Spring Boot Actuator Web API Documentation

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2.7.5

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This API documentation describes Spring Boot Actuators web endpoints.

Chapter 1. Overview

Before you proceed, you should read the following topics:

- URLs
- Timestamps

In order to get the correct JSON responses documented below, Jackson must be available.

1.1. URLs

By default, all web endpoints are available beneath the path `/actuator` with URLs of the form `/actuator/{id}`. The `/actuator` base path can be configured by using the `management.endpoints.web.base-path` property, as shown in the following example:

```
management.endpoints.web.base-path=/manage
```

The preceding `application.properties` example changes the form of the endpoint URLs from `/actuator/{id}` to `/manage/{id}`. For example, the URL `info` endpoint would become `/manage/info`.

1.2. Timestamps

All timestamps that are consumed by the endpoints, either as query parameters or in the request body, must be formatted as an offset date and time as specified in ISO 8601.

Chapter 2. Audit Events (auditevents)

The auditevents endpoint provides information about the application's audit events.

2.1. Retrieving Audit Events

To retrieve the audit events, make a GET request to /actuator/auditevents, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/auditevents?principal=alice&after=2022-10-
20T12%3A34%3A38.419Z&type=logout' -i -X GET
```

The preceding example retrieves logout events for the principal, alice, that occurred after 09:37 on 7 November 2017 in the UTC timezone. The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 121

{
  "events" : [ {
    "timestamp" : "2022-10-20T12:34:38.420Z",
    "principal" : "alice",
    "type" : "logout"
  } ]
}
```

2.1.1. Query Parameters

The endpoint uses query parameters to limit the events that it returns. The following table shows the supported query parameters:

Parameter	Description
after	Restricts the events to those that occurred after the given time. Optional.
principal	Restricts the events to those with the given principal. Optional.
type	Restricts the events to those with the given type. Optional.

2.1.2. Response Structure

The response contains details of all of the audit events that matched the query. The following table describes the structure of the response:

Path	Type	Description
`events`	`Array`	An array of audit events.
`events.[].timestamp`	`String`	The timestamp of when the event occurred.
`events.[].principal`	`String`	The principal that triggered the event.
`events.[].type`	`String`	The type of the event.

Chapter 3. Beans (beans)

The beans endpoint provides information about the application's beans.

3.1. Retrieving the Beans

To retrieve the beans, make a GET request to /actuator/beans, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/beans' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 1089

{
  "contexts" : {
    "application" : {
      "beans" : {

"org.springframework.boot.autoconfigure.web.servlet.DispatcherServletAutoConfiguration
$DispatcherServletRegistrationConfiguration" : {
          "aliases" : [ ],
          "scope" : "singleton",
          "type" :
"org.springframework.boot.autoconfigure.web.servlet.DispatcherServletAutoConfiguration
$DispatcherServletRegistrationConfiguration",
          "dependencies" : [ ]
        },

"org.springframework.boot.autoconfigure.context.PropertyPlaceholderAutoConfiguration"
: {
          "aliases" : [ ],
          "scope" : "singleton",
          "type" :
"org.springframework.boot.autoconfigure.context.PropertyPlaceholderAutoConfiguration",
          "dependencies" : [ ]
        },

"org.springframework.boot.autoconfigure.web.servlet.DispatcherServletAutoConfiguration
" : {
          "aliases" : [ ],
          "scope" : "singleton",
          "type" :
"org.springframework.boot.autoconfigure.web.servlet.DispatcherServletAutoConfiguration
",
          "dependencies" : [ ]
        }
      }
    }
  }
}
```

3.1.1. Response Structure

The response contains details of the application's beans. The following table describes the structure of the response:

Path	Type	Description
`contexts`	`Object`	Application contexts keyed by id.
`contexts.*.parentId`	`String`	Id of the parent application context, if any.
`contexts.*.beans`	`Object`	Beans in the application context keyed by name.
`contexts.*.beans.*.aliases`	`Array`	Names of any aliases.
`contexts.*.beans.*.scope`	`String`	Scope of the bean.
`contexts.*.beans.*.type`	`String`	Fully qualified type of the bean.
`contexts.*.beans.*.resource`	`String`	Resource in which the bean was defined, if any.
`contexts.*.beans.*.dependencies`	`Array`	Names of any dependencies.

Chapter 4. Caches (caches)

The caches endpoint provides access to the application's caches.

4.1. Retrieving All Caches

To retrieve the application's caches, make a GET request to /actuator/caches, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/caches' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 435

{
  "cacheManagers" : {
    "anotherCacheManager" : {
      "caches" : {
        "countries" : {
          "target" : "java.util.concurrent.ConcurrentHashMap"
        }
      }
    },
    "cacheManager" : {
      "caches" : {
        "cities" : {
          "target" : "java.util.concurrent.ConcurrentHashMap"
        },
        "countries" : {
          "target" : "java.util.concurrent.ConcurrentHashMap"
        }
      }
    }
  }
}
```

4.1.1. Response Structure

The response contains details of the application's caches. The following table describes the structure of the response:

Path	Type	Description
cacheManagers	Object	Cache managers keyed by id.

Path	Type	Description
`cacheManagers.*.caches`	`Object`	Caches in the application context keyed by name.
`cacheManagers.*.caches.*.target`	`String`	Fully qualified name of the native cache.

4.2. Retrieving Caches by Name

To retrieve a cache by name, make a `GET` request to `/actuator/caches/{name}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/caches/cities' -i -X GET
```

The preceding example retrieves information about the cache named `cities`. The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 113

{
  "target" : "java.util.concurrent.ConcurrentHashMap",
  "name" : "cities",
  "cacheManager" : "cacheManager"
}
```

4.2.1. Query Parameters

If the requested name is specific enough to identify a single cache, no extra parameter is required. Otherwise, the `cacheManager` must be specified. The following table shows the supported query parameters:

Parameter	Description
`cacheManager`	Name of the cacheManager to qualify the cache. May be omitted if the cache name is unique.

4.2.2. Response Structure

The response contains details of the requested cache. The following table describes the structure of the response:

Path	Type	Description
`name`	`String`	Cache name.
`cacheManager`	`String`	Cache manager name.

Path	Type	Description
`target`	`String`	Fully qualified name of the native cache.

4.3. Evict All Caches

To clear all available caches, make a `DELETE` request to `/actuator/caches` as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/caches' -i -X DELETE
```

4.4. Evict a Cache by Name

To evict a particular cache, make a `DELETE` request to `/actuator/caches/{name}` as shown in the following curl-based example:

```
$ curl
'http://localhost:8080/actuator/caches/countries?cacheManager=anotherCacheManager' -i
-X DELETE
```

As there are two caches named `countries`, the `cacheManager` has to be provided to specify which `Cache` should be cleared.

4.4.1. Request Structure

If the requested name is specific enough to identify a single cache, no extra parameter is required. Otherwise, the `cacheManager` must be specified. The following table shows the supported query parameters:

Parameter	Description
`cacheManager`	Name of the cacheManager to qualify the cache. May be omitted if the cache name is unique.

Chapter 5. Conditions Evaluation Report (`conditions`)

The `conditions` endpoint provides information about the evaluation of conditions on configuration and auto-configuration classes.

5.1. Retrieving the Report

To retrieve the report, make a `GET` request to `/actuator/conditions`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/conditions' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 3322

{
  "contexts" : {
    "application" : {
      "positiveMatches" : {
        "EndpointAutoConfiguration#endpointOperationParameterMapper" : [ {
          "condition" : "OnBeanCondition",
          "message" : "@ConditionalOnMissingBean (types:
org.springframework.boot.actuate.endpoint.invoke.ParameterValueMapper; SearchStrategy:
all) did not find any beans"
        } ],
        "EndpointAutoConfiguration#endpointCachingOperationInvokerAdvisor" : [ {
          "condition" : "OnBeanCondition",
          "message" : "@ConditionalOnMissingBean (types:
org.springframework.boot.actuate.endpoint.invoker.cache.CachingOperationInvokerAdvisor
; SearchStrategy: all) did not find any beans"
        } ],
        "WebEndpointAutoConfiguration" : [ {
          "condition" : "OnWebApplicationCondition",
          "message" : "@ConditionalOnWebApplication (required) found 'session' scope"
        } ]
      },
      "negativeMatches" : {
        "WebFluxEndpointManagementContextConfiguration" : {
          "notMatched" : [ {
            "condition" : "OnWebApplicationCondition",
            "message" : "not a reactive web application"
          } ],
          "matched" : [ {
```

```
            "condition" : "OnClassCondition",
            "message" : "@ConditionalOnClass found required classes
'org.springframework.web.reactive.DispatcherHandler',
'org.springframework.http.server.reactive.HttpHandler'"
          } ]
        },
        "GsonHttpMessageConvertersConfiguration.GsonHttpMessageConverterConfiguration"
: {
          "notMatched" : [ {
            "condition" :
"GsonHttpMessageConvertersConfiguration.PreferGsonOrJacksonAndJsonbUnavailableConditio
n",
            "message" : "AnyNestedCondition 0 matched 2 did not; NestedCondition on
GsonHttpMessageConvertersConfiguration.PreferGsonOrJacksonAndJsonbUnavailableCondition
.JacksonJsonbUnavailable NoneNestedConditions 1 matched 1 did not; NestedCondition on
GsonHttpMessageConvertersConfiguration.JacksonAndJsonbUnavailableCondition.JsonbPrefer
red @ConditionalOnProperty (spring.mvc.converters.preferred-json-mapper=jsonb) did not
find property 'spring.mvc.converters.preferred-json-mapper'; NestedCondition on
GsonHttpMessageConvertersConfiguration.JacksonAndJsonbUnavailableCondition.JacksonAvai
lable @ConditionalOnBean (types:
org.springframework.http.converter.json.MappingJackson2HttpMessageConverter;
SearchStrategy: all) found bean 'mappingJackson2HttpMessageConverter'; NestedCondition
on
GsonHttpMessageConvertersConfiguration.PreferGsonOrJacksonAndJsonbUnavailableCondition
.GsonPreferred @ConditionalOnProperty (spring.mvc.converters.preferred-json-
mapper=gson) did not find property 'spring.mvc.converters.preferred-json-mapper'"
          } ],
          "matched" : [ ]
        },

"WebMvcEndpointManagementContextConfiguration#managementHealthEndpointWebMvcHandlerMap
ping" : {
          "notMatched" : [ {
            "condition" : "OnManagementPortCondition",
            "message" : "Management Port actual port type (SAME) did not match
required type (DIFFERENT)"
          } ],
          "matched" : [ ]
        }
      },
      "unconditionalClasses" : [
"org.springframework.boot.autoconfigure.context.PropertyPlaceholderAutoConfiguration",
"org.springframework.boot.actuate.autoconfigure.endpoint.EndpointAutoConfiguration" ]
    }
  }
}
```


5.1.1. Response Structure

The response contains details of the application's condition evaluation. The following table

describes the structure of the response:

Path	Type	Description
`contexts`	`Object`	Application contexts keyed by id.
`contexts.*.positiveMatches`	`Object`	Classes and methods with conditions that were matched.
`contexts.*.positiveMatches.*.[].condition`	`String`	Name of the condition.
`contexts.*.positiveMatches.*.[].message`	`String`	Details of why the condition was matched.
`contexts.*.negativeMatches`	`Object`	Classes and methods with conditions that were not matched.
`contexts.*.negativeMatches.*.notMatched`	`Array`	Conditions that were matched.
`contexts.*.negativeMatches.*.notMatched.[].condition`	`String`	Name of the condition.
`contexts.*.negativeMatches.*.notMatched.[].message`	`String`	Details of why the condition was not matched.
`contexts.*.negativeMatches.*.matched`	`Array`	Conditions that were matched.
`contexts.*.negativeMatches.*.matched.[].condition`	`String`	Name of the condition.
`contexts.*.negativeMatches.*.matched.[].message`	`String`	Details of why the condition was matched.
`contexts.*.unconditionalClasses`	`Array`	Names of unconditional auto-configuration classes if any.
`contexts.*.parentId`	`String`	Id of the parent application context, if any.

Chapter 6. Configuration Properties (`configprops`)

The `configprops` endpoint provides information about the application's `@ConfigurationProperties` beans.

