Internal Dependencies

References

- Analyze java package metrics in a graph database
- Calculate metrics
- Neo4j Python Driver

Artifacts

List the artifacts this notebook is based on. Different sorting variations help finding artifacts by their features and support larger code bases where the list of all artifacts gets too long.

Only the top 30 entries are shown. The whole table can be found in the following CSV report: `List_all_Java_artifacts`

Table 1a - Top 30 artifacts with the highest package count

	artifactName	packages	types	incomingDependencies	outgoingDependencies
0	axon-messaging-4.11.1.jar	66	809	8	0
1	axon-server-connector-4.11.1.jar	11	142	1	4
2	axon-modelling-4.11.1.jar	10	158	6	1
3	axon-eventsourcing-4.11.1.jar	9	133	5	2
4	axon-spring-boot-autoconfigure-4.11.1.jar	9	88	0	7
5	axon-test-4.11.1.jar	8	87	1	3
6	axon-configuration-4.11.1.jar	1	41	2	4
7	axon-disruptor-4.11.1.jar	1	22	1	3
8	axon-tracing-opentelemetry-4.11.1.jar	1	5	1	1

Table 1b - Top 30 artifacts with the highest type count

	artifactName	packages	types	incomingDependencies	outgoingDependencies
0	axon-messaging-4.11.1.jar	66	809	8	0
1	axon-modelling-4.11.1.jar	10	158	6	1
2	axon-server-connector-4.11.1.jar	11	142	1	4
3	axon-eventsourcing-4.11.1.jar	9	133	5	2
4	axon-spring-boot-autoconfigure-4.11.1.jar	9	88	0	7
5	axon-test-4.11.1.jar	8	87	1	3
6	axon-configuration-4.11.1.jar	1	41	2	4
7	axon-disruptor-4.11.1.jar	1	22	1	3
8	axon-tracing-opentelemetry-4.11.1.jar	1	5	1	1

Table 1c - Top 30 artifacts with the highest number of incoming dependencies

The following table lists the top 30 artifacts that are used the most by other artifacts (highest count of incoming dependencies, highest in-degree).

	artifactName	packages	types	incomingDependencies	outgoingDependencies
0	axon-messaging-4.11.1.jar	66	809	8	0
1	axon-modelling-4.11.1.jar	10	158	6	1
2	axon-eventsourcing-4.11.1.jar	9	133	5	2
3	axon-configuration-4.11.1.jar	1	41	2	4
4	axon-disruptor-4.11.1.jar	1	22	1	3
5	axon-server-connector-4.11.1.jar	11	142	1	4
6	axon-test-4.11.1.jar	8	87	1	3
7	axon-tracing-opentelemetry-4.11.1.jar	1	5	1	1
8	axon-spring-boot-autoconfigure-4.11.1.jar	9	88	0	7

Table 1d - Top 30 artifacts with the highest number of outgoing dependencies

The following table lists the top 30 artifacts that are depending on the highest number of other artifacts (highest count of outgoing dependencies, highest out-degree).

	artifactName	packages	types	incomingDependencies	outgoingDependencies
0	axon-spring-boot-autoconfigure-4.11.1.jar	9	88	0	7
1	axon-configuration-4.11.1.jar	1	41	2	4
2	axon-server-connector-4.11.1.jar	11	142	1	4
3	axon-disruptor-4.11.1.jar	1	22	1	3
4	axon-test-4.11.1.jar	8	87	1	3
5	axon-eventsourcing-4.11.1.jar	9	133	5	2
6	axon-modelling-4.11.1.jar	10	158	6	1
7	axon-tracing-opentelemetry-4.11.1.jar	1	5	1	1
8	axon-messaging-4.11.1.jar	66	809	8	0

Table 1e - Top 30 artifacts with the lowest package count

	artifactName	packages	types	incomingDependencies	outgoingDependencies
0	axon-configuration-4.11.1.jar	1	41	2	4
1	axon-disruptor-4.11.1.jar	1	22	1	3
2	axon-tracing-opentelemetry-4.11.1.jar	1	5	1	1
3	axon-test-4.11.1.jar	8	87	1	3
4	axon-eventsourcing-4.11.1.jar	9	133	5	2
5	axon-spring-boot-autoconfigure-4.11.1.jar	9	88	0	7
6	axon-modelling-4.11.1.jar	10	158	6	1
7	axon-server-connector-4.11.1.jar	11	142	1	4
8	axon-messaging-4.11.1.jar	66	809	8	0

Table 1f - Top 30 artifacts with the lowest type count

	artifactName	packages	types	incomingDependencies	outgoingDependencies
0	axon-tracing-opentelemetry-4.11.1.jar	1	5	1	1
1	axon-disruptor-4.11.1.jar	1	22	1	3
2	axon-configuration-4.11.1.jar	1	41	2	4
3	axon-test-4.11.1.jar	8	87	1	3
4	axon-spring-boot-autoconfigure-4.11.1.jar	9	88	0	7
5	axon-eventsourcing-4.11.1.jar	9	133	5	2
6	axon-server-connector-4.11.1.jar	11	142	1	4
7	axon-modelling-4.11.1.jar	10	158	6	1
8	axon-messaging-4.11.1.jar	66	809	8	0

Table 1g - Top 30 artifacts with the lowest number of incoming dependencies

The following table lists the top 30 artifacts that are used the least by other artifacts (lowest count of incoming dependencies, lowest in-degree).

	artifactName	packages	types	incomingDependencies	outgoingDependencies
0	axon-spring-boot-autoconfigure-4.11.1.jar	9	88	0	7
1	axon-disruptor-4.11.1.jar	1	22	1	3
2	axon-server-connector-4.11.1.jar	11	142	1	4
3	axon-test-4.11.1.jar	8	87	1	3
4	axon-tracing-opentelemetry-4.11.1.jar	1	5	1	1
5	axon-configuration-4.11.1.jar	1	41	2	4
6	axon-eventsourcing-4.11.1.jar	9	133	5	2
7	axon-modelling-4.11.1.jar	10	158	6	1
8	axon-messaging-4.11.1.jar	66	809	8	0

Table 1h - Top 30 artifacts with the lowest number of outgoing dependencies

The following table lists the top 30 artifacts that are depending on the lowest number of other artifacts (lowest count of outgoing dependencies, lowest out-degree).

	artifactName	packages	types	incomingDependencies	outgoingDependencies
0	axon-messaging-4.11.1.jar	66	809	8	0
1	axon-modelling-4.11.1.jar	10	158	6	1
2	axon-tracing-opentelemetry-4.11.1.jar	1	5	1	1
3	axon-eventsourcing-4.11.1.jar	9	133	5	2
4	axon-disruptor-4.11.1.jar	1	22	1	3
5	axon-test-4.11.1.jar	8	87	1	3
6	axon-configuration-4.11.1.jar	1	41	2	4
7	axon-server-connector-4.11.1.jar	11	142	1	4
8	axon-spring-boot-autoconfigure-4.11.1.jar	9	88	0	7

Cyclic Dependencies

Cyclic dependencies occur when one package uses a class of another package and vice versa. These dependencies can lead to problems when one of these packages needs to be changed.

Table 2a - Cyclic Dependencies Overview

Show the top 40 cyclic dependencies sorted by the most promising to resolve first. This is done by calculating the number of forward dependencies (first cycle participant to second cycle participant) in relation to backward dependencies (second cycle participant back to first cycle participant). The higher this rate (approaching 1), the easier it should be to resolve the cycle by focussing on the few backward dependencies.

