0                                | 0                            | 0                       | 0                                | 0                            |
| 40                   | 1                            | 0                                | 0                            | 0                       | 0                                | 0                            |

#### Table 2b - Cyclomatic method complexity distribution (normalized)

The table shown here only includes the first 40 rows which typically represents the most significant entries. Have a look below to find out which packages and methods have the highest effective lines of

| artifactName         | axon-messaging-<br>4.9.3.jar | axon-eventsourcing-<br>4.9.3.jar | axon-modelling-<br>4.9.3.jar | axon-test-<br>4.9.3.jar | axon-configuration-<br>4.9.3.jar | axon-disruptor-<br>4.9.3.jar |
|----------------------|------------------------------|----------------------------------|------------------------------|-------------------------|----------------------------------|------------------------------|
| cyclomaticComplexity |                              |                                  |                              |                         |                                  |                              |
| 1                    | 80.503374                    | 82.574431                        | 83.101207                    | 74.568966               | 89.438944                        | 79.347826                    |
| 2                    | 8.426044                     | 8.231173                         | 6.963788                     | 8.620690                | 6.105611                         | 10.869565                    |
| 3                    | 5.161408                     | 4.640981                         | 3.528319                     | 8.620690                | 2.805281                         | 2.717391                     |
| 4                    | 2.553347                     | 2.101576                         | 2.692665                     | 3.160920                | 0.825083                         | 2.173913                     |
| 5                    | 1.349626                     | 0.788091                         | 2.228412                     | 1.724138                | 0.495050                         | 1.630435                     |
| 6                    | 0.838957                     | 0.350263                         | 0.928505                     | 1.293103                | 0.000000                         | 1.086957                     |
| 7                    | 0.364764                     | 0.612960                         | 0.185701                     | 0.574713                | 0.330033                         | 1.086957                     |
| 8                    | 0.218858                     | 0.612960                         | 0.092851                     | 0.431034                | 0.000000                         | 1.086957                     |
| 9                    | 0.127667                     | 0.000000                         | 0.185701                     | 0.143678                | 0.000000                         | 0.000000                     |
| 10                   | 0.072953                     | 0.000000                         | 0.000000                     | 0.143678                | 0.000000                         | 0.000000                     |
| 11                   | 0.164144                     | 0.000000                         | 0.000000                     | 0.287356                | 0.000000                         | 0.000000                     |
| 12                   | 0.072953                     | 0.000000                         | 0.000000                     | 0.287356                | 0.000000                         | 0.000000                     |
| 13                   | 0.036476                     | 0.087566                         | 0.000000                     | 0.143678                | 0.000000                         | 0.000000                     |
| 14                   | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
| 15                   | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
| 16                   | 0.000000                     | 0.000000                         | 0.092851                     | 0.000000                | 0.000000                         | 0.000000                     |
| 17                   | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
| 21                   | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
| 22                   | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |
| 40                   | 0.018238                     | 0.000000                         | 0.000000                     | 0.000000                | 0.000000                         | 0.000000                     |

# Table 2b Chart 1 - Cyclomatic method complexity distribution (normalized)





Table 2c - Top 30 packages with highest cyclomatic complexity

The following table shows the top 30 packages with the highest cyclomatic complexity. The whole table can be found in the CSV report Effective\_lines\_of\_method\_code\_per\_package .