6.1. Retrieving All @ConfigurationProperties Beans

To retrieve all of the `@ConfigurationProperties` beans, make a `GET` request to `/actuator/configprops`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/configprops' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 3411

{
  "contexts" : {
    "application" : {
      "beans" : {
        "management.endpoints.web.cors-
org.springframework.boot.actuate.autoconfigure.endpoint.web.CorsEndpointProperties" :
{
          "prefix" : "management.endpoints.web.cors",
          "properties" : {
            "allowedOrigins" : [ ],
            "maxAge" : "PT30M",
            "exposedHeaders" : [ ],
            "allowedOriginPatterns" : [ ],
            "allowedHeaders" : [ ],
            "allowedMethods" : [ ]
          },
          "inputs" : {
            "allowedOrigins" : [ ],
            "maxAge" : { },
            "exposedHeaders" : [ ],
            "allowedOriginPatterns" : [ ],
            "allowedHeaders" : [ ],
            "allowedMethods" : [ ]
          }
        },
        "management.endpoints.web-
org.springframework.boot.actuate.autoconfigure.endpoint.web.WebEndpointProperties" : {
          "prefix" : "management.endpoints.web",
```

```
          "properties" : {
            "pathMapping" : { },
            "exposure" : {
              "include" : [ "*" ],
              "exclude" : [ ]
            },
            "basePath" : "/actuator",
            "discovery" : {
              "enabled" : true
            }
          },
          "inputs" : {
            "pathMapping" : { },
            "exposure" : {
              "include" : [ {
                "value" : "*",
                "origin" : "\"management.endpoints.web.exposure.include\" from
property source \"Inlined Test Properties\""
              } ],
              "exclude" : [ ]
            },
            "basePath" : { },
            "discovery" : {
              "enabled" : { }
            }
          }
        },
        "spring.web-org.springframework.boot.autoconfigure.web.WebProperties" : {
          "prefix" : "spring.web",
          "properties" : {
            "localeResolver" : "ACCEPT_HEADER",
            "resources" : {
              "staticLocations" : [ "classpath:/META-INF/resources/",
"classpath:/resources/", "classpath:/static/", "classpath:/public/" ],
              "addMappings" : true,
              "chain" : {
                "cache" : true,
                "compressed" : false,
                "strategy" : {
                  "fixed" : {
                    "enabled" : false,
                    "paths" : [ "/**" ]
                  },
                  "content" : {
                    "enabled" : false,
                    "paths" : [ "/**" ]
                  }
                }
              },
              "cache" : {
                "cachecontrol" : { },
```

```
                "useLastModified" : true
              }
            }
          },
          "inputs" : {
            "localeResolver" : { },
            "resources" : {
              "staticLocations" : [ { }, { }, { }, { } ],
              "addMappings" : { },
              "chain" : {
                "cache" : { },
                "compressed" : { },
                "strategy" : {
                  "fixed" : {
                    "enabled" : { },
                    "paths" : [ { } ]
                  },
                  "content" : {
                    "enabled" : { },
                    "paths" : [ { } ]
                  }
                }
              },
              "cache" : {
                "cachecontrol" : { },
                "useLastModified" : { }
              }
            }
          }
        }
      }
    }
  }
}
```

6.1.1. Response Structure

The response contains details of the application's `@ConfigurationProperties` beans. The following table describes the structure of the response:

Path	Type	Description
`contexts`	`Object`	Application contexts keyed by id.
`contexts.*.beans.*`	`Object`	`@ConfigurationProperties` beans keyed by bean name.
`contexts.*.beans.*.prefix`	`String`	Prefix applied to the names of the bean's properties.
`contexts.*.beans.*.properties`	`Object`	Properties of the bean as name-value pairs.

Path	Type	Description
`contexts.*.beans.*.inputs`	`Object`	Origin and value of the configuration property used when binding to this bean.
`contexts.*.parentId`	`String`	Id of the parent application context, if any.

6.2. Retrieving @ConfigurationProperties Beans By Prefix

To retrieve the `@ConfigurationProperties` beans mapped under a certain prefix, make a `GET` request to `/actuator/configprops/{prefix}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/configprops/spring.jackson' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Disposition: inline;filename=f.txt
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 1215

{
  "contexts" : {
    "application" : {
      "beans" : {
        "spring.jackson-
org.springframework.boot.autoconfigure.jackson.JacksonProperties" : {
          "prefix" : "spring.jackson",
          "properties" : {
            "serialization" : {
              "INDENT_OUTPUT" : true
            },
            "defaultPropertyInclusion" : "NON_NULL",
            "visibility" : { },
            "parser" : { },
            "deserialization" : { },
            "generator" : { },
            "mapper" : { }
          },
          "inputs" : {
            "serialization" : {
              "INDENT_OUTPUT" : {
                "value" : "true",
                "origin" : "\"spring.jackson.serialization.indent_output\" from
property source \"Inlined Test Properties\""
              }
            },
            "defaultPropertyInclusion" : {
              "value" : "non_null",
              "origin" : "\"spring.jackson.default-property-inclusion\" from property
source \"Inlined Test Properties\""
            },
            "visibility" : { },
            "parser" : { },
            "deserialization" : { },
            "generator" : { },
            "mapper" : { }
          }
        }
      }
    }
  }
}
```

The `{prefix}` does not need to be exact, a more general prefix will return all beans mapped under that prefix stem.

6.2.1. Response Structure

The response contains details of the application's `@ConfigurationProperties` beans. The following table describes the structure of the response:

Path	Type	Description
`contexts`	`Object`	Application contexts keyed by id.
`contexts.*.beans.*`	`Object`	`@ConfigurationProperties` beans keyed by bean name.
`contexts.*.beans.*.prefix`	`String`	Prefix applied to the names of the bean's properties.
`contexts.*.beans.*.properties`	`Object`	Properties of the bean as name-value pairs.
`contexts.*.beans.*.inputs`	`Object`	Origin and value of the configuration property used when binding to this bean.
`contexts.*.parentId`	`String`	Id of the parent application context, if any.

Chapter 7. Environment (env)

The `env` endpoint provides information about the application's `Environment`.

7.1. Retrieving the Entire Environment

To retrieve the entire environment, make a `GET` request to `/actuator/env`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/env' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 892

{
  "activeProfiles" : [ ],
  "propertySources" : [ {
    "name" : "servletContextInitParams",
    "properties" : { }
  }, {
    "name" : "systemProperties",
    "properties" : {
      "java.runtime.name" : {
        "value" : "OpenJDK Runtime Environment"
      },
      "java.vm.version" : {
        "value" : "25.345-b01"
      },
      "java.vm.vendor" : {
        "value" : "BellSoft"
      }
    }
  }, {
    "name" : "systemEnvironment",
    "properties" : {
      "JAVA_HOME" : {
        "value" : "/opt/openjdk",
        "origin" : "System Environment Property \"JAVA_HOME\""
      }
    }
  }, {
    "name" : "Config resource 'class path resource [application.properties]' via
location 'classpath:/'",
    "properties" : {
      "com.example.cache.max-size" : {
        "value" : "1000",
        "origin" : "class path resource [application.properties] - 1:29"
      }
    }
  } ]
}
```

7.1.1. Response Structure

The response contains details of the application's `Environment`. The following table describes the structure of the response:

Path	Type	Description
`activeProfiles`	`Array`	Names of the active profiles, if any.
`propertySources`	`Array`	Property sources in order of precedence.
`propertySources.[].name`	`String`	Name of the property source.
`propertySources.[].properties`	`Object`	Properties in the property source keyed by property name.
`propertySources.[].properties.*.value`	`String`	Value of the property.
`propertySources.[].properties.*.origin`	`String`	Origin of the property, if any.

7.2. Retrieving a Single Property

To retrieve a single property, make a `GET` request to `/actuator/env/{property.name}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/env/com.example.cache.max-size' -i -X GET
```

The preceding example retrieves information about the property named `com.example.cache.max-size`. The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Disposition: inline;filename=f.txt
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 564

{
  "property" : {
    "source" : "Config resource 'class path resource [application.properties]' via
location 'classpath:/'",
    "value" : "1000"
  },
  "activeProfiles" : [ ],
  "propertySources" : [ {
    "name" : "servletContextInitParams"
  }, {
    "name" : "systemProperties"
  }, {
    "name" : "systemEnvironment"
  }, {
    "name" : "Config resource 'class path resource [application.properties]' via
location 'classpath:/'",
    "property" : {
      "value" : "1000",
      "origin" : "class path resource [application.properties] - 1:29"
    }
  } ]
}
```

7.2.1. Response Structure

The response contains details of the requested property. The following table describes the structure of the response:

Path	Type	Description
`property`	`Object`	Property from the environment, if found.
`property.source`	`String`	Name of the source of the property.
`property.value`	`String`	Value of the property.
`activeProfiles`	`Array`	Names of the active profiles, if any.
`propertySources`	`Array`	Property sources in order of precedence.
`propertySources.[].name`	`String`	Name of the property source.
`propertySources.[].property`	`Object`	Property in the property source, if any.
`propertySources.[].property.value`	`Varies`	Value of the property.
`propertySources.[].property.origin`	`String`	Origin of the property, if any.

Chapter 8. Flyway (`flyway`)

The `flyway` endpoint provides information about database migrations performed by Flyway.

8.1. Retrieving the Migrations

To retrieve the migrations, make a `GET` request to `/actuator/flyway`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/flyway' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 516

{
  "contexts" : {
    "application" : {
      "flywayBeans" : {
        "flyway" : {
          "migrations" : [ {
            "type" : "SQL",
            "checksum" : -156244537,
            "version" : "1",
            "description" : "init",
            "script" : "V1__init.sql",
            "state" : "SUCCESS",
            "installedBy" : "SA",
            "installedOn" : "2022-10-20T12:34:46.886Z",
            "installedRank" : 1,
            "executionTime" : 15
          } ]
        }
      }
    }
  }
}
```

8.1.1. Response Structure

The response contains details of the application's Flyway migrations. The following table describes the structure of the response:

Path	Type	Description
contexts	Object	Application contexts keyed by id
contexts.*.flywayBeans.*.migrations	Array	Migrations performed by the Flyway instance, keyed by Flyway bean name.
contexts.*.flywayBeans.*.migrations.[].checksum	Number	Checksum of the migration, if any.
contexts.*.flywayBeans.*.migrations.[].description	String	Description of the migration, if any.
contexts.*.flywayBeans.*.migrations.[].executionTime	Number	Execution time in milliseconds of an applied migration.
contexts.*.flywayBeans.*.migrations.[].installedBy	String	User that installed the applied migration, if any.
contexts.*.flywayBeans.*.migrations.[].installedOn	String	Timestamp of when the applied migration was installed, if any.
contexts.*.flywayBeans.*.migrations.[].installedRank	Number	Rank of the applied migration, if any. Later migrations have higher ranks.
contexts.*.flywayBeans.*.migrations.[].script	String	Name of the script used to execute the migration, if any.
contexts.*.flywayBeans.*.migrations.[].state	String	State of the migration. (PENDING, ABOVE_TARGET, BELOW_BASELINE, BASELINE, IGNORED, MISSING_SUCCESS, MISSING_FAILED, SUCCESS, UNDONE, AVAILABLE, FAILED, OUT_OF_ORDER, FUTURE_SUCCESS, FUTURE_FAILED, OUTDATED, SUPERSEDED, DELETED)
contexts.*.flywayBeans.*.migrations.[].type	String	Type of the migration. (SCHEMA, BASELINE, DELETE, SQL, SQL_BASELINE, UNDO_SQL, JDBC, JDBC_BASELINE, UNDO_JDBC, SCRIPT, SCRIPT_BASELINE, UNDO_SCRIPT, CUSTOM, UNDO_CUSTOM)
contexts.*.flywayBeans.*.migrations.[].version	String	Version of the database after applying the migration, if any.
contexts.*.parentId	String	Id of the parent application context, if any.

Chapter 9. Health (`health`)

The `health` endpoint provides detailed information about the health of the application.

9.1. Retrieving the Health of the Application

To retrieve the health of the application, make a `GET` request to `/actuator/health`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/health' -i -X GET \
    -H 'Accept: application/json'
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: 704

{
  "status" : "UP",
  "components" : {
    "broker" : {
      "status" : "UP",
      "components" : {
        "us1" : {
          "status" : "UP",
          "details" : {
            "version" : "1.0.2"
          }
        },
        "us2" : {
          "status" : "UP",
          "details" : {
            "version" : "1.0.4"
          }
        }
      }
    },
    "db" : {
      "status" : "UP",
      "details" : {
        "database" : "H2",
        "validationQuery" : "isValid()"
      }
    },
    "diskSpace" : {
      "status" : "UP",
      "details" : {
        "total" : 325426569216,
        "free" : 223238356992,
        "threshold" : 10485760,
        "exists" : true
      }
    }
  }
}
```

9.1.1. Response Structure

The response contains details of the health of the application. The following table describes the structure of the response:

Path	Type	Description
`status`	`String`	Overall status of the application.
`components`	`Object`	The components that make up the health.
`components.*.status`	`String`	Status of a specific part of the application.
`components.*.components`	`Object`	The nested components that make up the health.
`components.*.details`	`Object`	Details of the health of a specific part of the application. Presence is controlled by `management.endpoint.health.show-details`.

The response fields above are for the V3 API. If you need to return V2 JSON you should use an accept header or `application/vnd.spring-boot.actuator.v2+json`

9.2. Retrieving the Health of a Component

To retrieve the health of a particular component of the application's health, make a `GET` request to `/actuator/health/{component}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/health/db' -i -X GET \
    -H 'Accept: application/json'
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: 101

{
  "status" : "UP",
  "details" : {
    "database" : "H2",
    "validationQuery" : "isValid()"
  }
}
```

9.2.1. Response Structure

The response contains details of the health of a particular component of the application's health. The following table describes the structure of the response:

Path	Type	Description
`status`	`String`	Status of a specific part of the application
`details`	`Object`	Details of the health of a specific part of the application.