Only the top 40 entries are shown. The whole table can be found in the following CSV report:
`Cyclic_Dependencies`

Columns:

- *artifactName* identifies the artifact of the first participant of the cycle
- *packageName* identifies the package of the first participant of the cycle
- *dependentArtifactName* identifies the artifact of the second participant of the cycle
- *dependentPackageName* identifies the package of the second participant of the cycle
- *forwardToBackwardBalance* is between 0 and 1. High for many forward and few backward dependencies.
- *numberForward* contains the number of dependencies from the first participant of the cycle to the second one
- *numberBackward* contains the number of dependencies from the second participant of the cycle back to the first one
- *someForwardDependencies* lists some forward dependencies in the text format "type1 -> type2"
- *backwardDependencies* lists the backward dependencies in the format "type1 <- type2" that are recommended to get resolved

	artifactName	packageName	dependentArtifactName	dependentPackageName	forwardToBackwardBalance	numberForward	numberBackward
0	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	0.900000	19	1
1	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	0.882353	16	1
2	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.tracing	0.875000	15	1
3	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.messaging	0.857143	39	3
4	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.messaging.annotation	0.840000	23	2
5	axon-messaging-4.11.1	org.axonframework.deadline	axon-messaging-4.11.1	org.axonframework.tracing	0.800000	9	1
6	axon-messaging-4.11.1	org.axonframework.commandhandling	axon-messaging-4.11.1	org.axonframework.tracing	0.777778	8	1
7	axon-eventsourcing-4.11.1	org.axonframework.eventsourcing	axon-eventsourcing-4.11.1	org.axonframework.eventsourcing.eventstore	0.777778	16	2
8	axon-messaging-4.11.1	org.axonframework.commandhandling.callbacks	axon-messaging-4.11.1	org.axonframework.commandhandling	0.733333	13	2
9	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.serialization	0.647059	14	3
10	axon-messaging-4.11.1	org.axonframework.messaging.unitofwork	axon-messaging-4.11.1	org.axonframework.messaging	0.647059	14	3
11	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.event.axon	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	0.615385	21	5
12	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.query	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	0.571429	22	6
13	axon-messaging-4.11.1	org.axonframework.eventhandling.async	axon-messaging-4.11.1	org.axonframework.eventhandling	0.571429	11	3
14	axon-messaging-4.11.1	org.axonframework.eventhandling.replay	axon-messaging-4.11.1	org.axonframework.eventhandling	0.454545	8	3
15	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.util	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	0.428571	5	2
16	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.event.util	0.333333	2	1
17	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.query	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.query.subscription	0.333333	4	2

	artifactName	packageName	dependentArtifactName	dependentPackageName	forwardToBackwardBalance	numberForward	numberBackward
18	axon-messaging-4.11.1	org.axonframework.serialization.upcasting.event	axon-messaging-4.11.1	org.axonframework.eventhandling	0.333333	6	3
19	axon-eventsourcing-4.11.1	org.axonframework.eventsourcing.eventstore.jdbc	axon-eventsourcing-4.11.1	org.axonframework.eventsourcing.eventstore.jdbc.statements	0.317073	27	14
20	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.eventhandling.tokenstore	0.285714	9	5
21	axon-modelling-4.11.1	org.axonframework.modelling.command.inspection	axon-modelling-4.11.1	org.axonframework.modelling.command	0.250000	20	12
22	axon-messaging-4.11.1	org.axonframework.queryhandling.registration	axon-messaging-4.11.1	org.axonframework.queryhandling	0.250000	5	3
23	axon-messaging-4.11.1	org.axonframework.messaging	axon-messaging-4.11.1	org.axonframework.serialization	0.238095	13	8
24	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.command	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	0.222222	11	7
25	axon-messaging-4.11.1	org.axonframework.messaging.annotation	axon-messaging-4.11.1	org.axonframework.messaging.interceptors	0.200000	3	2
26	axon-modelling-4.11.1	org.axonframework.modelling.saga	axon-modelling-4.11.1	org.axonframework.modelling.saga.metamodel	0.142857	4	3
27	axon-messaging-4.11.1	org.axonframework.commandhandling.distributed.commandfilter	axon-messaging-4.11.1	org.axonframework.commandhandling.distributed	0.076923	7	6

Table 2b - Cyclic Dependencies Break Down

Lists packages with cyclic dependencies with every dependency in a separate row sorted by the most promising dependency first.

Only the top 40 entries are shown. The whole table can be found in the following CSV report:
`Cyclic_Dependencies_Breakdown`

Columns in addition to Table 2a:

- *dependency* shows the cycle dependency in the text format "type1 -> type2" (forward) or "type2<-type1" (backward)

	artifactName	packageName	dependentArtifactName	dependentPackageName	dependency	forwardToBackwardBalance	numberForward	numberBackwa
0	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	SimpleEventBus$Builder->SpanFactory	0.900000	19	
1	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	AbstractEventProcessor$Builder->NoOpSpanFactory	0.900000	19	
2	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	AbstractEventBus$Builder->NoOpSpanFactory	0.900000	19	
3	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	DefaultEventProcessorSpanFactory->NoOpSpanFactory$NoOpSpan	0.900000	19	
4	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	EventMessage<-NestingSpanFactory	0.900000	19	
5	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	AbstractEventBus->Span	0.900000	19	
6	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	DefaultEventProcessorSpanFactory->SpanFactory	0.900000	19	
7	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	EventBusSpanFactory->Span	0.900000	19	
8	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	AbstractEventProcessor$Builder->SpanFactory	0.900000	19	
9	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	DefaultEventProcessorSpanFactory->Span	0.900000	19	
10	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	DefaultEventProcessorSpanFactory$Builder->SpanFactory	0.900000	19	
11	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	AbstractEventBus$Builder->SpanFactory	0.900000	19	
12	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	DefaultEventBusSpanFactory->SpanFactory	0.900000	19	
13	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	TrackingEventProcessor$Builder->SpanFactory	0.900000	19	
14	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	DefaultEventBusSpanFactory->Span	0.900000	19	
15	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	DefaultEventBusSpanFactory$Builder->SpanFactory	0.900000	19	
16	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	AbstractEventBus->SpanScope	0.900000	19	
17	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	SubscribingEventProcessor$Builder->SpanFactory	0.900000	19	
18	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	EventProcessorSpanFactory->Span	0.900000	19	
19	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	AbstractEventProcessor->Span	0.900000	19	
20	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	SimpleQueryBus->ResponseType	0.882353	16	
21	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	SubscriptionQueryMessage->ResponseType	0.882353	16	
22	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	GenericStreamingQueryMessage->ResponseType	0.882353	16	
23	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	SimpleQueryUpdateEmitter->PublisherResponseType	0.882353	16	
24	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	SimpleQueryUpdateEmitter->MultipleInstancesResponseType	0.882353	16	
25	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	QueryMessage->ResponseType	0.882353	16	
26	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	SimpleQueryUpdateEmitter->ResponseType	0.882353	16	
27	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	GenericStreamingQueryMessage->PublisherResponseType	0.882353	16	
28	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	QueryResponseMessage<-ConvertingResponseMessage	0.882353	16	
29	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	DefaultQueryGateway->ResponseType	0.882353	16	
30	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	QuerySubscription->ResponseType	0.882353	16	
31	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	SimpleQueryUpdateEmitter->OptionalResponseType	0.882353	16	
32	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	GenericQueryMessage->ResponseType	0.882353	16	
33	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	StreamingQueryMessage->ResponseType	0.882353	16	
34	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	QueryGateway->ResponseType	0.882353	16	
35	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	QueryGateway->ResponseTypes	0.882353	16	
36	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	GenericSubscriptionQueryMessage->ResponseType	0.882353	16	
37	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.tracing	DefaultQueryUpdateEmitterSpanFactory$Builder->SpanFactory	0.875000	15	
38	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.tracing	DefaultQueryBusSpanFactory$Builder->SpanFactory	0.875000	15	
39	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.tracing	SimpleQueryBus->SpanScope	0.875000	15	

Table 2c - Cyclic Dependencies Break Down - Backward Dependencies Only

Lists packages with cyclic dependencies with every dependency in a separate row sorted by the most promising dependency first. This table only contains the backward dependencies from the second participant of the cycle back to the first one that are the most promising to resolve.