|    | artifactName                     | fullPackageName   | complexityInPackage | methodCount | maxComplexity | maxComplexityMeth                              |
|----|----------------------------------|---|---------------------|-------------|---------------|--|
| 0  | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling                           | 1276                | 838         | 21            | processBat                                     |
| 1  | axon-<br>configuration-<br>4.9.3 | org.axonframework.config                                  | 716                 | 606         | 7             | invokeLifecycleHandle                          |
| 4  | axon-<br>messaging-<br>4.9.3     | org.axonframework.queryhandling                           | 477                 | 381         | 11            | doQue  |
| 2  | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling.pooled                    | 449                 | 333         | 22            | r  |
| 6  | axon-<br>modelling-<br>4.9.3     | org.axonframework.modelling.command                       | 445                 | 329         | 9             | resolveTarç                                    |
| 3  | axon-test-<br>4.9.3              | org.axonframework.test.aggregate                          | 434                 | 249         | 13            | ensureValuesEq.                                |
| 7  | axon-<br>eventsourcing-<br>4.9.3 | org.axonframework.eventsourcing.eventstore                | 397                 | 264         | 13            | hasNe  |
| 8  | axon-<br>messaging-<br>4.9.3     | org.axonframework.messaging.annotation                    | 386                 | 239         | 14            | hand   |
| 9  | axon-<br>modelling-<br>4.9.3     | org. axon framework. modelling. command. in spection      | 339                 | 218         | 9             | prepareHandle                                  |
| 10 | axon-<br>eventsourcing-<br>4.9.3 | org.axonframework.eventsourcing                           | 325                 | 251         | 8             | doScheduleSnapst                               |
| 5  | axon-<br>messaging-<br>4.9.3     | org. ax on framework. eventh and ling. dead letter. jdbc  | 304                 | 249         | 12            | equ₁   |
| 16 | axon-<br>messaging-<br>4.9.3     | org.axonframework.common                                  | 301                 | 144         | 9             | getExactDirectSuperTypesOfParameterizedTypeOrC |
| 12 | axon-<br>eventsourcing-<br>4.9.3 | org. ax on framework. events our cing. events to re.leg   | 292                 | 187         | 8             | loadKeyViolationCod                            |
| 14 | axon-<br>messaging-<br>4.9.3     | org.axonframework.serialization                           | 285                 | 181         | 7             | calculateRou                                   |
| 18 | axon-<br>modelling-<br>4.9.3     | org.axonframework.modelling.saga                          | 277                 | 194         | 6             | instantiateAssociationResol\                   |
| 11 | axon-<br>disruptor-4.9.3         | org.axonframework.disruptor.commandhandling               | 274                 | 184         | 8             | doDispat                                       |
| 13 | axon-<br>eventsourcing-<br>4.9.3 | org. ax on framework. events our cing. events to re. jdbc | 273                 | 236         | 7             | ${\tt lambda} fetch Tracked Events$            |
| 19 | axon-<br>messaging-<br>4.9.3     | org.axonframework.commandhandling.gateway                 | 249                 | 174         | 12            | createGatew                                    |
| 20 | axon-<br>messaging-<br>4.9.3     | org.axonframework.commandhandling.distributed             | 243                 | 175         | 12            | equa   |
| 17 | axon-test-<br>4.9.3              | org.axonframework.test.saga                               | 235                 | 168         | 9             | assertDispatchedEqual                          |
| 15 | axon-<br>messaging-<br>4.9.3     | org. ax on framework. eventhand ling. dead letter. jp a   | 212                 | 132         | 15            | equa   |
| 27 | axon-<br>messaging-<br>4.9.3     | org.axonframework.messaging                               | 209                 | 156         | 4             | endSco   |
| 25 | axon-<br>messaging-<br>4.9.3     | org.axonframework.messaging.unitofwork                    | 206                 | 129         | 11            | executeWithRes                                 |
| 23 | axon-<br>messaging-<br>4.9.3     | org.axonframework.commandhandling                         | 201                 | 169         | 10            | ≺in  |
| 26 | axon-test-<br>4.9.3              | org.axonframework.test.matchers                           | 191                 | 108         | 8             | matchesL                                       |
| 31 | axon-<br>messaging-<br>4.9.3     | org.axonframework.common.caching                          | 182                 | 110         | 8             | onEve  |
| 21 | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling.tokenstore.jdbc           | 173                 | 130         | 9             | updateTok                                      |

| kity | maxComplex   | maxComplexity | methodCount | complexityInPackage | fullPackageName                                | artifactName                     |    |
|------|--------------|---------------|-------------|---------------------|--|----------------------------------|----|
|      |              | 10            | 112         | 169                 | org.axonframework.messaging.deadletter         | axon-<br>messaging-<br>4.9.3     | 30 |
| ssa  | determineMes | 7             | 126         | 156                 | org.axonframework.tracing                      | axon-<br>messaging-<br>4.9.3     | 33 |
| ati  | loadKeyViola | 8             | 101         | 155                 | org.axonframework.eventsourcing.eventstore.jpa | axon-<br>eventsourcing-<br>4.9.3 | 29 |

## Table 2d - Top 30 methods with highest cyclomatic complexity

The following table shows the top 30 packages containing the methods with the highest cyclomatic complexity. The whole table can be found in the CSV report

Effective\_lines\_of\_method\_code\_per\_package .