9.3. Retrieving the Health of a Nested Component

If a particular component contains other nested components (as the `broker` indicator in the example above), the health of such a nested component can be retrieved by issuing a `GET` request to `/actuator/health/{component}/{subcomponent}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/health/broker/us1' -i -X GET \
    -H 'Accept: application/json'
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: 66

{
  "status" : "UP",
  "details" : {
    "version" : "1.0.2"
  }
}
```

Components of an application's health may be nested arbitrarily deep depending on the application's health indicators and how they have been grouped. The health endpoint supports any number of `/{component}` identifiers in the URL to allow the health of a component at any depth to be retrieved.

9.3.1. Response Structure

The response contains details of the health of an instance of a particular component of the application. The following table describes the structure of the response:

Path	Type	Description
`status`	`String`	Status of a specific part of the application
`details`	`Object`	Details of the health of a specific part of the application.

Chapter 10. Heap Dump (heapdump)

The heapdump endpoint provides a heap dump from the application's JVM.

10.1. Retrieving the Heap Dump

To retrieve the heap dump, make a GET request to /actuator/heapdump. The response is binary data and can be large. Its format depends upon the JVM on which the application is running. When running on a HotSpot JVM the format is HPROF and on OpenJ9 it is PHD. Typically, you should save the response to disk for subsequent analysis. When using curl, this can be achieved by using the -O option, as shown in the following example:

```
$ curl 'http://localhost:8080/actuator/heapdump' -O
```

The preceding example results in a file named heapdump being written to the current working directory.

Chapter 11. HTTP Trace (`httptrace`)

The `httptrace` endpoint provides information about HTTP request-response exchanges.

11.1. Retrieving the Traces

To retrieve the traces, make a `GET` request to `/actuator/httptrace`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/httptrace' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 503

{
  "traces" : [ {
    "timestamp" : "2022-10-20T12:34:50.377Z",
    "principal" : {
      "name" : "alice"
    },
    "session" : {
      "id" : "5d55c9a0-06b0-4d0b-a255-b060dc0bdf45"
    },
    "request" : {
      "method" : "GET",
      "uri" : "https://api.example.com",
      "headers" : {
        "Accept" : [ "application/json" ]
      }
    },
    "response" : {
      "status" : 200,
      "headers" : {
        "Content-Type" : [ "application/json" ]
      }
    },
    "timeTaken" : 0
  } ]
}
```

11.1.1. Response Structure

The response contains details of the traced HTTP request-response exchanges. The following table describes the structure of the response:

Path	Type	Description
`traces`	`Array`	An array of traced HTTP request-response exchanges.
`traces.[].timestamp`	`String`	Timestamp of when the traced exchange occurred.
`traces.[].principal`	`Object`	Principal of the exchange, if any.
`traces.[].principal.name`	`String`	Name of the principal.
`traces.[].request.method`	`String`	HTTP method of the request.
`traces.[].request.remoteAddress`	`String`	Remote address from which the request was received, if known.
`traces.[].request.uri`	`String`	URI of the request.
`traces.[].request.headers`	`Object`	Headers of the request, keyed by header name.
`traces.[].request.headers.*.[]`	`Array`	Values of the header
`traces.[].response.status`	`Number`	Status of the response
`traces.[].response.headers`	`Object`	Headers of the response, keyed by header name.
`traces.[].response.headers.*.[]`	`Array`	Values of the header
`traces.[].session`	`Object`	Session associated with the exchange, if any.
`traces.[].session.id`	`String`	ID of the session.
`traces.[].timeTaken`	`Number`	Time, in milliseconds, taken to handle the exchange.

Chapter 12. Info (`info`)

The `info` endpoint provides general information about the application.

12.1. Retrieving the Info

To retrieve the information about the application, make a `GET` request to `/actuator/info`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/info' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 233

{
  "git" : {
    "commit" : {
      "time" : "+54771-12-22T04:41:51Z",
      "id" : "df027cf"
    },
    "branch" : "main"
  },
  "build" : {
    "version" : "1.0.3",
    "artifact" : "application",
    "group" : "com.example"
  }
}
```

12.1.1. Response Structure

The response contains general information about the application. Each section of the response is contributed by an `InfoContributor`. Spring Boot provides several contributors that are described below.

Build Response Structure

The following table describe the structure of the `build` section of the response:

Path	Type	Description
`artifact`	`String`	Artifact ID of the application, if any.
`group`	`String`	Group ID of the application, if any.

Path	Type	Description
`name`	`String`	Name of the application, if any.
`version`	`String`	Version of the application, if any.
`time`	`Varies`	Timestamp of when the application was built, if any.

Git Response Structure

The following table describes the structure of the `git` section of the response:

Path	Type	Description
`branch`	`String`	Name of the Git branch, if any.
`commit`	`Object`	Details of the Git commit, if any.
`commit.time`	`Varies`	Timestamp of the commit, if any.
`commit.id`	`String`	ID of the commit, if any.

This is the "simple" output. The contributor can also be configured to output all available data.

Chapter 13. Spring Integration graph (`integrationgraph`)

The `integrationgraph` endpoint exposes a graph containing all Spring Integration components.

13.1. Retrieving the Spring Integration Graph

To retrieve the information about the application, make a `GET` request to `/actuator/integrationgraph`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/integrationgraph' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 962

{
  "contentDescriptor" : {
    "providerVersion" : "5.5.15",
    "providerFormatVersion" : 1.2,
    "provider" : "spring-integration"
  },
  "nodes" : [ {
    "nodeId" : 1,
    "componentType" : "null-channel",
    "integrationPatternType" : "null_channel",
    "integrationPatternCategory" : "messaging_channel",
    "properties" : { },
    "name" : "nullChannel"
  }, {
    "nodeId" : 2,
    "componentType" : "publish-subscribe-channel",
    "integrationPatternType" : "publish_subscribe_channel",
    "integrationPatternCategory" : "messaging_channel",
    "properties" : { },
    "name" : "errorChannel"
  }, {
    "nodeId" : 3,
    "componentType" : "logging-channel-adapter",
    "integrationPatternType" : "outbound_channel_adapter",
    "integrationPatternCategory" : "messaging_endpoint",
    "properties" : { },
    "input" : "errorChannel",
    "name" : "errorLogger"
  } ],
  "links" : [ {
    "from" : 2,
    "to" : 3,
    "type" : "input"
  } ]
}
```

13.1.1. Response Structure

The response contains all Spring Integration components used within the application, as well as the links between them. More information about the structure can be found in the reference documentation.

13.2. Rebuilding the Spring Integration Graph

To rebuild the exposed graph, make a `POST` request to `/actuator/integrationgraph`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/integrationgraph' -i -X POST
```

This will result in a `204 - No Content` response:

```
HTTP/1.1 204 No Content
```

Chapter 14. Liquibase (`liquibase`)

The `liquibase` endpoint provides information about database change sets applied by Liquibase.

14.1. Retrieving the Changes

To retrieve the changes, make a `GET` request to `/actuator/liquibase`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/liquibase' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 677

{
  "contexts" : {
    "application" : {
      "liquibaseBeans" : {
        "liquibase" : {
          "changeSets" : [ {
            "author" : "marceloverdijk",
            "changeLog" : "db/changelog/db.changelog-master.yaml",
            "comments" : "",
            "contexts" : [ ],
            "dateExecuted" : "2022-10-20T12:34:55.031Z",
            "deploymentId" : "6269294898",
            "description" : "createTable tableName=customer",
            "execType" : "EXECUTED",
            "id" : "1",
            "labels" : [ ],
            "checksum" : "8:46debf252cce6d7b25e28ddeb9fc4bf6",
            "orderExecuted" : 1
          } ]
        }
      }
    }
  }
}
```

14.1.1. Response Structure

The response contains details of the application's Liquibase change sets. The following table describes the structure of the response:

Path	Type	Description
`contexts`	`Object`	Application contexts keyed by id
`contexts.*.liquibaseBeans.*.changeSets`	`Array`	Change sets made by the Liquibase beans, keyed by bean name.
`contexts.*.liquibaseBeans.*.changeSets[].author`	`String`	Author of the change set.
`contexts.*.liquibaseBeans.*.changeSets[].changeLog`	`String`	Change log that contains the change set.
`contexts.*.liquibaseBeans.*.changeSets[].comments`	`String`	Comments on the change set.
`contexts.*.liquibaseBeans.*.changeSets[].contexts`	`Array`	Contexts of the change set.
`contexts.*.liquibaseBeans.*.changeSets[].dateExecuted`	`String`	Timestamp of when the change set was executed.
`contexts.*.liquibaseBeans.*.changeSets[].deploymentId`	`String`	ID of the deployment that ran the change set.
`contexts.*.liquibaseBeans.*.changeSets[].description`	`String`	Description of the change set.
`contexts.*.liquibaseBeans.*.changeSets[].execType`	`String`	Execution type of the change set (`EXECUTED`, `FAILED`, `SKIPPED`, `RERAN`, `MARK_RAN`).
`contexts.*.liquibaseBeans.*.changeSets[].id`	`String`	ID of the change set.
`contexts.*.liquibaseBeans.*.changeSets[].labels`	`Array`	Labels associated with the change set.
`contexts.*.liquibaseBeans.*.changeSets[].checksum`	`String`	Checksum of the change set.
`contexts.*.liquibaseBeans.*.changeSets[].orderExecuted`	`Number`	Order of the execution of the change set.
`contexts.*.liquibaseBeans.*.changeSets[].tag`	`String`	Tag associated with the change set, if any.
`contexts.*.parentId`	`String`	Id of the parent application context, if any.

Chapter 15. Log File (`logfile`)

The `logfile` endpoint provides access to the contents of the application's log file.

15.1. Retrieving the Log File

To retrieve the log file, make a `GET` request to `/actuator/logfile`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/logfile' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Accept-Ranges: bytes
Content-Type: text/plain;charset=UTF-8
Content-Length: 4723


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 :: Spring Boot ::

2017-08-08 17:12:30.910  INFO 19866 --- [           main]
s.f.SampleWebFreeMarkerApplication       : Starting SampleWebFreeMarkerApplication on
host.local with PID 19866
2017-08-08 17:12:30.913  INFO 19866 --- [           main]
s.f.SampleWebFreeMarkerApplication       : No active profile set, falling back to
default profiles: default
2017-08-08 17:12:30.952  INFO 19866 --- [           main]
ConfigServletWebServerApplicationContext : Refreshing
org.springframework.boot.web.servlet.context.AnnotationConfigServletWebServerApplicati
onContext@76b10754: startup date [Tue Aug 08 17:12:30 BST 2017]; root of context
hierarchy
2017-08-08 17:12:31.878  INFO 19866 --- [           main]
o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with port(s): 8080
(http)
2017-08-08 17:12:31.889  INFO 19866 --- [           main]
o.apache.catalina.core.StandardService   : Starting service [Tomcat]
2017-08-08 17:12:31.890  INFO 19866 --- [           main]
org.apache.catalina.core.StandardEngine  : Starting Servlet Engine: Apache
Tomcat/8.5.16
2017-08-08 17:12:31.978  INFO 19866 --- [ost-startStop-1]
o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring embedded
WebApplicationContext
```