Only the top 40 entries are shown. The whole table can be found in the following CSV report: `Cyclic_Dependencies_Breakdown_BackwardOnly`

	artifactName	packageName	dependentArtifactName	dependentPackageName	dependency	forwardToBackwa
0	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.tracing	EventMessage<-NestingSpanFactory	
1	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.messaging.responsetypes	QueryResponseMessage<-ConvertingResponseMessage	
2	axon-messaging-4.11.1	org.axonframework.queryhandling	axon-messaging-4.11.1	org.axonframework.tracing	QueryMessage<-SpanUtils	
3	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.messaging	TrackingToken<-StreamableMessageSource	
4	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.messaging	EventMessage<-Headers	
5	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.messaging	DomainEventMessage<-Headers	
6	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.messaging.annotation	DomainEventMessage<-SourceIdParameterResolverFactory$SourceIdParameterResolver	
7	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.messaging.annotation	DomainEventMessage<-AggregateTypeParameterResolverFactory$AggregateTypeParameterResolver	
8	axon-messaging-4.11.1	org.axonframework.deadline	axon-messaging-4.11.1	org.axonframework.tracing	DeadlineMessage<-SpanUtils	
9	axon-messaging-4.11.1	org.axonframework.commandhandling	axon-messaging-4.11.1	org.axonframework.tracing	CommandMessage<-SpanUtils	
10	axon-eventsourcing-4.11.1	org.axonframework.eventsourcing	axon-eventsourcing-4.11.1	org.axonframework.eventsourcing.eventstore	EventStreamUtils<-AbstractEventStorageEngine	
11	axon-eventsourcing-4.11.1	org.axonframework.eventsourcing	axon-eventsourcing-4.11.1	org.axonframework.eventsourcing.eventstore	EventStreamUtils<-DomainEventStream	
12	axon-messaging-4.11.1	org.axonframework.commandhandling.callbacks	axon-messaging-4.11.1	org.axonframework.commandhandling	NoOpCallback<-SimpleCommandBus$Builder	
13	axon-messaging-4.11.1	org.axonframework.commandhandling.callbacks	axon-messaging-4.11.1	org.axonframework.commandhandling	LoggingCallback<-SimpleCommandBus$Builder	
14	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.serialization	GenericEventMessage<-AbstractXStreamSerializer	
15	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.serialization	GapAwareTrackingToken<-GapAwareTrackingTokenConverter	
16	axon-messaging-4.11.1	org.axonframework.eventhandling	axon-messaging-4.11.1	org.axonframework.serialization	GenericDomainEventMessage<-AbstractXStreamSerializer	
17	axon-messaging-4.11.1	org.axonframework.messaging.unitofwork	axon-messaging-4.11.1	org.axonframework.messaging	UnitOfWork<-MessageHandlerInterceptor	
18	axon-messaging-4.11.1	org.axonframework.messaging.unitofwork	axon-messaging-4.11.1	org.axonframework.messaging	CurrentUnitOfWork<-GenericMessage	
19	axon-messaging-4.11.1	org.axonframework.messaging.unitofwork	axon-messaging-4.11.1	org.axonframework.messaging	UnitOfWork<-DefaultInterceptorChain	
20	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.event.axon	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	EventProcessorInfoConfiguration<-ServerConnectorConfigurerModule	
21	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.event.axon	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	AxonServerEventStoreFactory<-ServerConnectorConfigurerModule	
22	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.event.axon	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	AxonServerEventStore<-ServerConnectorConfigurerModule	
23	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.event.axon	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	AxonServerEventStoreFactory$Builder<-ServerConnectorConfigurerModule	
24	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.event.axon	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	AxonServerEventStore$Builder<-ServerConnectorConfigurerModule	
25	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.query	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	AxonServerQueryDispatchException<-ErrorCode	
26	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.query	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	AxonServerRemoteQueryHandlingException<-ErrorCode	
27	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.query	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	QueryPriorityCalculator<-ServerConnectorConfigurerModule	
28	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.query	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	AxonServerNonTransientRemoteQueryHandlingException<-ErrorCode	
29	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.query	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	AxonServerQueryBus$Builder<-ServerConnectorConfigurerModule	
30	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.query	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	AxonServerQueryBus<-ServerConnectorConfigurerModule	
31	axon-messaging-4.11.1	org.axonframework.eventhandling.async	axon-messaging-4.11.1	org.axonframework.eventhandling	SequentialPerAggregatePolicy<-SimpleEventHandlerInvoker$Builder	
32	axon-messaging-4.11.1	org.axonframework.eventhandling.async	axon-messaging-4.11.1	org.axonframework.eventhandling	SequencingPolicy<-SimpleEventHandlerInvoker$Builder	
33	axon-messaging-4.11.1	org.axonframework.eventhandling.async	axon-messaging-4.11.1	org.axonframework.eventhandling	SequencingPolicy<-SimpleEventHandlerInvoker	
34	axon-messaging-4.11.1	org.axonframework.eventhandling.replay	axon-messaging-4.11.1	org.axonframework.eventhandling	ResetContext<-ResetHandler	
35	axon-messaging-4.11.1	org.axonframework.eventhandling.replay	axon-messaging-4.11.1	org.axonframework.eventhandling	ResetContext<-AnnotationEventHandlerAdapter	
36	axon-messaging-4.11.1	org.axonframework.eventhandling.replay	axon-messaging-4.11.1	org.axonframework.eventhandling	GenericResetContext<-AnnotationEventHandlerAdapter	
37	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.util	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	ExceptionSerializer<-ErrorCode	
38	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.util	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	GrpcMessageSizeInterceptor<-AxonServerConnectionManager$Builder	
39	axon-server-connector-4.11.1	org.axonframework.axonserver.connector	axon-server-connector-4.11.1	org.axonframework.axonserver.connector.event.util	ErrorCode<-GrpcExceptionParser	

Interface Segregation Candidates

Well known from Design Principles and Design Patterns by Robert C. Martin, the *Interface Segregation Principle* suggests that software components should have narrow, focused interfaces rather than large, general-purpose ones. The goal is to minimize the dependencies between components and increase modularity, flexibility, and maintainability.

Smaller, focused and purpose-driven interfaces

- make it easier to modify individual components without affecting the rest of the system.
- make it clearer which client is affected by which change.
- don't force their clients to depend on methods they don't need.
- reduce the scope of changes since a change to one component doesn't affect others.
- lead to a more loosely coupled architecture that is easier to understand and maintain.

Reference: Analyze java package metrics in a graph database

How to apply the results

If just one method of a type is used, especially in many places, then the result of this method can be used to call e.g. a method or constuct an object instead of using the whole object and then just calling that single method.

If there are a couple of methods that are used for a distinct purpose, those could be factored out into a separate interface. The original type can extended/implement the new interface so that there are no breaking changes. Then all the callers, that use only this group of methods, can be changed to the new interface.

Table 4 - Top 40 most used combinations of methods

The following table shows the top 40 most used combinations of methods of larger types that might benefit from applying the *Interface Segregation Principle*. The whole table can be found in the CSV report `Candidates_for_Interface_Segregation`.

