Axon Framework - Application Configuration Cheat Sheet

by VJ (practicalddd) via cheatography.com/119761/cs/21889/

Axon Framework - Application Configuration Guide

The configuration guide covers the possible configuration areas for your Axon application when you utilize the Axon Server (Standard Edition / Enterprise Edition)

- Axon Application General Configuration
- Axon Application Serialization Configuration
- Axon Application Event Processing Configuration

Each individual list is split into two sections. The first section gives a list of all the possible configurations. The second section gives a recommendation against the configurations to enable developers/operators/administrators to optimize their Axon Application Deployment

Axon Application General Configuration

A group of properties that allows easy general configuration for Axon Framework based Applications that connect to an Axon Server *(Standard / Enterprise / SaaS)*

Parameter List (prefix = axon.axonserver)

Name	Description
enabled	Determines automatic configuration of the Axon Server connector
servers	Comma Separated list of Axon Server instances in format {{hostname}} or {{hostname}}:{{grpc_port}}.
clientId	Unique identifier for the Axon Application as it registers with an Axon Server
componentName	Name for the Axon Application
token	Token for access control to the Axon Server
context	Operational Bounded Context for the Axon Application
sslEnabled	Flag to enable SSL connectivity to the Axon Server
certFile	Certificate file for SSL
initialNrOfPermits	Initial number of permits that an Axon Application can accept for message streams (events, commands, queries)
nrOfNewPermits	Additional number of permits that an Axon Application can accept for message streams (events, commands, queries)
newPermitsThreshold	Threshold at which application sends new permits to server
commandThreads	Number of threads executing commands
queryThreads	Number of threads executing queries
processorsNotificationRate	Interval (in ms.) application sends status updates on event processors to AxonServer
processorsNotificationInitialDelay	Initial delay (in ms.) before application sends first status update on event processors to AxonServer
eventCipher	Used to encrypt and decrypt events and snapshots
keepAliveTimeout	Timeout (in ms) for keep alive requests
keepAliveTime	Interval (in ms) for keep alive requests, 0 is keep-alive disabled. Defaults to {@code 1000}.

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Parameter List (prefix = axon.axonserver) (cont)	
snapshotPrefetch	Value indicating the maximum number of Aggregate snapshots which will be retrieved.
maxMessageSize	Grpc max inbound message size
commitTimeout	Timeout (in milliseconds) to wait for response on commit
disableEventBlacklisting	Flag that allows blacklisting of Event types to be disabled
maxGrpcBufferedMessages	The number of messages that may be in-transit on the network/grpc level when streaming data from the server
commandLoadFactor	It represents the fixed value of load factor sent to Axon Server for any command's subscription if no specific implementation of CommandLoadFactorProvider is configured
connectTimeout	Represents the maximum time in milliseconds a request for the initial Axon Server connection may last

Value Recommendations (prefix = "axon.axonserver")		
Name	**Default Value**	**Recommendation**
enabled	true	Recommended to retain the default value. Also this value kicks in only when using automatic configuration via Application Containers
servers	localhost	In Axon SE, the single node hostname needs to be supplied. In Axon EE (cluster deployment), input the name of the designated leader among the nodes.
componentName	{{spring.application.name}}	Recommended to provide a business name for the Axon application. Multiple instances of the same Axon application will have the same application name
clientid	{{ManagementFactory.getRuntimeMXBean().getName()}}	The client identifier for an Axon application has to be unique for every instance of that Axon application connecting to an Axon Server. Recommended to retain the default value as it creates a unique identifier

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Value Recommendations (prefix = "axon.axonserver") (cont)		
token	None	Needs to be provided if the Axon Server deployment (SE/EE) has enabled access control restrictions. Recommended to be enforced for non-development environments. If you are using the SaaS edition, this token needs to be supplied always
context	"default"	This applies only to Axon EE. If supplied, each context will have its own set of files (stored in a separate directory). Recommended to be implemented in case multiple applications connecting to the same event store have data protection policies. Each context may have a different master in an Axon Server cluster. The context name must start with a letter and followed by a combination of letters, digits, hyphens and underscores.
sslEnabled	false	Needs to be enabled (true) for non-development environments as a hardening measure to enforce TLS connections to the Axon Server
certFile	None	In case SSL is enabled, this would need to be supplied as the public key
initialNrOfPermits	5000	Retain default value
nrOfNewPermits	null	Retain default value. A value of null, 0, and negative values will have the client (i.e. the Axon application) request the number of permits required to get from the "new-Permits-Threshold" or "initial-nr-of-permits".
newPermitsThreshold	null	Retain default value. A value of null, 0, and negative values will have the threshold set to 50% of "initial-nr-of-permits"