```
2017-08-08 17:12:31.978  INFO 19866 --- [ost-startStop-1]
o.s.web.context.ContextLoader            : Root WebApplicationContext: initialization
completed in 1028 ms
2017-08-08 17:12:32.080  INFO 19866 --- [ost-startStop-1]
o.s.b.w.servlet.ServletRegistrationBean  : Mapping servlet: 'dispatcherServlet' to [/]
2017-08-08 17:12:32.084  INFO 19866 --- [ost-startStop-1]
o.s.b.w.servlet.FilterRegistrationBean   : Mapping filter: 'characterEncodingFilter'
to: [/*]
2017-08-08 17:12:32.084  INFO 19866 --- [ost-startStop-1]
o.s.b.w.servlet.FilterRegistrationBean   : Mapping filter: 'hiddenHttpMethodFilter'
to: [/*]
2017-08-08 17:12:32.084  INFO 19866 --- [ost-startStop-1]
o.s.b.w.servlet.FilterRegistrationBean   : Mapping filter: 'httpPutFormContentFilter'
to: [/*]
2017-08-08 17:12:32.084  INFO 19866 --- [ost-startStop-1]
o.s.b.w.servlet.FilterRegistrationBean   : Mapping filter: 'requestContextFilter' to:
[/*]
2017-08-08 17:12:32.349  INFO 19866 --- [           main]
s.w.s.m.m.a.RequestMappingHandlerAdapter : Looking for @ControllerAdvice:
org.springframework.boot.web.servlet.context.AnnotationConfigServletWebServerApplicati
onContext@76b10754: startup date [Tue Aug 08 17:12:30 BST 2017]; root of context
hierarchy
2017-08-08 17:12:32.420  INFO 19866 --- [           main]
s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped "{[/error]}" onto public
org.springframework.http.ResponseEntity<java.util.Map<java.lang.String,
java.lang.Object>>
org.springframework.boot.autoconfigure.web.servlet.error.BasicErrorController.error(ja
vax.servlet.http.HttpServletRequest)
2017-08-08 17:12:32.421  INFO 19866 --- [           main]
s.w.s.m.m.a.RequestMappingHandlerMapping : Mapped "{[/error],produces=[text/html]}"
onto public org.springframework.web.servlet.ModelAndView
org.springframework.boot.autoconfigure.web.servlet.error.BasicErrorController.errorHtm
l(javax.servlet.http.HttpServletRequest,javax.servlet.http.HttpServletResponse)
2017-08-08 17:12:32.444  INFO 19866 --- [           main]
o.s.w.s.handler.SimpleUrlHandlerMapping  : Mapped URL path [/webjars/**] onto handler
of type [class org.springframework.web.servlet.resource.ResourceHttpRequestHandler]
2017-08-08 17:12:32.444  INFO 19866 --- [           main]
o.s.w.s.handler.SimpleUrlHandlerMapping  : Mapped URL path [/**] onto handler of type
[class org.springframework.web.servlet.resource.ResourceHttpRequestHandler]
2017-08-08 17:12:32.471  INFO 19866 --- [           main]
o.s.w.s.handler.SimpleUrlHandlerMapping  : Mapped URL path [/**/favicon.ico] onto
handler of type [class
org.springframework.web.servlet.resource.ResourceHttpRequestHandler]
2017-08-08 17:12:32.600  INFO 19866 --- [           main]
o.s.w.s.v.f.FreeMarkerConfigurer         : ClassTemplateLoader for Spring macros added
to FreeMarker configuration
2017-08-08 17:12:32.681  INFO 19866 --- [           main]
o.s.j.e.a.AnnotationMBeanExporter        : Registering beans for JMX exposure on
startup
2017-08-08 17:12:32.744  INFO 19866 --- [           main]
o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat started on port(s): 8080 (http)
```

```
2017-08-08 17:12:32.750  INFO 19866 --- [           main]
s.f.SampleWebFreeMarkerApplication       : Started SampleWebFreeMarkerApplication in
2.172 seconds (JVM running for 2.479)
```

15.2. Retrieving Part of the Log File

Retrieving part of the log file is not supported when using Jersey.

To retrieve part of the log file, make a `GET` request to `/actuator/logfile` by using the `Range` header, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/logfile' -i -X GET \
    -H 'Range: bytes=0-1023'
```

The preceding example retrieves the first 1024 bytes of the log file. The resulting response is similar to the following:

```
HTTP/1.1 206 Partial Content
Accept-Ranges: bytes
Content-Type: text/plain;charset=UTF-8
Content-Range: bytes 0-1023/4723
Content-Length: 1024

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 :: Spring Boot ::

2017-08-08 17:12:30.910  INFO 19866 --- [           main]
s.f.SampleWebFreeMarkerApplication       : Starting SampleWebFreeMarkerApplication on
host.local with PID 19866
2017-08-08 17:12:30.913  INFO 19866 --- [           main]
s.f.SampleWebFreeMarkerApplication       : No active profile set, falling back to
default profiles: default
2017-08-08 17:12:30.952  INFO 19866 --- [           main]
ConfigServletWebServerApplicationContext : Refreshing
org.springframework.boot.web.servlet.context.AnnotationConfigServletWebServerApplicati
onContext@76b10754: startup date [Tue Aug 08 17:12:30 BST 2017]; root of context
hierarchy
2017-08-08 17:12:31.878  INFO 19866 --- [           main]
o.s.b.w.embedded.tomcat.TomcatWebServer  : Tomcat initialized with port(
```

Chapter 16. Loggers (`loggers`)

The `loggers` endpoint provides access to the application's loggers and the configuration of their levels.

16.1. Retrieving All Loggers

To retrieve the application's loggers, make a `GET` request to `/actuator/loggers`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/loggers' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 791

{
  "levels" : [ "OFF", "FATAL", "ERROR", "WARN", "INFO", "DEBUG", "TRACE" ],
  "loggers" : {
    "ROOT" : {
      "configuredLevel" : "INFO",
      "effectiveLevel" : "INFO"
    },
    "com.example" : {
      "configuredLevel" : "DEBUG",
      "effectiveLevel" : "DEBUG"
    }
  },
  "groups" : {
    "test" : {
      "configuredLevel" : "INFO",
      "members" : [ "test.member1", "test.member2" ]
    },
    "web" : {
      "members" : [ "org.springframework.core.codec", "org.springframework.http",
"org.springframework.web", "org.springframework.boot.actuate.endpoint.web",
"org.springframework.boot.web.servlet.ServletContextInitializerBeans" ]
    },
    "sql" : {
      "members" : [ "org.springframework.jdbc.core", "org.hibernate.SQL",
"org.jooq.tools.LoggerListener" ]
    }
  }
}
```

16.1.1. Response Structure

The response contains details of the application's loggers. The following table describes the structure of the response:

Path	Type	Description
`levels`	`Array`	Levels support by the logging system.
`loggers`	`Object`	Loggers keyed by name.
`groups`	`Object`	Logger groups keyed by name
`loggers.*.configuredLevel`	`String`	Configured level of the logger, if any.
`loggers.*.effectiveLevel`	`String`	Effective level of the logger.
`groups.*.configuredLevel`	`String`	Configured level of the logger group, if any.
`groups.*.members`	`Array`	Loggers that are part of this group

16.2. Retrieving a Single Logger

To retrieve a single logger, make a `GET` request to `/actuator/loggers/{logger.name}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/loggers/com.example' -i -X GET
```

The preceding example retrieves information about the logger named `com.example`. The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Disposition: inline;filename=f.txt
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 61

{
  "configuredLevel" : "INFO",
  "effectiveLevel" : "INFO"
}
```

16.2.1. Response Structure

The response contains details of the requested logger. The following table describes the structure of the response:

Path	Type	Description
`configuredLevel`	`String`	Configured level of the logger, if any.

Path	Type	Description
`effectiveLevel`	`String`	Effective level of the logger.

16.3. Retrieving a Single Group

To retrieve a single group, make a `GET` request to `/actuator/loggers/{group.name}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/loggers/test' -i -X GET
```

The preceding example retrieves information about the logger group named `test`. The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 82

{
  "configuredLevel" : "INFO",
  "members" : [ "test.member1", "test.member2" ]
}
```

16.3.1. Response Structure

The response contains details of the requested group. The following table describes the structure of the response:

Path	Type	Description
`configuredLevel`	`String`	Configured level of the logger group, if any.
`members`	`Array`	Loggers that are part of this group

16.4. Setting a Log Level

To set the level of a logger, make a `POST` request to `/actuator/loggers/{logger.name}` with a JSON body that specifies the configured level for the logger, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/loggers/com.example' -i -X POST \
    -H 'Content-Type: application/json' \
    -d '{"configuredLevel":"debug"}'
```

The preceding example sets the `configuredLevel` of the `com.example` logger to `DEBUG`.

16.4.1. Request Structure

The request specifies the desired level of the logger. The following table describes the structure of the request:

Path	Type	Description
`configuredLevel`	`String`	Level for the logger. May be omitted to clear the level.

16.5. Setting a Log Level for a Group

To set the level of a logger, make a `POST` request to `/actuator/loggers/{group.name}` with a JSON body that specifies the configured level for the logger group, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/loggers/test' -i -X POST \
    -H 'Content-Type: application/json' \
    -d '{"configuredLevel":"debug"}'
```

The preceding example sets the `configuredLevel` of the `test` logger group to `DEBUG`.

16.5.1. Request Structure

The request specifies the desired level of the logger group. The following table describes the structure of the request:

Path	Type	Description
`configuredLevel`	`String`	Level for the logger. May be omitted to clear the level.

16.6. Clearing a Log Level

To clear the level of a logger, make a `POST` request to `/actuator/loggers/{logger.name}` with a JSON body containing an empty object, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/loggers/com.example' -i -X POST \
    -H 'Content-Type: application/json' \
    -d '{}'
```

The preceding example clears the configured level of the `com.example` logger.

Chapter 17. Mappings (`mappings`)

The `mappings` endpoint provides information about the application's request mappings.

17.1. Retrieving the Mappings

To retrieve the mappings, make a `GET` request to `/actuator/mappings`, as shown in the following curl-based example:

```
$ curl 'http://localhost:44905/actuator/mappings' -i -X GET \
    -H 'accept-encoding: gzip' \
    -H 'user-agent: ReactorNetty/1.0.24' \
    -H 'accept: */*'
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Transfer-Encoding: chunked
Date: Thu, 20 Oct 2022 12:34:59 GMT
Content-Length: 5339

{
  "contexts" : {
    "application" : {
      "mappings" : {
        "dispatcherServlets" : {
          "dispatcherServlet" : [ {
            "handler" : "Actuator web endpoint 'mappings'",
            "predicate" : "{GET [/actuator/mappings], produces
[application/vnd.spring-boot.actuator.v3+json || application/vnd.spring-
boot.actuator.v2+json || application/json]}",
            "details" : {
              "handlerMethod" : {
                "className" :
"org.springframework.boot.actuate.endpoint.web.servlet.AbstractWebMvcEndpointHandlerMa
pping.OperationHandler",
                "name" : "handle",
                "descriptor" :
"(Ljavax/servlet/http/HttpServletRequest;Ljava/util/Map;)Ljava/lang/Object;"
              },
              "requestMappingConditions" : {
                "consumes" : [ ],
                "headers" : [ ],
                "methods" : [ "GET" ],
                "params" : [ ],
                "patterns" : [ "/actuator/mappings" ],
                "produces" : [ {
```

```
                "mediaType" : "application/vnd.spring-boot.actuator.v3+json",
                "negated" : false
              }, {
                "mediaType" : "application/vnd.spring-boot.actuator.v2+json",
                "negated" : false
              }, {
                "mediaType" : "application/json",
                "negated" : false
              } ]
            }
          }
        }, {
          "handler" : "Actuator root web endpoint",
          "predicate" : "{GET [/actuator], produces [application/vnd.spring-
boot.actuator.v3+json || application/vnd.spring-boot.actuator.v2+json ||
application/json]}",
          "details" : {
            "handlerMethod" : {
              "className" :
"org.springframework.boot.actuate.endpoint.web.servlet.WebMvcEndpointHandlerMapping.We
bMvcLinksHandler",
              "name" : "links",
              "descriptor" :
"(Ljavax/servlet/http/HttpServletRequest;Ljavax/servlet/http/HttpServletResponse;)Ljav
a/lang/Object;"
            },
            "requestMappingConditions" : {
              "consumes" : [ ],
              "headers" : [ ],
              "methods" : [ "GET" ],
              "params" : [ ],
              "patterns" : [ "/actuator" ],
              "produces" : [ {
                "mediaType" : "application/vnd.spring-boot.actuator.v3+json",
                "negated" : false
              }, {
                "mediaType" : "application/vnd.spring-boot.actuator.v2+json",
                "negated" : false
              }, {
                "mediaType" : "application/json",
                "negated" : false
              } ]
            }
          }
        }, {
          "handler" :
"org.springframework.boot.actuate.autoconfigure.endpoint.web.documentation.MappingsEnd
pointServletDocumentationTests$ExampleController#example()",
          "predicate" : "{POST [/], params [a!=alpha], headers [X-Custom=Foo],
consumes [application/json || !application/xml], produces [text/plain]}",
          "details" : {
```

```
              "handlerMethod" : {
                "className" :
"org.springframework.boot.actuate.autoconfigure.endpoint.web.documentation.MappingsEnd
pointServletDocumentationTests.ExampleController",
                "name" : "example",
                "descriptor" : "()Ljava/lang/String;"
              },
              "requestMappingConditions" : {
                "consumes" : [ {
                  "mediaType" : "application/json",
                  "negated" : false
                }, {
                  "mediaType" : "application/xml",
                  "negated" : true
                } ],
                "headers" : [ {
                  "name" : "X-Custom",
                  "value" : "Foo",
                  "negated" : false
                } ],
                "methods" : [ "POST" ],
                "params" : [ {
                  "name" : "a",
                  "value" : "alpha",
                  "negated" : true
                } ],
                "patterns" : [ "/" ],
                "produces" : [ {
                  "mediaType" : "text/plain",
                  "negated" : false
                } ]
              }
            }
          }, {
            "handler" : "ResourceHttpRequestHandler [classpath [META-
INF/resources/webjars/]]",
            "predicate" : "/webjars/**"
          }, {
            "handler" : "ResourceHttpRequestHandler [classpath [META-INF/resources/],
classpath [resources/], classpath [static/], classpath [public/], ServletContext
[/]]",
            "predicate" : "/**"
          } ]
        },
        "servletFilters" : [ {
          "servletNameMappings" : [ ],
          "urlPatternMappings" : [ "/*" ],
          "name" : "requestContextFilter",
          "className" :
"org.springframework.boot.web.servlet.filter.OrderedRequestContextFilter"
        }, {
```

```
          "servletNameMappings" : [ ],
          "urlPatternMappings" : [ "/*" ],
          "name" : "formContentFilter",
          "className" :
 "org.springframework.boot.web.servlet.filter.OrderedFormContentFilter"
        } ],
        "servlets" : [ {
          "mappings" : [ "/" ],
          "name" : "dispatcherServlet",
          "className" : "org.springframework.web.servlet.DispatcherServlet"
        } ]
      }
    }
  }
}
```