	fullDependentTypeName	declaredMethods	calledMethodNames	calledMethods	callerTypes
0	org.axonframework.commandhandling.CommandMessage	9	[getCommandName]	1	20
1	org.axonframework.eventhandling.EventMessage	9	[getTimestamp, getIdentifier]	2	11
2	org.axonframework.eventhandling.EventMessage	9	[getIdentifier]	1	10
3	org.axonframework.eventhandling.DomainEventMessage	10	[getSequenceNumber]	1	9
4	org.axonframework.eventhandling.TrackedEventMessage	10	[trackingToken]	1	8
5	org.axonframework.commandhandling.GenericCommandResultMessage	14	[asCommandResultMessage]	1	6
6	org.axonframework.eventhandling.DomainEventMessage	10	[getType, getSequenceNumber, getAggregateIdentifier]	3	6
7	org.axonframework.messaging.ResultMessage	9	[isExceptional, exceptionResult]	2	6
8	org.axonframework.eventhandling.ReplayToken	13	[createReplayToken]	1	5
9	org.axonframework.deadline.GenericDeadlineMessage	11	[asDeadlineMessage]	1	5
10	org.axonframework.eventhandling.DomainEventMessage	10	[getAggregateIdentifier]	1	5
11	org.axonframework.eventhandling.TrackedEventMessage	12	[trackingToken]	1	4
12	org.axonframework.eventhandling.GenericEventMessage	11	[asEventMessage]	1	4
13	org.axonframework.deadline.DeadlineMessage	10	[getDeadlineName]	1	4
14	org.axonframework.eventhandling.DomainEventMessage	10	[getType]	1	4
15	org.axonframework.eventhandling.EventMessage	9	[getTimestamp]	1	4
16	org.axonframework.deadline.DefaultDeadlineManagerSpanFactory	8	[builder]	1	4
17	org.axonframework.common.transaction.NoTransactionManager	4	[instance]	1	4
18	org.axonframework.queryhandling.SimpleQueryUpdateEmitter	17	[builder]	1	3
19	org.axonframework.commandhandling.GenericCommandResultMessage	15	[asCommandResultMessage]	1	3
20	org.axonframework.messaging.annotation.WrappedMessageHandlingMember	14	[handle]	1	3
21	org.axonframework.modelling.command.inspection.AggregateModel	13	[type]	1	3
22	org.axonframework.queryhandling.SubscriptionQueryMessage	12	[getUpdateResponseType]	1	3
23	org.axonframework.eventhandling.DomainEventMessage	11	[getType, getSequenceNumber, getAggregateIdentifier]	3	3
24	org.axonframework.queryhandling.SimpleQueryBus	11	[builder]	1	3
25	org.axonframework.eventhandling.DomainEventMessage	10	[getSequenceNumber, getAggregateIdentifier]	2	3
26	org.axonframework.eventhandling.GapAwareTrackingToken	10	[newInstance, withGapsTruncatedAt, getIndex, advanceTo, getGaps]	5	3
27	org.axonframework.eventhandling.GenericEventMessage	10	[asEventMessage]	1	3
28	org.axonframework.queryhandling.DefaultQueryBusSpanFactory	10	[builder]	1	3
29	org.axonframework.commandhandling.gateway.DefaultCommandGateway	9	[builder]	1	3
30	org.axonframework.config.Configuration	9	[snapshotFilter, upcasterChain]	2	3
31	org.axonframework.config.Configuration	9	[getComponent]	1	3
32	org.axonframework.queryhandling.QueryMessage	9	[getResponseType, getQueryName]	2	3
33	org.axonframework.commandhandling.DefaultCommandBusSpanFactory	5	[builder]	1	3
34	org.axonframework.eventhandling.TrackedEventData	5	[trackingToken]	1	3
35	org.axonframework.eventhandling.tokenstore.ConfigToken	5	[get]	1	3
36	org.axonframework.eventhandling.DefaultEventBusSpanFactory	4	[builder]	1	3
37	org.axonframework.queryhandling.DefaultQueryUpdateEmitterSpanFactory	4	[builder]	1	3
38	org.axonframework.modelling.command.inspection.AnnotatedAggregate	17	[getAggregateRoot, initialize, initSequence]	4	2
39	org.axonframework.queryhandling.DefaultQueryGateway	17	[builder]	1	2

Package Usage

Table 5 - Types that are used by multiple packages

This table shows the top 40 packages that are used by the highest number of different packages. The whole table can be found in the CSV report `List_types_that_are_used_by_many_different_packages`.

	fullQualifiedDependentTypeName	dependentTypeName	dependentTypeLabels	numberOfUsingPackages
0	org.axonframework.common.BuilderUtils	BuilderUtils	[Type, File, Java, ByteCode, Class, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Ma...	50
1	org.axonframework.common.AxonConfigurationException	AxonConfigurationException	[Type, File, Java, ByteCode, Class, Throwable, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedCom...	43
2	org.axonframework.messaging.Message	Message	[Type, File, Java, ByteCode, GenericDeclaration, Interface, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityBetweenness, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInduce...	42
3	org.axonframework.messaging.MetaData	MetaData	[Type, File, Java, ByteCode, Class, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityBetweenness, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4Ty...	40
4	org.axonframework.serialization.Serializer	Serializer	[Type, File, Java, ByteCode, Interface, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityBetweenness, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mar...	37
5	org.axonframework.eventhandling.EventMessage	EventMessage	[Type, File, Java, ByteCode, GenericDeclaration, Interface, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeakl...	36
6	org.axonframework.messaging.unitofwork.UnitOfWork	UnitOfWork	[Type, File, Java, ByteCode, GenericDeclaration, Interface, Mark4TopCentralityArticleRank, Mark4TopCentralityBetweenness, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWe...	33
7	org.axonframework.common.transaction.TransactionManager	TransactionManager	[Type, File, Java, ByteCode, Interface, Mark4TopCentralityArticleRank, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0...	31
8	org.axonframework.common.Assert	Assert	[Type, File, Java, ByteCode, Class, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Ma...	29
9	org.axonframework.serialization.SerializedObject	SerializedObject	[Type, File, Java, ByteCode, GenericDeclaration, Interface, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityBetweenness, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInduce...	28
10	org.axonframework.serialization.SerializedType	SerializedType	[Type, File, Java, ByteCode, Interface, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0...	28
11	org.axonframework.messaging.unitofwork.CurrentUnitOfWork	CurrentUnitOfWork	[Type, File, Java, ByteCode, Class, Mark4TopCentralityBetweenness, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity1, Mark4TypeLeidenCommunity10, Mark4TypeKCoreDecomposition10]	22
12	org.axonframework.common.Registration	Registration	[Type, File, Java, ByteCode, Interface, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity5, M...	22
13	org.axonframework.tracing.SpanFactory	SpanFactory	[Type, File, Java, ByteCode, Interface, Mark4TopCentralityArticleRank, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity1, Mark4TypeLeidenCommunity1, ...	22
14	org.axonframework.lifecycle.Lifecycle	Lifecycle	[Type, File, Java, ByteCode, Interface, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity0, Mark4TypeLeidenCommunity0, Mark4TypeKCoreDecomposition10]	20
15	org.axonframework.lifecycle.Lifecycle$LifecycleRegistry	Lifecycle$LifecycleRegistry	[Type, File, Java, ByteCode, Interface, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity0, Mark4TypeLeidenCommunity0, Mark4TypeKCoreDecomposition10]	20
16	org.axonframework.messaging.MessageHandlerInterceptor	MessageHandlerInterceptor	[Type, File, Java, ByteCode, GenericDeclaration, Interface, Mark4TopCentralityBetweenness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity0, Mark4Ty...	20
17	org.axonframework.common.ObjectUtils	ObjectUtils	[Type, File, Java, ByteCode, Class, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity4, Mark4TypeLeidenCommunity6, Mark4TypeKCoreDecomposition10]	20
18	org.axonframework.eventhandling.TrackingToken	TrackingToken	[Type, File, Java, ByteCode, Interface, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0...	20
19	org.axonframework.eventhandling.DomainEventMessage	DomainEventMessage	[Type, File, Java, ByteCode, GenericDeclaration, Interface, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4Ty...	19
20	org.axonframework.messaging.MessageDispatchInterceptor	MessageDispatchInterceptor	[Type, File, Java, ByteCode, GenericDeclaration, Interface, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity9, Mark4TypeLeidenCommunity3, Mark4TypeKC...	19
21	org.axonframework.messaging.annotation.ParameterResolverFactory	ParameterResolverFactory	[Type, File, Java, ByteCode, Interface, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity2, Mark4TypeLeidenCommunity2, Mark4TypeKCoreDecomposition10]	19
22	org.axonframework.serialization.SimpleSerializedObject	SimpleSerializedObject	[Type, File, Java, ByteCode, GenericDeclaration, Class, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity10, Mark4TypeLeidenCommunity5, Mark4TypeKCoreDecomposition10, Mark4TypeMaximumKCut0.125]	19
23	org.axonframework.common.AxonNonTransientException	AxonNonTransientException	[Type, File, Java, ByteCode, Class, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity3, Mark4TypeLeidenCommunity9, Mark4TypeKCoreDecompositi...	18
24	org.axonframework.eventhandling.GenericEventMessage	GenericEventMessage	[Type, File, Java, ByteCode, GenericDeclaration, Class, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity6, Mark4TypeLeidenCommunity10, Mark4TypeKCore...	18
25	org.axonframework.commandhandling.CommandMessage	CommandMessage	[Type, File, Java, ByteCode, GenericDeclaration, Interface, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeakl...	17
26	org.axonframework.tracing.NoOpSpanFactory	NoOpSpanFactory	[Type, File, Java, ByteCode, Class, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity1, Mark4TypeLeidenCommunity1, Mark4TypeKCoreDecomposition10]	17
27	org.axonframework.eventhandling.EventBus	EventBus	[Type, File, Java, ByteCode, Interface, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity3, Mark4TypeLeidenCommunity9, Mark4TypeKCoreDecomposition10]	15
28	org.axonframework.messaging.annotation.HandlerDefinition	HandlerDefinition	[Type, File, Java, ByteCode, Interface, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity2, Mark4TypeLeidenCommunity2, Mark4TypeKCoreDecomposition10]	15
29	org.axonframework.common.transaction.NoTransactionManager	NoTransactionManager	[Type, File, Java, ByteCode, Enum, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity0, Mark4TypeLeidenCommunity0, Mark4TypeKCoreDecomposition10, Mark4TypeMaximumKCut0.142857142857142857]	15
30	org.axonframework.messaging.ResultMessage	ResultMessage	[Type, File, Java, ByteCode, GenericDeclaration, Interface, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityBetweenness, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity...	15
31	org.axonframework.tracing.Span	Span	[Type, File, Java, ByteCode, Interface, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity1,...	15
32	org.axonframework.messaging.unitofwork.DefaultUnitOfWork	DefaultUnitOfWork	[Type, File, Java, ByteCode, GenericDeclaration, Class, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity1, Mark4TypeLeidenCommunity10, Mark4TypeKCoreDecomposition10]	14
33	org.axonframework.common.ReflectionUtils	ReflectionUtils	[Type, File, Java, ByteCode, Class, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity2, Mark4TypeLeidenCommunity2, Mark4TypeKCoreDecomposition7]	14
34	org.axonframework.messaging.InterceptorChain	InterceptorChain	[Type, File, Java, ByteCode, Interface, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity1, Mark4TypeLeidenCommunity10, Mark4TypeKCoreDecomposition10, Mark4TypeMaximumKCut0.1038961038961039]	13