|    | index artifactName |                                  | fullPackageName  | maxComplexityType   | maxComple           |
|----|--------------------|----------------------------------|--|---|---------------------|
| 0  | 51                 | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling.scheduling.job           | JobRunrEventScheduler   | deserial:           |
| 1  | 2                  | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling.pooled                   | Coordinator\$CoordinationTask   |                     |
| 2  | 0                  | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling                          | TrackingEventProcessor  | рі                  |
| 3  | 32                 | axon-<br>modelling-<br>4.9.3     | org.axonframework.modelling.saga.repository              | AssociationValueMap\$AssociationValueComparator                       |                     |
| 4  | 15                 | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling.deadletter.jpa           | DeadLetterEventEntry  |                     |
| 5  | 8                  | axon-<br>messaging-<br>4.9.3     | org.axonframework.messaging.annotation                   | AnnotatedMessageHandlingMember  |                     |
| 6  | 7                  | axon-<br>eventsourcing-<br>4.9.3 | org.axonframework.eventsourcing.eventstore               | ConcatenatingDomainEventStream  |                     |
| 7  | 52                 | axon-<br>messaging-<br>4.9.3     | org. axon framework. command handling. distributed       | CommandNameFilter   | deserial            |
| 8  | 47                 | axon-<br>messaging-<br>4.9.3     | org.axonframework.deadline.jobrunr                       | JobRunrDeadlineManager  | deserial:           |
| 9  | 3                  | axon-test-<br>4.9.3              | org.axonframework.test.aggregate                         | AggregateTestFixture  | ensure <sup>1</sup> |
| 10 | 5                  | axon-<br>messaging-<br>4.9.3     | org.axonframework.eventhandling.deadletter.jdbc          | JdbcDeadLetter  |                     |
| 11 | 37                 | axon-<br>messaging-<br>4.9.3     | org.axonframework.common.jdbc                            | ConnectionWrapperFactory  | lar                 |
| 12 | 39                 | axon-test-<br>4.9.3              | org.axonframework.test.server                            | AxonServerContainer   |                     |
| 13 | 19                 | axon-<br>messaging-<br>4.9.3     | org.axonframework.commandhandling.gateway                | CommandGatewayFactory   | cre                 |
| 14 | 20                 | axon-<br>messaging-<br>4.9.3     | org. axon framework. command handling. distributed       | ReplyMessage  |                     |
| 15 | 22                 | axon-<br>messaging-<br>4.9.3     | org. ax on framework. eventhand ling. dead letter. leg   | JpaDeadLetter   |                     |
| 16 | 35                 | axon-<br>messaging-<br>4.9.3     | org.axonframework.deadline.quartz                        | DeadlineJob   |                     |
| 17 | 4                  | axon-<br>messaging-<br>4.9.3     | org.axonframework.queryhandling                          | SimpleQueryBus  |                     |
| 18 | 28                 | axon-<br>messaging-<br>4.9.3     | org.axonframework.deadline.dbscheduler                   | DbSchedulerHumanReadableDeadlineDetails                               |                     |
| 19 | 25                 | axon-<br>messaging-<br>4.9.3     | org.axonframework.messaging.unitofwork                   | BatchingUnitOfWork  | execut              |
| 20 | 23                 | axon-<br>messaging-<br>4.9.3     | org.axonframework.commandhandling                        | $\label{lem:MethodCommandHandlerDefinition} \textbf{MethodCommandMe}$ |                     |
| 21 | 40                 | axon-<br>messaging-<br>4.9.3     | org.axonframework.messaging.responsetypes                | MultipleInstancesResponseType   |                     |
| 22 | 49                 | axon-<br>messaging-<br>4.9.3     | org.axonframework.common.lock                            | PessimisticLockFactory\$DisposableLock                                |                     |
| 23 | 30                 | axon-<br>messaging-<br>4.9.3     | org.axonframework.messaging.deadletter                   | GenericDeadLetter   |                     |
| 24 | 21                 | axon-<br>messaging-<br>4.9.3     | org. ax on framework. eventh and ling. to ken store.jdbc | JdbcTokenStore  | ι                   |
| 25 | 6                  | axon-<br>modelling-<br>4.9.3     | org.axonframework.modelling.command                      | Annotation Command Target Resolver                                    | re                  |
| 26 | 17                 | axon-test-<br>4.9.3              | org.axonframework.test.saga                              | CommandValidator  | assertDispatc       |

|    | index artifactName |                              | fullPackageName                                | maxComplexityType                                      | maxComple                              |
|----|--------------------|------------------------------|--|--|--|
| 27 | 16                 | axon-<br>messaging-<br>4.9.3 | org.axonframework.common                       | TypeReflectionUtils                                    | getExactDirectSuperTypesOfParameterize |
| 28 | 50                 | axon-<br>messaging-<br>4.9.3 | org.axonframework.serialization.json           | JacksonSerializer                                      |  |
| 29 | 9                  | axon-<br>modelling-<br>4.9.3 | org.axonframework.modelling.command.inspection | Annotated Aggregate Meta Model Factory \$ Annotated Ag | prep                                   |