17.1.1. Response Structure

The response contains details of the application's mappings. The items found in the response depend on the type of web application (reactive or Servlet-based). The following table describes the structure of the common elements of the response:

Path	Type	Description
`contexts`	`Object`	Application contexts keyed by id.
`contexts.*.mappings`	`Object`	Mappings in the context, keyed by mapping type.
`contexts.*.mappings.dispatcherServlets`	`Object`	Dispatcher servlet mappings, if any.
`contexts.*.mappings.servletFilters`	`Array`	Servlet filter mappings, if any.
`contexts.*.mappings.servlets`	`Array`	Servlet mappings, if any.
`contexts.*.mappings.dispatcherHandlers`	`Object`	Dispatcher handler mappings, if any.
`contexts.*.parentId`	`String`	Id of the parent application context, if any.

The entries that may be found in `contexts.*.mappings` are described in the following sections.

17.1.2. Dispatcher Servlets Response Structure

When using Spring MVC, the response contains details of any `DispatcherServlet` request mappings beneath `contexts.*.mappings.dispatcherServlets`. The following table describes the structure of this section of the response:

Path	Type	Description
`*`	`Array`	Dispatcher servlet mappings, if any, keyed by dispatcher servlet bean name.
`*.[].details`	`Object`	Additional implementation-specific details about the mapping. Optional.
`*.[].handler`	`String`	Handler for the mapping.
`*.[].predicate`	`String`	Predicate for the mapping.
`*.[].details.handlerMethod`	`Object`	Details of the method, if any, that will handle requests to this mapping.
`*.[].details.handlerMethod.className`	`Varies`	Fully qualified name of the class of the method.
`*.[].details.handlerMethod.name`	`Varies`	Name of the method.
`*.[].details.handlerMethod.descriptor`	`Varies`	Descriptor of the method as specified in the Java Language Specification.
`*.[].details.requestMappingConditions`	`Object`	Details of the request mapping conditions.
`*.[].details.requestMappingConditions.consumes`	`Varies`	Details of the consumes condition
`*.[].details.requestMappingConditions.consumes.[].mediaType`	`Varies`	Consumed media type.
`*.[].details.requestMappingConditions.consumes.[].negated`	`Varies`	Whether the media type is negated.
`*.[].details.requestMappingConditions.headers`	`Varies`	Details of the headers condition.
`*.[].details.requestMappingConditions.headers.[].name`	`Varies`	Name of the header.
`*.[].details.requestMappingConditions.headers.[].value`	`Varies`	Required value of the header, if any.
`*.[].details.requestMappingConditions.headers.[].negated`	`Varies`	Whether the value is negated.
`*.[].details.requestMappingConditions.methods`	`Varies`	HTTP methods that are handled.
`*.[].details.requestMappingConditions.params`	`Varies`	Details of the params condition.
`*.[].details.requestMappingConditions.params.[].name`	`Varies`	Name of the parameter.

Path	Type	Description
`*.[].details.requestMappingConditions.params.[].value`	`Varies`	Required value of the parameter, if any.
`*.[].details.requestMappingConditions.params.[].negated`	`Varies`	Whether the value is negated.
`*.[].details.requestMappingConditions.patterns`	`Varies`	Patterns identifying the paths handled by the mapping.
`*.[].details.requestMappingConditions.produces`	`Varies`	Details of the produces condition.
`*.[].details.requestMappingConditions.produces.[].mediaType`	`Varies`	Produced media type.
`*.[].details.requestMappingConditions.produces.[].negated`	`Varies`	Whether the media type is negated.

17.1.3. Servlets Response Structure

When using the Servlet stack, the response contains details of any `Servlet` mappings beneath `contexts.*.mappings.servlets`. The following table describes the structure of this section of the response:

Path	Type	Description
`[].mappings`	`Array`	Mappings of the servlet.
`[].name`	`String`	Name of the servlet.
`[].className`	`String`	Class name of the servlet

17.1.4. Servlet Filters Response Structure

When using the Servlet stack, the response contains details of any `Filter` mappings beneath `contexts.*.mappings.servletFilters`. The following table describes the structure of this section of the response:

Path	Type	Description
`[].servletNameMappings`	`Array`	Names of the servlets to which the filter is mapped.
`[].urlPatternMappings`	`Array`	URL pattern to which the filter is mapped.
`[].name`	`String`	Name of the filter.
`[].className`	`String`	Class name of the filter

17.1.5. Dispatcher Handlers Response Structure

When using Spring WebFlux, the response contains details of any `DispatcherHandler` request mappings beneath `contexts.*.mappings.dispatcherHandlers`. The following table describes the

structure of this section of the response:

Path	Type	Description
`*`	`Array`	Dispatcher handler mappings, if any, keyed by dispatcher handler bean name.
`*.[].details`	`Object`	Additional implementation-specific details about the mapping. Optional.
`*.[].handler`	`String`	Handler for the mapping.
`*.[].predicate`	`String`	Predicate for the mapping.
`*.[].details.requestMappingConditions`	`Object`	Details of the request mapping conditions.
`*.[].details.requestMappingConditions.consumes`	`Array`	Details of the consumes condition
`*.[].details.requestMappingConditions.consumes.[].mediaType`	`String`	Consumed media type.
`*.[].details.requestMappingConditions.consumes.[].negated`	`Boolean`	Whether the media type is negated.
`*.[].details.requestMappingConditions.headers`	`Array`	Details of the headers condition.
`*.[].details.requestMappingConditions.headers.[].name`	`String`	Name of the header.
`*.[].details.requestMappingConditions.headers.[].value`	`String`	Required value of the header, if any.
`*.[].details.requestMappingConditions.headers.[].negated`	`Boolean`	Whether the value is negated.
`*.[].details.requestMappingConditions.methods`	`Array`	HTTP methods that are handled.
`*.[].details.requestMappingConditions.params`	`Array`	Details of the params condition.
`*.[].details.requestMappingConditions.params.[].name`	`String`	Name of the parameter.
`*.[].details.requestMappingConditions.params.[].value`	`String`	Required value of the parameter, if any.
`*.[].details.requestMappingConditions.params.[].negated`	`Boolean`	Whether the value is negated.
`*.[].details.requestMappingConditions.patterns`	`Array`	Patterns identifying the paths handled by the mapping.

Path	Type	Description
`*.[].details.requestMappingConditions.produces`	`Array`	Details of the produces condition.
`*.[].details.requestMappingConditions.produces.[].mediaType`	`String`	Produced media type.
`*.[].details.requestMappingConditions.produces.[].negated`	`Boolean`	Whether the media type is negated.
`*.[].details.handlerMethod`	`Object`	Details of the method, if any, that will handle requests to this mapping.
`*.[].details.handlerMethod.className`	`String`	Fully qualified name of the class of the method.
`*.[].details.handlerMethod.name`	`String`	Name of the method.
`*.[].details.handlerMethod.descriptor`	`String`	Descriptor of the method as specified in the Java Language Specification.
`*.[].details.handlerFunction`	`Object`	Details of the function, if any, that will handle requests to this mapping.
`*.[].details.handlerFunction.className`	`String`	Fully qualified name of the class of the function.

Chapter 18. Metrics (`metrics`)

The `metrics` endpoint provides access to application metrics.

18.1. Retrieving Metric Names

To retrieve the names of the available metrics, make a `GET` request to `/actuator/metrics`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/metrics' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 154

{
  "names" : [ "jvm.buffer.count", "jvm.buffer.memory.used",
"jvm.buffer.total.capacity", "jvm.memory.committed", "jvm.memory.max",
"jvm.memory.used" ]
}
```

18.1.1. Response Structure

The response contains details of the metric names. The following table describes the structure of the response:

Path	Type	Description
`names`	`Array`	Names of the known metrics.

18.2. Retrieving a Metric

To retrieve a metric, make a `GET` request to `/actuator/metrics/{metric.name}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/metrics/jvm.memory.max' -i -X GET
```

The preceding example retrieves information about the metric named `jvm.memory.max`. The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Disposition: inline;filename=f.txt
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 474

{
  "name" : "jvm.memory.max",
  "description" : "The maximum amount of memory in bytes that can be used for memory
management",
  "baseUnit" : "bytes",
  "measurements" : [ {
    "statistic" : "VALUE",
    "value" : 2.359820287E9
  } ],
  "availableTags" : [ {
    "tag" : "area",
    "values" : [ "heap", "nonheap" ]
  }, {
    "tag" : "id",
    "values" : [ "Compressed Class Space", "PS Old Gen", "PS Survivor Space",
"Metaspace", "PS Eden Space", "Code Cache" ]
  } ]
}
```

18.2.1. Query Parameters

The endpoint uses query parameters to drill down into a metric by using its tags. The following table shows the single supported query parameter:

Parameter	Description
`tag`	A tag to use for drill-down in the form `name:value`.

18.2.2. Response structure

The response contains details of the metric. The following table describes the structure of the response:

Path	Type	Description
`name`	`String`	Name of the metric
`description`	`String`	Description of the metric
`baseUnit`	`String`	Base unit of the metric
`measurements`	`Array`	Measurements of the metric

Path	Type	Description
`measurements[].statistic`	`String`	Statistic of the measurement. (`TOTAL`, `TOTAL_TIME`, `COUNT`, `MAX`, `VALUE`, `UNKNOWN`, `ACTIVE_TASKS`, `DURATION`).
`measurements[].value`	`Number`	Value of the measurement.
`availableTags`	`Array`	Tags that are available for drill-down.
`availableTags[].tag`	`String`	Name of the tag.
`availableTags[].values`	`Array`	Possible values of the tag.

18.3. Drilling Down

To drill down into a metric, make a `GET` request to `/actuator/metrics/{metric.name}` using the `tag` query parameter, as shown in the following curl-based example:

```
$ curl
'http://localhost:8080/actuator/metrics/jvm.memory.max?tag=area%3Anonheap&tag=id%3ACom
pressed+Class+Space' -i -X GET
```

The preceding example retrieves the `jvm.memory.max` metric, where the `area` tag has a value of `nonheap` and the `id` attribute has a value of `Compressed Class Space`. The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Disposition: inline;filename=f.txt
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 263

{
  "name" : "jvm.memory.max",
  "description" : "The maximum amount of memory in bytes that can be used for memory
management",
  "baseUnit" : "bytes",
  "measurements" : [ {
    "statistic" : "VALUE",
    "value" : 1.073741824E9
  } ],
  "availableTags" : [ ]
}
```

Chapter 19. Prometheus (`prometheus`)

The `prometheus` endpoint provides Spring Boot application's metrics in the format required for scraping by a Prometheus server.