	fullQualifiedDependentTypeName	dependentTypeName	dependentTypeLabels	numberOfUsingPackages
35	org.axonframework.eventhandling.TrackedEventMessage	TrackedEventMessage	[Type, File, Java, ByteCode, GenericDeclaration, Interface, Mark4TopCentralityArticleRank, Mark4TopCentralityHyperlinkInducedTopicSearchAuthority, Mark4TopCentralityHyperlinkInducedTopicSearchHub, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity8, Mark4Ty...	13
36	org.axonframework.common.AxonException	AxonException	[Type, File, Java, ByteCode, Class, Mark4TopCentralityPageRank, Mark4TopCentralityArticleRank, Mark4TopCentralityHarmonic, Mark4TopCentralityCloseness, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation30, Mark4TypeLouvainCommunity18, Mark4TypeLeidenCommunity18, Mark4TypeKCoreDecompos...	12
37	org.axonframework.common.DateTimeUtils	DateTimeUtils	[Type, File, Java, ByteCode, Class, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity4, Mark4TypeLeidenCommunity6, Mark4TypeKCoreDecomposition8]	12
38	org.axonframework.messaging.DefaultInterceptorChain	DefaultInterceptorChain	[Type, File, Java, ByteCode, GenericDeclaration, Class, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity5, Mark4TypeLeidenCommunity0, Mark4TypeKCoreDecomposition10]	12
39	org.axonframework.eventhandling.GenericDomainEventMessage	GenericDomainEventMessage	[Type, File, Java, ByteCode, GenericDeclaration, Class, Mark4TypeWeaklyConnectedComponent0, Mark4TypeLabelPropagation0, Mark4TypeLouvainCommunity6, Mark4TypeLeidenCommunity10, Mark4TypeKCoreDecomposition10, Mark4TypeMaximumKCut0.2727272727272727]	12

Table 6 - Packages that are used by multiple artifacts

This table shows the top 30 artifacts that only use a few (compared to all existing) packages of another artifact. The whole table can be found in the CSV report `ArtifactPackageUsage`.