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Value Recommendations (prefix = "axon.axonserver") (cont)		
commandThreads	10	Retain default value. Has performance impact if changed.
queryThreads	10	Retain default value. Has performance impact if changed.
processorsNotificationRate	10	Retain default value
processorsNotificationInitialDelay	5000	Retain default value
eventCipher	EventCipher#EventCipher()	Default encryption algorithm used is *AES/CBC/PKCS5Padding* which should suffice
keepAliveTimeout	5000	Retain default value
keepAliveTime	1000	Retain default value
snapshotPrefetch	1	Retain default value
maxMessageSize	0 (Keeps default value for grpc size)	Retain default value
commitTimeout	10000	Retain default value
disableEventBlacklisting	false	Retain default value. Has high performance impact if enabled.
maxGrpcBufferedMessages	500	Retain default value
commandLoadFactor	100	Retain default value
connectTimeout	5000	Retain default value

Axon Serialization Configuration

A group of properties that allows easy configuration of the serializers used for different types of objects that Axon needs to serialize. This configuration controls the serialization of the following types of **Axon Messages** *(Events/Commands/Queries)* and **Axon objects** *(Sagas/Tokens and Snapshots)*

Parameter List (prefix = axon.serializer)	
Name	**Description**
events	The Event Serializer is used to serialize the payload and meta data of Event Messages only as they are stored in the event store and published.
messages	The Message Serializer is used to serialize the payload and meta-data of all messages and, where relevant, their return values. Commands, Queries and Events *(only if no Event Serializer is configured)*, but also the Command Result and Query Responses are serialized using this serializer
general	The General Serializer is used to serialize the rest of the objects, such as TrackingTokens, Saga state, Snapshot Events and all other data that needs to be serialized, but is not expected to be shared with other systems.

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Parameter Recommendations

Name	Default Value	Recommendation
events	XSTREAM	Recommended to change to JACKSON *(JSON Output)* which provides a nice compact serialized form which is optimal in case you have events being stored for a long duration of time. This however, requires adherence to the conventions enforced by JACKSON
messages	XSTREAM	Retain the default value. For high performance requirements recommended to build Custom Converters/Serialization mechanism
general	XSTREAM	Retain the default value.

Note 1 : The following serializers are available -> *DEFAULT (XSTREAM) , JACKSON and JAVA*
Note 2 : There is an implicit ordering between the configurable serializer -> *Event Serializer -> Message Serializer -> Default Serializer*
Note 3 : The following criteria of the Axon Messages/Objects needs to be considered while choosing any of the available serialization mechanisms or customizing it -> *Duration of storage / Size / Shareablity / Compaction / Interopability*.

Axon Event Processing Configuration List

A group of properties that allows for the configuration of Event Processors within an Axon Application.

List (prefix = axon.eventhandling.processors)

Name	Description
{{name}}.mode	<<TBD>>
{{name}}.source	<<TBD>>
{{name}}.initialSegmentCount	<<TBD>>
{{name}}.tokenClaimInterval	<<TBD>>
{{name}}.threadCount	<<TBD>>
{{name}}.batchSize	<<TBD>>
{{name}}.sequencingPolicy	<<TBD>>
{{name}}.tokenClaimIntervalTimeUnit	<<TBD>>

Note 1 : {{name}} is the name of the Event Processor within the Axon application.

Parameter Recommendations

Name	Default Value	Recommendation
{{name}}.mode	<<TBD>>	<<TBD>>
{{name}}.source	<<TBD>>	<<TBD>>
{{name}}.initialSegmentCount	<<TBD>>	<<TBD>>
{{name}}.tokenClaimInterval	<<TBD>>	<<TBD>>
{{name}}.threadCount	<<TBD>>	<<TBD>>
{{name}}.batchSize	<<TBD>>	<<TBD>>
{{name}}.sequencingPolicy	<<TBD>>	<<TBD>>
{{name}}.tokenClaimIntervalTimeUnit	<<TBD>>	<<TBD>>

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