19.1. Retrieving All Metrics

To retrieve all metrics, make a `GET` request to `/actuator/prometheus`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/prometheus' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: text/plain;version=0.0.4;charset=utf-8
Content-Length: 2374

# HELP jvm_buffer_total_capacity_bytes An estimate of the total capacity of the
buffers in this pool
# TYPE jvm_buffer_total_capacity_bytes gauge
jvm_buffer_total_capacity_bytes{id="direct",} 458959.0
jvm_buffer_total_capacity_bytes{id="mapped",} 0.0
# HELP jvm_memory_used_bytes The amount of used memory
# TYPE jvm_memory_used_bytes gauge
jvm_memory_used_bytes{area="heap",id="PS Survivor Space",} 2.3132408E7
jvm_memory_used_bytes{area="heap",id="PS Old Gen",} 6.2735448E7
jvm_memory_used_bytes{area="heap",id="PS Eden Space",} 1.86084432E8
jvm_memory_used_bytes{area="nonheap",id="Metaspace",} 1.12994528E8
jvm_memory_used_bytes{area="nonheap",id="Code Cache",} 4.1159424E7
jvm_memory_used_bytes{area="nonheap",id="Compressed Class Space",} 1.5545808E7
# HELP jvm_memory_committed_bytes The amount of memory in bytes that is committed for
the Java virtual machine to use
# TYPE jvm_memory_committed_bytes gauge
jvm_memory_committed_bytes{area="heap",id="PS Survivor Space",} 3.9845888E7
jvm_memory_committed_bytes{area="heap",id="PS Old Gen",} 6.1865984E8
jvm_memory_committed_bytes{area="heap",id="PS Eden Space",} 2.78396928E8
jvm_memory_committed_bytes{area="nonheap",id="Metaspace",} 1.22028032E8
jvm_memory_committed_bytes{area="nonheap",id="Code Cache",} 4.1680896E7
jvm_memory_committed_bytes{area="nonheap",id="Compressed Class Space",} 1.7170432E7
# HELP jvm_buffer_count_buffers An estimate of the number of buffers in the pool
# TYPE jvm_buffer_count_buffers gauge
jvm_buffer_count_buffers{id="direct",} 15.0
jvm_buffer_count_buffers{id="mapped",} 0.0
# HELP jvm_memory_max_bytes The maximum amount of memory in bytes that can be used for
memory management
# TYPE jvm_memory_max_bytes gauge
jvm_memory_max_bytes{area="heap",id="PS Survivor Space",} 3.9845888E7
jvm_memory_max_bytes{area="heap",id="PS Old Gen",} 7.16177408E8
jvm_memory_max_bytes{area="heap",id="PS Eden Space",} 2.78396928E8
jvm_memory_max_bytes{area="nonheap",id="Metaspace",} -1.0
jvm_memory_max_bytes{area="nonheap",id="Code Cache",} 2.5165824E8
jvm_memory_max_bytes{area="nonheap",id="Compressed Class Space",} 1.073741824E9
# HELP jvm_buffer_memory_used_bytes An estimate of the memory that the Java virtual
machine is using for this buffer pool
# TYPE jvm_buffer_memory_used_bytes gauge
jvm_buffer_memory_used_bytes{id="direct",} 458960.0
jvm_buffer_memory_used_bytes{id="mapped",} 0.0
```

The default response content type is `text/plain;version=0.0.4`. The endpoint can also produce `application/openmetrics-text;version=1.0.0` when called with an appropriate `Accept` header, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/prometheus' -i -X GET \
    -H 'Accept: application/openmetrics-text; version=1.0.0; charset=utf-8'
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/openmetrics-text;version=1.0.0;charset=utf-8
Content-Length: 2355

# TYPE jvm_buffer_total_capacity_bytes gauge
# HELP jvm_buffer_total_capacity_bytes An estimate of the total capacity of the
buffers in this pool
jvm_buffer_total_capacity_bytes{id="direct"} 458959.0
jvm_buffer_total_capacity_bytes{id="mapped"} 0.0
# TYPE jvm_memory_used_bytes gauge
# HELP jvm_memory_used_bytes The amount of used memory
jvm_memory_used_bytes{area="heap",id="PS Survivor Space"} 2.3132408E7
jvm_memory_used_bytes{area="heap",id="PS Old Gen"} 6.2735448E7
jvm_memory_used_bytes{area="heap",id="PS Eden Space"} 1.80689624E8
jvm_memory_used_bytes{area="nonheap",id="Metaspace"} 1.12983136E8
jvm_memory_used_bytes{area="nonheap",id="Code Cache"} 4.1136896E7
jvm_memory_used_bytes{area="nonheap",id="Compressed Class Space"} 1.554292E7
# TYPE jvm_memory_committed_bytes gauge
# HELP jvm_memory_committed_bytes The amount of memory in bytes that is committed for
the Java virtual machine to use
jvm_memory_committed_bytes{area="heap",id="PS Survivor Space"} 3.9845888E7
jvm_memory_committed_bytes{area="heap",id="PS Old Gen"} 6.1865984E8
jvm_memory_committed_bytes{area="heap",id="PS Eden Space"} 2.78396928E8
jvm_memory_committed_bytes{area="nonheap",id="Metaspace"} 1.22028032E8
jvm_memory_committed_bytes{area="nonheap",id="Code Cache"} 4.1680896E7
jvm_memory_committed_bytes{area="nonheap",id="Compressed Class Space"} 1.7170432E7
# TYPE jvm_buffer_count_buffers gauge
# HELP jvm_buffer_count_buffers An estimate of the number of buffers in the pool
jvm_buffer_count_buffers{id="direct"} 15.0
jvm_buffer_count_buffers{id="mapped"} 0.0
# TYPE jvm_memory_max_bytes gauge
# HELP jvm_memory_max_bytes The maximum amount of memory in bytes that can be used for
memory management
jvm_memory_max_bytes{area="heap",id="PS Survivor Space"} 3.9845888E7
jvm_memory_max_bytes{area="heap",id="PS Old Gen"} 7.16177408E8
jvm_memory_max_bytes{area="heap",id="PS Eden Space"} 2.78396928E8
jvm_memory_max_bytes{area="nonheap",id="Metaspace"} -1.0
jvm_memory_max_bytes{area="nonheap",id="Code Cache"} 2.5165824E8
jvm_memory_max_bytes{area="nonheap",id="Compressed Class Space"} 1.073741824E9
# TYPE jvm_buffer_memory_used_bytes gauge
# HELP jvm_buffer_memory_used_bytes An estimate of the memory that the Java virtual
machine is using for this buffer pool
jvm_buffer_memory_used_bytes{id="direct"} 458960.0
jvm_buffer_memory_used_bytes{id="mapped"} 0.0
# EOF
```

19.1.1. Query Parameters

The endpoint uses query parameters to limit the samples that it returns. The following table shows

the supported query parameters:

Parameter	Description
`includedNames`	Restricts the samples to those that match the names. Optional.

19.2. Retrieving Filtered Metrics

To retrieve metrics matching specific names, make a `GET` request to `/actuator/prometheus` with the `includedNames` query parameter, as shown in the following curl-based example:

```
$ curl
'http://localhost:8080/actuator/prometheus?includedNames=jvm_memory_used_bytes%2Cjvm_m
emory_committed_bytes' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: text/plain;version=0.0.4;charset=utf-8
Content-Length: 1110

# HELP jvm_memory_committed_bytes The amount of memory in bytes that is committed for
the Java virtual machine to use
# TYPE jvm_memory_committed_bytes gauge
jvm_memory_committed_bytes{area="heap",id="PS Survivor Space",} 3.9845888E7
jvm_memory_committed_bytes{area="heap",id="PS Old Gen",} 6.1865984E8
jvm_memory_committed_bytes{area="heap",id="PS Eden Space",} 2.78396928E8
jvm_memory_committed_bytes{area="nonheap",id="Metaspace",} 1.22028032E8
jvm_memory_committed_bytes{area="nonheap",id="Code Cache",} 4.1680896E7
jvm_memory_committed_bytes{area="nonheap",id="Compressed Class Space",} 1.7170432E7
# HELP jvm_memory_used_bytes The amount of used memory
# TYPE jvm_memory_used_bytes gauge
jvm_memory_used_bytes{area="heap",id="PS Survivor Space",} 2.3132408E7
jvm_memory_used_bytes{area="heap",id="PS Old Gen",} 6.2735448E7
jvm_memory_used_bytes{area="heap",id="PS Eden Space",} 1.91477352E8
jvm_memory_used_bytes{area="nonheap",id="Metaspace",} 1.13008848E8
jvm_memory_used_bytes{area="nonheap",id="Code Cache",} 4.1167552E7
jvm_memory_used_bytes{area="nonheap",id="Compressed Class Space",} 1.5547504E7
```

Chapter 20. Quartz (quartz)

The quartz endpoint provides information about jobs and triggers that are managed by the Quartz Scheduler.

20.1. Retrieving Registered Groups

Jobs and triggers are managed in groups. To retrieve the list of registered job and trigger groups, make a GET request to /actuator/quartz, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/quartz' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 120

{
  "jobs" : {
    "groups" : [ "samples", "tests" ]
  },
  "triggers" : {
    "groups" : [ "samples", "DEFAULT" ]
  }
}
```

20.1.1. Response Structure

The response contains the groups names for registered jobs and triggers. The following table describes the structure of the response:

Path	Type	Description
jobs.groups	Array	An array of job group names.
triggers.groups	Array	An array of trigger group names.

20.2. Retrieving Registered Job Names

To retrieve the list of registered job names, make a GET request to /actuator/quartz/jobs, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/quartz/jobs' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 137

{
  "groups" : {
    "samples" : {
      "jobs" : [ "jobOne", "jobTwo" ]
    },
    "tests" : {
      "jobs" : [ "jobThree" ]
    }
  }
}
```

20.2.1. Response Structure

The response contains the registered job names for each group. The following table describes the structure of the response:

Path	Type	Description
`groups`	`Object`	Job groups keyed by name.
`groups.*.jobs`	`Array`	An array of job names.

20.3. Retrieving Registered Trigger Names

To retrieve the list of registered trigger names, make a `GET` request to `/actuator/quartz/triggers`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/quartz/triggers' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 229

{
  "groups" : {
    "samples" : {
      "paused" : false,
      "triggers" : [ "3am-weekdays", "every-day", "once-a-week" ]
    },
    "DEFAULT" : {
      "paused" : false,
      "triggers" : [ "every-hour-tue-thu" ]
    }
  }
}
```

20.3.1. Response Structure

The response contains the registered trigger names for each group. The following table describes the structure of the response:

Path	Type	Description
`groups`	`Object`	Trigger groups keyed by name.
`groups.*.paused`	`Boolean`	Whether this trigger group is paused.
`groups.*.triggers`	`Array`	An array of trigger names.

20.4. Retrieving Overview of a Job Group

To retrieve an overview of the jobs in a particular group, make a `GET` request to `/actuator/quartz/jobs/{groupName}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/quartz/jobs/samples' -i -X GET
```

The preceding example retrieves the summary for jobs in the `samples` group. The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 201

{
  "group" : "samples",
  "jobs" : {
    "jobOne" : {
      "className" : "org.springframework.scheduling.quartz.DelegatingJob"
    },
    "jobTwo" : {
      "className" : "org.quartz.Job"
    }
  }
}
```

20.4.1. Response Structure

The response contains an overview of jobs in a particular group. The following table describes the structure of the response:

Path	Type	Description
`group`	`String`	Name of the group.
`jobs`	`Object`	Job details keyed by name.
`jobs.*.className`	`String`	Fully qualified name of the job implementation.

20.5. Retrieving Overview of a Trigger Group

To retrieve an overview of the triggers in a particular group, make a `GET` request to `/actuator/quartz/triggers/{groupName}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/quartz/triggers/tests' -i -X GET
```

The preceding example retrieves the summary for triggers in the `tests` group. The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 1268