	artifactName	dependentArtifactName	dependentPackages	dependentArtifactPackages	packageUsagePercentage	dependentFullQualifiedPackageNames	dependentPackageNames
0	axon-tracing-opentelemetry-4.11.1	axon-messaging-4.11.1	3	66	0.045455	[org.axonframework.tracing, org.axonframework.common, org.axonframework.messaging]	[tracing, common, messaging]
1	axon-server-connector-4.11.1	axon-modelling-4.11.1	1	10	0.100000	[org.axonframework.modelling.command]	[command]
2	axon-spring-boot-autoconfigure-4.11.1	axon-test-4.11.1	1	8	0.125000	[org.axonframework.test.server]	[server]
3	axon-disruptor-4.11.1	axon-messaging-4.11.1	9	66	0.136364	[org.axonframework.messaging.unitofwork, org.axonframework.common.caching, org.axonframework.messaging, org.axonframework.commandhandling, org.axonframework.common, org.axonframework.monitoring, org.axonframework.commandhandling.callbacks, org.axonframework.common.transaction, org.axonframework....	[unitofwork, caching, messaging, commandhandling, common, monitoring, callbacks, transaction, annotation]
4	axon-test-4.11.1	axon-messaging-4.11.1	10	66	0.151515	[org.axonframework.common, org.axonframework.eventhandling, org.axonframework.eventhandling.scheduling, org.axonframework.messaging.annotation, org.axonframework.deadline, org.axonframework.commandhandling, org.axonframework.messaging, org.axonframework.messaging.unitofwork, org.axonframework.co...	[common, eventhandling, scheduling, annotation, deadline, commandhandling, messaging, unitofwork, gateway, stream]
5	axon-eventsourcing-4.11.1	axon-modelling-4.11.1	2	10	0.200000	[org.axonframework.modelling.command, org.axonframework.modelling.command.inspection]	[command, inspection]
6	axon-disruptor-4.11.1	axon-modelling-4.11.1	2	10	0.200000	[org.axonframework.modelling.command, org.axonframework.modelling.command.inspection]	[command, inspection]
7	axon-disruptor-4.11.1	axon-eventsourcing-4.11.1	2	9	0.222222	[org.axonframework.eventsourcing, org.axonframework.eventsourcing.eventstore]	[eventsourcing, eventstore]
8	axon-test-4.11.1	axon-eventsourcing-4.11.1	2	9	0.222222	[org.axonframework.eventsourcing, org.axonframework.eventsourcing.eventstore]	[eventsourcing, eventstore]
9	axon-modelling-4.11.1	axon-messaging-4.11.1	18	66	0.272727	[org.axonframework.eventhandling, org.axonframework.messaging.annotation, org.axonframework.messaging.unitofwork, org.axonframework.common.lock, org.axonframework.common.caching, org.axonframework.common, org.axonframework.serialization, org.axonframework.common.legacyjpa, org.axonframework.seri...	[eventhandling, annotation, unitofwork, lock, caching, common, serialization, legacyjpa, xml, interceptors, messaging, tracing, commandhandling, jpa, deadline, property, jdbc]
10	axon-eventsourcing-4.11.1	axon-messaging-4.11.1	20	66	0.303030	[org.axonframework.common, org.axonframework.serialization, org.axonframework.eventhandling, org.axonframework.common.jdbc, org.axonframework.tracing, org.axonframework.common.stream, org.axonframework.common.io, org.axonframework.messaging, org.axonframework.serialization.xml, org.axonframework...	[common, serialization, eventhandling, jdbc, tracing, stream, io, messaging, xml, monitoring, lifecycle, event, jpa, transaction, unitofwork, legacyjpa, commandhandling, annotation, caching, lock]
11	axon-server-connector-4.11.1	axon-eventsourcing-4.11.1	3	9	0.333333	[org.axonframework.eventsourcing.eventstore, org.axonframework.eventsourcing, org.axonframework.eventsourcing.snapshotting]	[eventstore, eventsourcing, snapshotting]
12	axon-spring-boot-autoconfigure-4.11.1	axon-server-connector-4.11.1	4	11	0.363636	[org.axonframework.axonserver.connector, org.axonframework.axonserver.connector.event.axon, org.axonframework.axonserver.connector.command, org.axonframework.axonserver.connector.query]	[connector, axon, command, query]
13	axon-server-connector-4.11.1	axon-messaging-4.11.1	25	66	0.378788	[org.axonframework.eventhandling, org.axonframework.eventhandling.pooled, org.axonframework.common.transaction, org.axonframework.eventhandling.tokenstore, org.axonframework.lifecycle, org.axonframework.messaging, org.axonframework.serialization, org.axonframework.queryhandling, org.axonframewor...	[eventhandling, pooled, transaction, tokenstore, lifecycle, messaging, serialization, queryhandling, tracing, responsetypes, common, util, event, xml, unitofwork, jdbc, monitoring, stream, java, scheduling, async, commandhandling, distributed, inmemory, callbacks]
14	axon-configuration-4.11.1	axon-eventsourcing-4.11.1	4	9	0.444444	[org.axonframework.eventsourcing.eventstore.jpa, org.axonframework.eventsourcing.eventstore, org.axonframework.eventsourcing.snapshotting, org.axonframework.eventsourcing]	[jpa, eventstore, snapshotting, eventsourcing]
15	axon-test-4.11.1	axon-modelling-4.11.1	5	10	0.500000	[org.axonframework.modelling.saga.repository.inmemory, org.axonframework.modelling.saga.repository, org.axonframework.modelling.saga, org.axonframework.modelling.command.inspection, org.axonframework.modelling.command]	[inmemory, repository, saga, inspection, command]
16	axon-configuration-4.11.1	axon-messaging-4.11.1	34	66	0.515152	[org.axonframework.eventhandling.deadletter, org.axonframework.queryhandling.annotation, org.axonframework.messaging.annotation, org.axonframework.commandhandling, org.axonframework.eventhandling.tokenstore.inmemory, org.axonframework.eventhandling.scheduling, org.axonframework.serialization.upc...	[deadletter, annotation, commandhandling, inmemory, scheduling, event, common, gateway, correlation, interceptors, queryhandling, util, jdbc, eventhandling, lifecycle, serialization, tokenstore, xml, jpa, transaction, async, pooled, unitofwork, monitoring, caching, lock, tracing, messaging, dead...
17	axon-spring-boot-autoconfigure-4.11.1	axon-eventsourcing-4.11.1	5	9	0.555556	[org.axonframework.eventsourcing.eventstore, org.axonframework.eventsourcing.eventstore.legacyjpa, org.axonframework.eventsourcing.eventstore.jdbc, org.axonframework.eventsourcing.eventstore.jpa, org.axonframework.eventsourcing]	[eventstore, legacyjpa, jdbc, jpa, eventsourcing]
18	axon-spring-boot-autoconfigure-4.11.1	axon-modelling-4.11.1	6	10	0.600000	[org.axonframework.modelling.saga.repository, org.axonframework.modelling.saga.repository.legacyjpa, org.axonframework.modelling.saga.repository.jdbc, org.axonframework.modelling.command, org.axonframework.modelling.saga.repository.jpa, org.axonframework.modelling.saga]	[repository, legacyjpa, jdbc, command, jpa, saga]
19	axon-configuration-4.11.1	axon-modelling-4.11.1	6	10	0.600000	[org.axonframework.modelling.command, org.axonframework.modelling.command.inspection, org.axonframework.modelling.saga.repository, org.axonframework.modelling.saga.repository.inmemory, org.axonframework.modelling.saga.repository.jpa, org.axonframework.modelling.saga]	[command, inspection, repository, inmemory, jpa, saga]
20	axon-modelling-4.11.1	axon-modelling-4.11.1	6	10	0.600000	[org.axonframework.modelling.saga, org.axonframework.modelling.saga.metamodel, org.axonframework.modelling.saga.repository.jpa, org.axonframework.modelling.saga.repository, org.axonframework.modelling.command.inspection, org.axonframework.modelling.command]	[saga, metamodel, jpa, repository, inspection, command]
21	axon-spring-boot-autoconfigure-4.11.1	axon-messaging-4.11.1	41	66	0.621212	[org.axonframework.messaging.deadletter, org.axonframework.eventhandling, org.axonframework.common.legacyjpa, org.axonframework.serialization, org.axonframework.eventhandling.tokenstore, org.axonframework.common.transaction, org.axonframework.common.jdbc, org.axonframework.eventhandling.tokensto...	[deadletter, eventhandling, legacyjpa, serialization, tokenstore, transaction, jdbc, timeout, jpa, attributes, common, tracing, avro, messaging, json, commandhandling, lifecycle, correlation, interceptors, jobrunr, queryhandling, event, pooled, xml, gateway, deadline, scheduling, dbscheduler, as...
22	axon-messaging-4.11.1	axon-messaging-4.11.1	41	66	0.621212	[org.axonframework.messaging, org.axonframework.messaging.unitofwork, org.axonframework.eventhandling, org.axonframework.deadline, org.axonframework.common, org.axonframework.queryhandling, org.axonframework.commandhandling, org.axonframework.messaging.annotation, org.axonframework.serialization...	[messaging, unitofwork, eventhandling, deadline, common, queryhandling, commandhandling, annotation, serialization, stream, util, lifecycle, transaction, scheduling, jobrunr, upcasting, responsetypes, monitoring, interceptors, registration, tracing, tokenstore, distributed, callbacks, commandfil...
23	axon-test-4.11.1	axon-test-4.11.1	5	8	0.625000	[org.axonframework.test, org.axonframework.test.eventscheduler, org.axonframework.test.utils, org.axonframework.test.matchers, org.axonframework.test.deadline]	[test, eventscheduler, utils, matchers, deadline]
24	axon-eventsourcing-4.11.1	axon-eventsourcing-4.11.1	7	9	0.777778	[org.axonframework.eventsourcing.eventstore.jdbc, org.axonframework.eventsourcing.snapshotting, org.axonframework.eventsourcing, org.axonframework.eventsourcing.eventstore, org.axonframework.eventsourcing.eventstore.jdbc.statements, org.axonframework.eventsourcing.eventstore.jpa, org.axonframewo...	[jdbc, snapshotting, eventsourcing, eventstore, statements, jpa, conflictresolution]
25	axon-server-connector-4.11.1	axon-server-connector-4.11.1	9	11	0.818182	[org.axonframework.axonserver.connector, org.axonframework.axonserver.connector.event.util, org.axonframework.axonserver.connector.query, org.axonframework.axonserver.connector.util,	[connector, util, query, command, subscription, processor, axon, heartbeat]

	artifactName	dependentArtifactName	dependentPackages	dependentArtifactPackages	packageUsagePercentage	dependentFullQualifiedPackageNames	dependentPackageNames
						org.axonframework.axonserver.connector.command, org.axonframework.axonserver.connector.query.subscription, org.ax...	
26	axon-spring-boot-autoconfigure-4.11.1	axon-spring-boot-autoconfigure-4.11.1	8	9	0.888889	[org.axonframework.springboot, org.axonframework.actuator, org.axonframework.springboot.util.legacyjpa, org.axonframework.springboot.autoconfig, org.axonframework.springboot.util, org.axonframework.actuator.axonserver, org.axonframework.springboot.util.jpa, org.axonframework.springboot.service.c...	[springboot, actuator, legacyjpa, autoconfig, util, axonserver, jpa, connection]
27	axon-spring-boot-autoconfigure-4.11.1	axon-tracing-opentelemetry-4.11.1	1	1	1.000000	[org.axonframework.tracing.opentelemetry]	[opentelemetry]
28	axon-configuration-4.11.1	axon-disruptor-4.11.1	1	1	1.000000	[org.axonframework.disruptor.commandhandling]	[commandhandling]
29	axon-server-connector-4.11.1	axon-configuration-4.11.1	1	1	1.000000	[org.axonframework.config]	[config]

Table 7 - Types that are used by multiple artifacts

This table shows the top 30 types that only use a few (compared to all existing) types of another artifact. The whole table can be found in the CSV report `ClassesPerPackageUsageAcrossArtifacts`.

	artifactName	dependentArtifactName	packageName	dependentPackage.fqn	dependentTypes	dependentPackageTypes	typeUsagePercentage	
0	axon-eventsourcing-4.11.1	axon-messaging-4.11.1	org.axonframework.eventsourcing.snapshotting	org.axonframework.eventhandling	1	100	0.010000	
1	axon-server-connector-4.11.1	axon-messaging-4.11.1	org.axonframework.axonserver.connector	org.axonframework.eventhandling	1	100	0.010000	
2	axon-spring-boot-autoconfigure-4.11.1	axon-messaging-4.11.1	org.axonframework.springboot.autoconfig.legacyjpa	org.axonframework.eventhandling	1	100	0.010000	
3	axon-test-4.11.1	axon-messaging-4.11.1	org.axonframework.test.matchers	org.axonframework.eventhandling	1	100	0.010000	
4	axon-modelling-4.11.1	axon-messaging-4.11.1	org.axonframework.modelling.saga.metamodel	org.axonframework.eventhandling	1	100	0.010000	
5	axon-spring-boot-autoconfigure-4.11.1	axon-messaging-4.11.1	org.axonframework.springboot.util	org.axonframework.eventhandling	1	100	0.010000	
6	axon-eventsourcing-4.11.1	axon-modelling-4.11.1	org.axonframework.eventsourcing.conflictresolution	org.axonframework.modelling.command	1	56	0.017857	[org.axonframew
7	axon-server-connector-4.11.1	axon-modelling-4.11.1	org.axonframework.axonserver.connector	org.axonframework.modelling.command	1	56	0.017857	[
8	axon-eventsourcing-4.11.1	axon-modelling-4.11.1	org.axonframework.eventsourcing.eventstore.jdbc	org.axonframework.modelling.command	1	56	0.017857	[
9	axon-test-4.11.1	axon-messaging-4.11.1	org.axonframework.test.eventscheduler	org.axonframework.eventhandling	2	100	0.020000	
10	axon-eventsourcing-4.11.1	axon-messaging-4.11.1	org.axonframework.eventsourcing.conflictresolution	org.axonframework.eventhandling	2	100	0.020000	
11	axon-modelling-4.11.1	axon-messaging-4.11.1	org.axonframework.modelling.command.legacyjpa	org.axonframework.eventhandling	2	100	0.020000	o
12	axon-modelling-4.11.1	axon-messaging-4.11.1	org.axonframework.modelling.command	org.axonframework.eventhandling	2	100	0.020000	o
13	axon-server-connector-4.11.1	axon-eventsourcing-4.11.1	org.axonframework.axonserver.connector.event.axon	org.axonframework.eventsourcing	1	42	0.023810	
14	axon-spring-boot-autoconfigure-4.11.1	axon-configuration-4.11.1	org.axonframework.springboot.autoconfig.legacyjpa	org.axonframework.config	1	41	0.024390	
15	axon-spring-boot-autoconfigure-4.11.1	axon-configuration-4.11.1	org.axonframework.springboot	org.axonframework.config	1	41	0.024390	
16	axon-server-connector-4.11.1	axon-configuration-4.11.1	org.axonframework.axonserver.connector.processor	org.axonframework.config	1	41	0.024390	
17	axon-eventsourcing-4.11.1	axon-messaging-4.11.1	org.axonframework.eventsourcing.conflictresolution	org.axonframework.messaging	1	35	0.028571	
18	axon-test-4.11.1	axon-messaging-4.11.1	org.axonframework.test	org.axonframework.messaging	1	35	0.028571	
19	axon-eventsourcing-4.11.1	axon-messaging-4.11.1	org.axonframework.eventsourcing.eventstore	org.axonframework.messaging	1	35	0.028571	
20	axon-test-4.11.1	axon-messaging-4.11.1	org.axonframework.test.matchers	org.axonframework.messaging	1	35	0.028571	
21	axon-eventsourcing-4.11.1	axon-messaging-4.11.1	org.axonframework.eventsourcing.eventstore.jdbc	org.axonframework.serialization	1	34	0.029412	
22	axon-spring-boot-autoconfigure-4.11.1	axon-messaging-4.11.1	org.axonframework.springboot.autoconfig.legacyjpa	org.axonframework.serialization	1	34	0.029412	
23	axon-eventsourcing-4.11.1	axon-messaging-4.11.1	org.axonframework.eventsourcing.eventstore.legacyjpa	org.axonframework.serialization	1	34	0.029412	
24	axon-eventsourcing-4.11.1	axon-messaging-4.11.1	org.axonframework.eventsourcing.eventstore.jpa	org.axonframework.serialization	1	34	0.029412	
25	axon-eventsourcing-4.11.1	axon-messaging-4.11.1	org.axonframework.eventsourcing.eventstore.jdbc.statements	org.axonframework.eventhandling	3	100	0.030000	o
26	axon-test-4.11.1	axon-modelling-4.11.1	org.axonframework.test.utils	org.axonframework.modelling.saga	1	33	0.030303	
27	axon-test-4.11.1	axon-messaging-4.11.1	org.axonframework.test.matchers	org.axonframework.commandhandling	1	32	0.031250	
28	axon-eventsourcing-4.11.1	axon-messaging-4.11.1	org.axonframework.eventsourcing.conflictresolution	org.axonframework.commandhandling	1	32	0.031250	
29	axon-server-connector-4.11.1	axon-eventsourcing-4.11.1	org.axonframework.axonserver.connector	org.axonframework.eventsourcing.eventstore	1	31	0.032258	[org.

Table 8 - Duplicate package names across artifacts

This table shows the top 30 duplicate package names across artifacts. They are ordered by the number of duplicates descending.

This might lead to confusion, makes importing more error prone and might even lead to duplicate classes where only one of them will be loaded by the class loader. If a package is named the same way in two or more artifacts this even allows another artifact to access package protected classes, methods or members which might not be intended.

The whole table can be found in the CSV report `DuplicatePackageNamesAcrossArtifacts`.

packageName	duplicates	artifactNames

Table 9 - Annotated elements

This table shows 30 most used Java Annotations including some examples where they are used.