{
  "group" : "tests",
  "paused" : false,
  "triggers" : {
```

```
    "cron" : {
      "3am-week" : {
        "previousFireTime" : "2020-12-04T03:00:00.000+00:00",
        "nextFireTime" : "2020-12-07T03:00:00.000+00:00",
        "priority" : 3,
        "expression" : "0 0 3 ? * 1,2,3,4,5",
        "timeZone" : "Europe/Paris"
      }
    },
    "simple" : {
      "every-day" : {
        "nextFireTime" : "2020-12-04T12:00:00.000+00:00",
        "priority" : 7,
        "interval" : 86400000
      }
    },
    "dailyTimeInterval" : {
      "tue-thu" : {
        "priority" : 5,
        "interval" : 3600000,
        "daysOfWeek" : [ 3, 5 ],
        "startTimeOfDay" : "09:00:00",
        "endTimeOfDay" : "18:00:00"
      }
    },
    "calendarInterval" : {
      "once-a-week" : {
        "previousFireTime" : "2020-12-02T14:00:00.000+00:00",
        "nextFireTime" : "2020-12-08T14:00:00.000+00:00",
        "priority" : 5,
        "interval" : 604800000,
        "timeZone" : "Etc/UTC"
      }
    },
    "custom" : {
      "once-a-year-custom" : {
        "previousFireTime" : "2020-07-14T16:00:00.000+00:00",
        "nextFireTime" : "2021-07-14T16:00:00.000+00:00",
        "priority" : 10,
        "trigger" : "com.example.CustomTrigger@fdsfsd"
      }
    }
  }
}
```


20.5.1. Response Structure

The response contains an overview of triggers in a particular group. Trigger implementation specific details are available. The following table describes the structure of the response:

Path	Type	Description
group	String	Name of the group.
paused	Boolean	Whether the group is paused.
triggers.cron	Object	Cron triggers keyed by name, if any.
triggers.simple	Object	Simple triggers keyed by name, if any.
triggers.dailyTimeInterval	Object	Daily time interval triggers keyed by name, if any.
triggers.calendarInterval	Object	Calendar interval triggers keyed by name, if any.
triggers.custom	Object	Any other triggers keyed by name, if any.
triggers.cron.*.previousFireTime	String	Last time the trigger fired, if any.
triggers.cron.*.nextFireTime	String	Next time at which the Trigger is scheduled to fire, if any.
triggers.cron.*.priority	Number	Priority to use if two triggers have the same scheduled fire time.
triggers.cron.*.expression	String	Cron expression to use.
triggers.cron.*.timeZone	String	Time zone for which the expression will be resolved, if any.
triggers.simple.*.previousFireTime	String	Last time the trigger fired, if any.
triggers.simple.*.nextFireTime	String	Next time at which the Trigger is scheduled to fire, if any.
triggers.simple.*.priority	Number	Priority to use if two triggers have the same scheduled fire time.
triggers.simple.*.interval	Number	Interval, in milliseconds, between two executions.
triggers.dailyTimeInterval.*.previousFireTime	String	Last time the trigger fired, if any.
triggers.dailyTimeInterval.*.nextFireTime	String	Next time at which the Trigger is scheduled to fire, if any.
triggers.dailyTimeInterval.*.priority	Number	Priority to use if two triggers have the same scheduled fire time.
triggers.dailyTimeInterval.*.interval	Number	Interval, in milliseconds, added to the fire time in order to calculate the time of the next trigger repeat.
triggers.dailyTimeInterval.*.daysOfWeek	Array	An array of days of the week upon which to fire.
triggers.dailyTimeInterval.*.startTimeOfDay	String	Time of day to start firing at the given interval, if any.

Path	Type	Description
`triggers.dailyTimeInterval.*.endTimeOfDay`	`String`	Time of day to complete firing at the given interval, if any.
`triggers.calendarInterval.*.previousFireTime`	`String`	Last time the trigger fired, if any.
`triggers.calendarInterval.*.nextFireTime`	`String`	Next time at which the Trigger is scheduled to fire, if any.
`triggers.calendarInterval.*.priority`	`Number`	Priority to use if two triggers have the same scheduled fire time.
`triggers.calendarInterval.*.interval`	`Number`	Interval, in milliseconds, added to the fire time in order to calculate the time of the next trigger repeat.
`triggers.calendarInterval.*.timeZone`	`String`	Time zone within which time calculations will be performed, if any.
`triggers.custom.*.previousFireTime`	`String`	Last time the trigger fired, if any.
`triggers.custom.*.nextFireTime`	`String`	Next time at which the Trigger is scheduled to fire, if any.
`triggers.custom.*.priority`	`Number`	Priority to use if two triggers have the same scheduled fire time.
`triggers.custom.*.trigger`	`String`	A toString representation of the custom trigger instance.

20.6. Retrieving Details of a Job

To retrieve the details about a particular job, make a `GET` request to `/actuator/quartz/jobs/{groupName}/{jobName}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/quartz/jobs/samples/jobOne' -i -X GET
```

The preceding example retrieves the details of the job identified by the `samples` group and `jobOne` name. The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 609

{
  "group" : "samples",
  "name" : "jobOne",
  "description" : "A sample job",
  "className" : "org.springframework.scheduling.quartz.DelegatingJob",
  "durable" : false,
  "requestRecovery" : false,
  "data" : {
    "password" : "******",
    "user" : "admin"
  },
  "triggers" : [ {
    "group" : "samples",
    "name" : "every-day",
    "previousFireTime" : "2020-12-04T03:00:00.000+00:00",
    "nextFireTime" : "2020-12-04T12:00:00.000+00:00",
    "priority" : 7
  }, {
    "group" : "samples",
    "name" : "3am-weekdays",
    "nextFireTime" : "2020-12-07T03:00:00.000+00:00",
    "priority" : 3
  } ]
}
```

If a key in the data map is identified as sensitive, its value is sanitized.

20.6.1. Response Structure

The response contains the full details of a job including a summary of the triggers associated with it, if any. The triggers are sorted by next fire time and priority. The following table describes the structure of the response:

Path	Type	Description
`group`	`String`	Name of the group.
`name`	`String`	Name of the job.
`description`	`String`	Description of the job, if any.
`className`	`String`	Fully qualified name of the job implementation.
`durable`	`Boolean`	Whether the job should remain stored after it is orphaned.
`requestRecovery`	`Boolean`	Whether the job should be re-executed if a 'recovery' or 'fail-over' situation is encountered.

Path	Type	Description
`data.*`	`String`	Job data map as key/value pairs, if any.
`triggers`	`Array`	An array of triggers associated to the job, if any.
`triggers.[].group`	`String`	Name of the the trigger group.
`triggers.[].name`	`String`	Name of the the trigger.
`triggers.[].previousFireTime`	`String`	Last time the trigger fired, if any.
`triggers.[].nextFireTime`	`String`	Next time at which the Trigger is scheduled to fire, if any.
`triggers.[].priority`	`Number`	Priority to use if two triggers have the same scheduled fire time.

20.7. Retrieving Details of a Trigger

To retrieve the details about a particular trigger, make a `GET` request to `/actuator/quartz/triggers/{groupName}/{triggerName}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/quartz/triggers/samples/example' -i -X GET
```

The preceding example retrieves the details of trigger identified by the `samples` group and `example` name.

20.7.1. Common Response Structure

The response has a common structure and an additional object that is specific to the trigger's type. There are five supported types:

- `cron` for `CronTrigger`
- `simple` for `SimpleTrigger`
- `dailyTimeInterval` for `DailyTimeIntervalTrigger`
- `calendarInterval` for `CalendarIntervalTrigger`
- `custom` for any other trigger implementations

The following table describes the structure of the common elements of the response:

Path	Type	Description
`group`	`String`	Name of the group.
`name`	`String`	Name of the trigger.
`description`	`String`	Description of the trigger, if any.
`state`	`String`	State of the trigger (`NONE`, `NORMAL`, `PAUSED`, `COMPLETE`, `ERROR`, `BLOCKED`).

Path	Type	Description
`type`	`String`	Type of the trigger (`calendarInterval`, `cron`, `custom`, `dailyTimeInterval`, `simple`). Determines the key of the object containing type-specific details.
`calendarName`	`String`	Name of the Calendar associated with this Trigger, if any.
`startTime`	`String`	Time at which the Trigger should take effect, if any.
`endTime`	`String`	Time at which the Trigger should quit repeating, regardless of any remaining repeats, if any.
`previousFireTime`	`String`	Last time the trigger fired, if any.
`nextFireTime`	`String`	Next time at which the Trigger is scheduled to fire, if any.
`priority`	`Number`	Priority to use if two triggers have the same scheduled fire time.
`finalFireTime`	`String`	Last time at which the Trigger will fire, if any.
`data`	`Object`	Job data map keyed by name, if any.
`calendarInterval`	`Object`	Calendar time interval trigger details, if any. Present when `type` is `calendarInterval`.
`custom`	`Object`	Custom trigger details, if any. Present when `type` is `custom`.
`cron`	`Object`	Cron trigger details, if any. Present when `type` is `cron`.
`dailyTimeInterval`	`Object`	Daily time interval trigger details, if any. Present when `type` is `dailyTimeInterval`.
`simple`	`Object`	Simple trigger details, if any. Present when `type` is `simple`.

20.7.2. Cron Trigger Response Structure

A cron trigger defines the cron expression that is used to determine when it has to fire. The resulting response for such a trigger implementation is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 490

{
  "group" : "samples",
  "name" : "example",
  "description" : "Example trigger",
  "state" : "NORMAL",
  "type" : "cron",
  "calendarName" : "bankHolidays",
  "startTime" : "2020-11-30T17:00:00.000+00:00",
  "endTime" : "2020-12-30T03:00:00.000+00:00",
  "previousFireTime" : "2020-12-04T03:00:00.000+00:00",
  "nextFireTime" : "2020-12-07T03:00:00.000+00:00",
  "priority" : 3,
  "data" : { },
  "cron" : {
    "expression" : "0 0 3 ? * 1,2,3,4,5",
    "timeZone" : "Europe/Paris"
  }
}
```

Much of the response is common to all trigger types. The structure of the common elements of the response was described previously. The following table describes the structure of the parts of the response that are specific to cron triggers:

Path	Type	Description
`cron`	`Object`	Cron trigger specific details.
`cron.expression`	`String`	Cron expression to use.
`cron.timeZone`	`String`	Time zone for which the expression will be resolved, if any.

20.7.3. Simple Trigger Response Structure

A simple trigger is used to fire a Job at a given moment in time, and optionally repeated at a specified interval. The resulting response for such a trigger implementation is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 549

{
  "group" : "samples",
  "name" : "example",
  "description" : "Example trigger",
  "state" : "NORMAL",
  "type" : "simple",
  "calendarName" : "bankHolidays",
  "startTime" : "2020-11-30T17:00:00.000+00:00",
  "endTime" : "2020-12-30T03:00:00.000+00:00",
  "previousFireTime" : "2020-12-04T03:00:00.000+00:00",
  "nextFireTime" : "2020-12-07T03:00:00.000+00:00",
  "priority" : 7,
  "finalFireTime" : "2020-12-29T17:00:00.000+00:00",
  "data" : { },
  "simple" : {
    "interval" : 86400000,
    "repeatCount" : -1,
    "timesTriggered" : 0
  }
}
```

Much of the response is common to all trigger types. The structure of the common elements of the response was described previously. The following table describes the structure of the parts of the response that are specific to simple triggers:

Path	Type	Description
`simple`	`Object`	Simple trigger specific details.
`simple.interval`	`Number`	Interval, in milliseconds, between two executions.
`simple.repeatCount`	`Number`	Number of times the trigger should repeat, or -1 to repeat indefinitely.
`simple.timesTriggered`	`Number`	Number of times the trigger has already fired.

20.7.4. Daily Time Interval Trigger Response Structure

A daily time interval trigger is used to fire a Job based upon daily repeating time intervals. The resulting response for such a trigger implementation is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 667

{
  "group" : "samples",
  "name" : "example",
  "description" : "Example trigger",
  "state" : "PAUSED",
  "type" : "dailyTimeInterval",
  "calendarName" : "bankHolidays",
  "startTime" : "2020-11-30T17:00:00.000+00:00",
  "endTime" : "2020-12-30T03:00:00.000+00:00",
  "previousFireTime" : "2020-12-04T03:00:00.000+00:00",
  "nextFireTime" : "2020-12-07T03:00:00.000+00:00",
  "priority" : 5,
  "finalFireTime" : "2020-12-30T18:00:00.000+00:00",
  "data" : { },
  "dailyTimeInterval" : {
    "interval" : 3600000,
    "daysOfWeek" : [ 3, 5 ],
    "startTimeOfDay" : "09:00:00",
    "endTimeOfDay" : "18:00:00",
    "repeatCount" : -1,
    "timesTriggered" : 0
  }
}
```

Much of the response is common to all trigger types. The structure of the common elements of the response was described previously. The following table describes the structure of the parts of the response that are specific to daily time interval triggers:

Path	Type	Description
`dailyTimeInterval`	`Object`	Daily time interval trigger specific details.
`dailyTimeInterval.interval`	`Number`	Interval, in milliseconds, added to the fire time in order to calculate the time of the next trigger repeat.
`dailyTimeInterval.daysOfWeek`	`Array`	An array of days of the week upon which to fire.
`dailyTimeInterval.startTimeOfDay`	`String`	Time of day to start firing at the given interval, if any.
`dailyTimeInterval.endTimeOfDay`	`String`	Time of day to complete firing at the given interval, if any.
`dailyTimeInterval.repeatCount`	`Number`	Number of times the trigger should repeat, or -1 to repeat indefinitely.
`dailyTimeInterval.timesTriggered`	`Number`	Number of times the trigger has already fired.

20.7.5. Calendar Interval Trigger Response Structure

A calendar interval trigger is used to fire a Job based upon repeating calendar time intervals. The resulting response for such a trigger implementation is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 669

{
  "group" : "samples",
  "name" : "example",
  "description" : "Example trigger",
  "state" : "NORMAL",
  "type" : "calendarInterval",
  "calendarName" : "bankHolidays",
  "startTime" : "2020-11-30T17:00:00.000+00:00",
  "endTime" : "2020-12-30T03:00:00.000+00:00",
  "previousFireTime" : "2020-12-04T03:00:00.000+00:00",
  "nextFireTime" : "2020-12-07T03:00:00.000+00:00",
  "priority" : 5,
  "finalFireTime" : "2020-12-28T17:00:00.000+00:00",
  "data" : { },
  "calendarInterval" : {
    "interval" : 604800000,
    "timeZone" : "Etc/UTC",
    "timesTriggered" : 0,
    "preserveHourOfDayAcrossDaylightSavings" : false,
    "skipDayIfHourDoesNotExist" : false
  }
}
```

Much of the response is common to all trigger types. The structure of the common elements of the response was described previously. The following table describes the structure of the parts of the response that are specific to calendar interval triggers:

Path	Type	Description
`calendarInterval`	`Object`	Calendar interval trigger specific details.
`calendarInterval.interval`	`Number`	Interval, in milliseconds, added to the fire time in order to calculate the time of the next trigger repeat.
`calendarInterval.timeZone`	`String`	Time zone within which time calculations will be performed, if any.
`calendarInterval.timesTriggered`	`Number`	Number of times the trigger has already fired.