	annotationName	languageElement	numberOfAnnotatedElements	
0	javax.annotation.Nonnull	Parameter	1668	[org.axonframework.config.Configuration.getComponent(0), org.axonframework.config.Configuration.getCon org.axonframework.config.Component.<init>(0), org.axonframework.config.Componen org.axonframework.config.Component.<init>(2), org.axonframework.config.Component.u
1	java.lang.Deprecated	Method	133	[org.axonframework.config.Configurer.registerCommandHandler, org.axonframework.config.Configurer.registerQu org.axonframework.config.ModuleConfiguration.phase, org.axonframework.config.ModuleConfigu org.axonframework.config.ModuleConfiguration.shutdown, org.axonfra
2	org.springframework.context.annotation.Bean	Method	122	[org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxEventStoreAutoConfiguration.eventStor org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxAutoConfiguration.entityManag org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxAutoConfiguration.toke
3	org.springframework.boot.autoconfigure.condition.ConditionalOnMissingBean	Method	78	[org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxAutoConfiguration.entityManag org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxAutoConfiguration. org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxAutoConfiguration.sagaStore, org.axonfram
4	java.lang.FunctionalInterface	Interface	65	[org.axonframework.config.EventProcessing $DeadLetteringInvokerConfiguration, org.axonframework.config.EventProcessingC$ EventProcessorBuilder, org.axonframework.config.EventProcessingConfigurer$PooledStreamingProcessorCo org.axonframework.config.MessageMon
5	javax.annotation.Nullable	Parameter	62	[org.axonframework.modelling.command.CreationPolicyAggregateFactor org.axonframework.modelling.command.NoArgumentConstructorCreationPolicyAggregateFactor org.axonframework.modelling.command.Reposit org.axonframework.modelling.command.inspection.ChildFa
6	javax.annotation.Nonnull	Method	60	[org.axonframework.springboot.util.legacyjpa.ContainerManagedEntityManagerProvider.getEnti org.axonframework.springboot.util.AbstractQualifiedBeanCondition.getConfigur org.axonframework.springboot.util.jpa.ContainerManagedEntityManagerProvider.getEntityManager, org.a
7	java.lang.annotation.Retention	Annotation	44	[org.axonframework.config.ProcessingGroup, org.axonframework.springboot.util.RegisterDefa org.axonframework.springboot.util.ConditionalOnMissingQua org.axonframework.springboot.util.ConditionalOnQua org.axonframework.modelling.command.CommandHandlerInt
8	java.lang.annotation.Target	Annotation	44	[org.axonframework.config.ProcessingGroup, org.axonframework.springboot.util.RegisterDefa org.axonframework.springboot.util.ConditionalOnMissingQua org.axonframework.springboot.util.ConditionalOnQua org.axonframework.modelling.command.CommandHandlerInt
9	java.lang.Deprecated	Class	43	[org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxEventStoreAutoCo org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxAutoCo org.axonframework.springboot.util.legacyjpa.ContainerManagedEntityManag org.axonframework.axonserver.connector.l
10	javax.persistence.Basic	Field	39	[org.axonframework.modelling.saga.repository.jpa.AbstractSagaEntr org.axonframework.modelling.saga.repository.jpa.AbstractSagaEn org.axonframework.modelling.saga.repository.jpa.AssociationValueE org.axonframework.modelling.saga.repository.jpa.Associat
11	jakarta.persistence.Basic	Field	33	[org.axonframework.modelling.saga.repository.jpa.AssociationValueE org.axonframework.modelling.saga.repository.jpa.AssociationValueEntry.asso org.axonframework.modelling.saga.repository.jpa.AssociationValueEntry.assoc org.axonframework.modelling.saga.
12	com.fasterxml.jackson.annotation.JsonProperty	Parameter	32	[org.axonframework.modelling.command.AggregateScopeDescripto org.axonframework.modelling.command.AggregateScopeDescripto org.axonframework.modelling.saga.SagaScopeDescriptor.<init>(0), org.axonframework.modelling.saga.SagaScope <init>(1), org.axonframewor
13	org.springframework.boot.autoconfigure.AutoConfiguration	Class	26	[org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxEventStoreAutoCo org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxAutoCo org.axonframework.springboot.autoconfig.AxonTimeoutAutoCo org.axonframework.springboot.autoconfig.AvroSerialize
14	java.lang.annotation.Documented	Annotation	24	[org.axonframework.config.ProcessingGroup, org.axonframework.springboot.util.ConditionalOnMissingQua org.axonframework.springboot.util.ConditionalOnQua org.axonframework.modelling.command.CommandHandler org.axonframework.modelling.command.CreationPolic
15	java.beans.ConstructorProperties	Constructor	21	[org.axonframework.modelling.command.AggregateScopeDescri org.axonframework.modelling.saga.SagaScopeDescri org.axonframework.commandhandling.distributed.commandfilter.AndCommandMessageF org.axonframework.commandhandling.distributed.commandfilter.NegateC
16	org.springframework.beans.factory.annotation.Qualifier	Parameter	20	[org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxEventStoreAutoConfiguration.eventStorag org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxAutoConfiguration.deadLetterQueueProviderConfigure org.axonframework.springboot.autoconfig.AxonDbSchedulerAu
17	java.lang.Deprecated	Constructor	20	[org.axonframework.axonserver.connector.processor.EventProcessorControlSer org.axonframework.axonserver.connector.query.subscription.AxonServerSubscriptionQueryRe org.axonframework.modelling.command.AnnotationCommandTargetResolver.<init>, org.axonframework.modellin
18	org.springframework.boot.autoconfigure.AutoConfigureAfter	Class	17	[org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxEventStoreAutoCo org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxAutoCo org.axonframework.springboot.autoconfig.AxonDbSchedulerAutoCo org.axonframework.springboot.autoconfig.JpaEvent
19	com.fasterxml.jackson.annotation.JsonCreator	Constructor	16	[org.axonframework.modelling.command.AggregateScopeDescri org.axonframework.modelling.saga.SagaScopeDescriptor.<init>, org.axonframework.eventhandling.GapAwareTra <init>, org.axonframework.eventhandling.GlobalSequenceTrackingToken.<init>, org.axonframework.eventhar
20	org.springframework.boot.autoconfigure.condition.ConditionalOnClass	Class	15	[org.axonframework.springboot.autoconfig.AvroSerializerAutoCo org.axonframework.springboot.autoconfig.InterceptorAutoCo org.axonframework.springboot.autoconfig.MetricsAutoCo org.axonframework.springboot.autoconfig.ObjectMapperAutoConfiguration, org.axo
21	org.springframework.boot.autoconfigure.condition.ConditionalOnProperty	Method	15	[org.axonframework.springboot.autoconfig.AxonTracingAutoConfiguration.aggregateIdentifierSpanAttribut org.axonframework.springboot.autoconfig.AxonTracingAutoConfiguration.messageIdSpanAttribut org.axonframework.springboot.autoconfig.AxonTracingAutoConfiguration.messa
22	org.springframework.boot.autoconfigure.condition.ConditionalOnBean	Method	15	[org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxAutoConfiguration.persistenceExcepti org.axonframework.springboot.autoconfig.InterceptorAutoConfiguration.commandDispatchInterceptor org.axonframework.springboot.autoconfig.InterceptorAutoConfiguration.even
23	org.springframework.boot.autoconfigure.AutoConfigureBefore	Class	15	[org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxEventStoreAutoCo org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxAutoCo org.axonframework.springboot.autoconfig.AvroSerializerAutoCo org.axonframework.springboot.autoconfig.JpaEventSt
24	org.springframework.boot.context.properties.EnableConfigurationProperties	Class	12	[org.axonframework.springboot.autoconfig.legacyjpa.JpaJavaxAutoCo org.axonframework.springboot.autoconfig.AxonTimeoutAutoCo org.axonframework.springboot.autoconfig.AxonAutoCo org.axonframework.springboot.autoconfig.JpaAutoConfiguration, org.axonframev
25	javax.persistence.Column	Field	12	[org.axonframework.modelling.saga.repository.jpa.AbstractSagaEntry.seri org.axonframework.modelling.saga.repository.jpa.SagaEntry.seri org.axonframework.eventhandling.AbstractEventEntry.eve org.axonframework.eventhandling.AbstractEventEntry.payload, or
26	jakarta.persistence.Column	Field	11	[org.axonframework.modelling.saga.repository.jpa.SagaEntry.seri org.axonframework.eventhandling.AbstractEventEntry.eve org.axonframework.eventhandling.AbstractEventEn org.axonframework.eventhandling.AbstractEventEntry.metaData, org.axonframework.event
27	org.axonframework.common.Priority	Class	11	[org.axonframework.config.ConfigurationParameterReso org.axonframework.test.FixtureResourceParameterReso org.axonframework.commandhandling.CurrentUnitOfWorkParameterReso org.axonframework.eventhandling.SequenceNumberParameterResolverFactory, org.axonfra
28	org.springframework.boot.autoconfigure.condition.ConditionalOnProperty	Class	10	[org.axonframework.springboot.autoconfig.AxonTimeoutAutoCo org.axonframework.springboot.autoconfig.XStreamAutoConfiguration$XStreamConfiguredC$ EventsXStreamCondition, org.axonframework.springboot.autoconfig.XStreamAutoCo $XStreamConfiguredCondition$GeneralD
29	javax.persistence.Id	Field	10	[org.axonframework.modelling.saga.repository.jpa.AbstractSagaE org.axonframework.modelling.saga.repository.jpa.AssociationVa org.axonframework.modelling.saga.repository.jpa.SagaE org.axonframework.eventsourcing.eventstore.AbstractSnapshotEventEntry.ag

Table 10 - Distance distribution between dependent files

This table shows the file directory distance distribution between dependent files. Intuitively, the distance is given by the fewest number of change directory commands needed to navigate between a file and a dependency it uses. Those are aggregate to see how many dependent files are in the same directory, how many are just one change directory command apart, and so on.

	dependency.fileDistanceAsFewestChangeDirectoryCommands	numberOfDependencies	numberOfDependencyUsers	numberOfDependencyProviders	example
0	0	2685	1062	1195	[/axon-server-connector-4.11.1.jar uses /axon-configuration-4.11.1.jar, /axo spring-boot-autoconfigure-4.11.1.jar uses /axon-configuration-4.11.1.ja /org/axonframework/config/AggregateConfiguration.class us /org/axonframework/config/ModuleConfiguration.clas /org/axonframework/config/Axonl
1	1	92	84	38	[/org/axonframework/actuator/axonserver uses /org/axonframework/actuato /org/axonframework/springboot/util uses /org/axonframework/springboo /org/axonframework/springboot/autoconfig uses /org/axonframework/springboo /org/axonframework/springboot/autoconfig/legacyjpa uses /org/axonframework
2	2	2559	778	477	[/org/axonframework/springboot/autoconfig us /org/axonframework/actuator/axonserve /org/axonframework/springboot/autoconfig/legacyjpa us /org/axonframework/springboot, /org/axonframework/springboot/autoconfig us /org/axonframework/springboot/service/connection, /org/axonframework/springb
3	4	2631	456	550	[/org/axonframework/axonserver/connector/heartbeat/HeartbeatConfiguration.cla uses /org/axonframework/config/ModuleConfiguration.clas /org/axonframework/springboot/autoconfig/InfraConfiguration.class us /org/axonframework/config/ModuleConfiguration.clas /org/axonframework/axonserver/conn