Path	Type	Description
`calendarInterval.preserveHourOfDayAcrossDaylightSavings`	`Boolean`	Whether to fire the trigger at the same time of day, regardless of daylight saving time transitions.
`calendarInterval.skipDayIfHourDoesNotExist`	`Boolean`	Whether to skip if the hour of the day does not exist on a given day.

20.7.6. Custom Trigger Response Structure

A custom trigger is any other implementation. The resulting response for such a trigger implementation is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 457

{
  "group" : "samples",
  "name" : "example",
  "description" : "Example trigger.",
  "state" : "NORMAL",
  "type" : "custom",
  "calendarName" : "bankHolidays",
  "startTime" : "2020-11-30T17:00:00.000+00:00",
  "endTime" : "2020-12-30T03:00:00.000+00:00",
  "previousFireTime" : "2020-12-04T03:00:00.000+00:00",
  "nextFireTime" : "2020-12-07T03:00:00.000+00:00",
  "priority" : 10,
  "custom" : {
    "trigger" : "com.example.CustomTrigger@fdsfsd"
  }
}
```

Much of the response is common to all trigger types. The structure of the common elements of the response was described previously. The following table describes the structure of the parts of the response that are specific to custom triggers:

Path	Type	Description
`custom`	`Object`	Custom trigger specific details.
`custom.trigger`	`String`	A toString representation of the custom trigger instance.

Chapter 21. Scheduled Tasks (scheduledtasks)

The scheduledtasks endpoint provides information about the application's scheduled tasks.

21.1. Retrieving the Scheduled Tasks

To retrieve the scheduled tasks, make a GET request to /actuator/scheduledtasks, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/scheduledtasks' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 629

{
  "cron" : [ {
    "runnable" : {
      "target" : "com.example.Processor.processOrders"
    },
    "expression" : "0 0 0/3 1/1 * ?"
  } ],
  "fixedDelay" : [ {
    "runnable" : {
      "target" : "com.example.Processor.purge"
    },
    "initialDelay" : 5000,
    "interval" : 5000
  } ],
  "fixedRate" : [ {
    "runnable" : {
      "target" : "com.example.Processor.retrieveIssues"
    },
    "initialDelay" : 10000,
    "interval" : 3000
  } ],
  "custom" : [ {
    "runnable" : {
      "target" : "com.example.Processor$CustomTriggeredRunnable"
    },
    "trigger" : "com.example.Processor$CustomTrigger@5f4e6738"
  } ]
}
```

21.1.1. Response Structure

The response contains details of the application's scheduled tasks. The following table describes the structure of the response:

Path	Type	Description
`cron`	`Array`	Cron tasks, if any.
`cron.[].runnable.target`	`String`	Target that will be executed.
`cron.[].expression`	`String`	Cron expression.
`fixedDelay`	`Array`	Fixed delay tasks, if any.
`fixedDelay.[].runnable.target`	`String`	Target that will be executed.
`fixedDelay.[].initialDelay`	`Number`	Delay, in milliseconds, before first execution.
`fixedDelay.[].interval`	`Number`	Interval, in milliseconds, between the end of the last execution and the start of the next.
`fixedRate`	`Array`	Fixed rate tasks, if any.
`fixedRate.[].runnable.target`	`String`	Target that will be executed.
`fixedRate.[].interval`	`Number`	Interval, in milliseconds, between the start of each execution.
`fixedRate.[].initialDelay`	`Number`	Delay, in milliseconds, before first execution.
`custom`	`Array`	Tasks with custom triggers, if any.
`custom.[].runnable.target`	`String`	Target that will be executed.
`custom.[].trigger`	`String`	Trigger for the task.

Chapter 22. Sessions (`sessions`)

The `sessions` endpoint provides information about the application's HTTP sessions that are managed by Spring Session.

22.1. Retrieving Sessions

To retrieve the sessions, make a `GET` request to `/actuator/sessions`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/sessions?username=alice' -i -X GET
```

The preceding examples retrieves all of the sessions for the user whose username is `alice`. The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 753

{
  "sessions" : [ {
    "id" : "173df4d7-9fb5-4fc6-a9f0-312425c95ff5",
    "attributeNames" : [ ],
    "creationTime" : "2022-10-20T00:35:02.927Z",
    "lastAccessedTime" : "2022-10-20T12:34:17.927Z",
    "maxInactiveInterval" : 1800,
    "expired" : false
  }, {
    "id" : "a58485c9-4c8f-4db7-85f7-b0218cc0de85",
    "attributeNames" : [ ],
    "creationTime" : "2022-10-20T10:35:02.927Z",
    "lastAccessedTime" : "2022-10-20T12:34:50.927Z",
    "maxInactiveInterval" : 1800,
    "expired" : false
  }, {
    "id" : "4db5efcc-99cb-4d05-a52c-b49acfbb7ea9",
    "attributeNames" : [ ],
    "creationTime" : "2022-10-20T07:35:02.927Z",
    "lastAccessedTime" : "2022-10-20T12:34:25.927Z",
    "maxInactiveInterval" : 1800,
    "expired" : false
  } ]
}
```

22.1.1. Query Parameters

The endpoint uses query parameters to limit the sessions that it returns. The following table shows the single required query parameter:

Parameter	Description
`username`	Name of the user.

22.1.2. Response Structure

The response contains details of the matching sessions. The following table describes the structure of the response:

Path	Type	Description
`sessions`	`Array`	Sessions for the given username.
`sessions.[].id`	`String`	ID of the session.
`sessions.[].attributeNames`	`Array`	Names of the attributes stored in the session.
`sessions.[].creationTime`	`String`	Timestamp of when the session was created.
`sessions.[].lastAccessedTime`	`String`	Timestamp of when the session was last accessed.
`sessions.[].maxInactiveInterval`	`Number`	Maximum permitted period of inactivity, in seconds, before the session will expire.
`sessions.[].expired`	`Boolean`	Whether the session has expired.

22.2. Retrieving a Single Session

To retrieve a single session, make a `GET` request to `/actuator/sessions/{id}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/sessions/4db5efcc-99cb-4d05-a52c-b49acfbb7ea9'
-i -X GET
```

The preceding example retrieves the session with the `id` of `4db5efcc-99cb-4d05-a52c-b49acfbb7ea9`. The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 228

{
  "id" : "4db5efcc-99cb-4d05-a52c-b49acfbb7ea9",
  "attributeNames" : [ ],
  "creationTime" : "2022-10-20T07:35:02.927Z",
  "lastAccessedTime" : "2022-10-20T12:34:25.927Z",
  "maxInactiveInterval" : 1800,
  "expired" : false
}
```

22.2.1. Response Structure

The response contains details of the requested session. The following table describes the structure of the response:

Path	Type	Description
`id`	`String`	ID of the session.
`attributeNames`	`Array`	Names of the attributes stored in the session.
`creationTime`	`String`	Timestamp of when the session was created.
`lastAccessedTime`	`String`	Timestamp of when the session was last accessed.
`maxInactiveInterval`	`Number`	Maximum permitted period of inactivity, in seconds, before the session will expire.
`expired`	`Boolean`	Whether the session has expired.

22.3. Deleting a Session

To delete a session, make a `DELETE` request to `/actuator/sessions/{id}`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/sessions/4db5efcc-99cb-4d05-a52c-b49acfbb7ea9'
-i -X DELETE
```

The preceding example deletes the session with the `id` of `4db5efcc-99cb-4d05-a52c-b49acfbb7ea9`.

Chapter 23. Shutdown (shutdown)

The shutdown endpoint is used to shut down the application.

23.1. Shutting Down the Application

To shut down the application, make a POST request to /actuator/shutdown, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/shutdown' -i -X POST
```

A response similar to the following is produced:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 41

{
  "message" : "Shutting down, bye..."
}
```

23.1.1. Response Structure

The response contains details of the result of the shutdown request. The following table describes the structure of the response:

Path	Type	Description
message	String	Message describing the result of the request.

Chapter 24. Application Startup (`startup`)

The `startup` endpoint provides information about the application's startup sequence.

24.1. Retrieving the Application Startup Steps

The application startup steps can either be retrieved as a snapshot (`GET`) or drained from the buffer (`POST`).

24.1.1. Retrieving a snapshot of the Application Startup Steps

To retrieve the steps recorded so far during the application startup phase, make a `GET` request to `/actuator/startup`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/startup' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 839

{
  "springBootVersion" : "2.7.5",
  "timeline" : {
    "startTime" : "2022-10-20T12:35:03.848Z",
    "events" : [ {
      "endTime" : "2022-10-20T12:35:04.085Z",
      "duration" : "PT0S",
      "startupStep" : {
        "name" : "spring.beans.instantiate",
        "id" : 3,
        "tags" : [ {
          "key" : "beanName",
          "value" : "homeController"
        } ],
        "parentId" : 2
      },
      "startTime" : "2022-10-20T12:35:04.085Z"
    }, {
      "endTime" : "2022-10-20T12:35:04.085Z",
      "duration" : "PT0S",
      "startupStep" : {
        "name" : "spring.boot.application.starting",
        "id" : 2,
        "tags" : [ {
          "key" : "mainApplicationClass",
          "value" : "com.example.startup.StartupApplication"
        } ]
      },
      "startTime" : "2022-10-20T12:35:04.085Z"
    } ]
  }
}
```

24.1.2. Draining the Application Startup Steps

To drain and return the steps recorded so far during the application startup phase, make a `POST` request to `/actuator/startup`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/startup' -i -X POST
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v3+json
Content-Length: 847

{
  "springBootVersion" : "2.7.5",
  "timeline" : {
    "startTime" : "2022-10-20T12:35:03.848Z",
    "events" : [ {
      "endTime" : "2022-10-20T12:35:04.017Z",
      "duration" : "PT0.001S",
      "startupStep" : {
        "name" : "spring.beans.instantiate",
        "id" : 1,
        "tags" : [ {
          "key" : "beanName",
          "value" : "homeController"
        } ],
        "parentId" : 0
      },
      "startTime" : "2022-10-20T12:35:04.016Z"
    }, {
      "endTime" : "2022-10-20T12:35:04.017Z",
      "duration" : "PT0.002S",
      "startupStep" : {
        "name" : "spring.boot.application.starting",
        "id" : 0,
        "tags" : [ {
          "key" : "mainApplicationClass",
          "value" : "com.example.startup.StartupApplication"
        } ]
      },
      "startTime" : "2022-10-20T12:35:04.015Z"
    } ]
  }
}
```

24.1.3. Response Structure

The response contains details of the application startup steps. The following table describes the structure of the response:

Path	Type	Description
`springBootVersion`	`String`	Spring Boot version for this application.
`timeline.startTime`	`String`	Start time of the application.
`timeline.events`	`Array`	An array of steps collected during application startup so far.

Path	Type	Description
`timeline.events.[].startTime`	`String`	The timestamp of the start of this event.
`timeline.events.[].endTime`	`String`	The timestamp of the end of this event.
`timeline.events.[].duration`	`String`	The precise duration of this event.
`timeline.events.[].startupStep.name`	`String`	The name of the StartupStep.
`timeline.events.[].startupStep.id`	`Number`	The id of this StartupStep.
`timeline.events.[].startupStep.parentId`	`Number`	The parent id for this StartupStep.
`timeline.events.[].startupStep.tags`	`Array`	An array of key/value pairs with additional step info.
`timeline.events.[].startupStep.tags[].key`	`String`	The key of the StartupStep Tag.
`timeline.events.[].startupStep.tags[].value`	`String`	The value of the StartupStep Tag.

Chapter 25. Thread Dump (`threaddump`)

The `threaddump` endpoint provides a thread dump from the application's JVM.

25.1. Retrieving the Thread Dump as JSON

To retrieve the thread dump as JSON, make a `GET` request to `/actuator/threaddump` with an appropriate `Accept` header, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/threaddump' -i -X GET \
    -H 'Accept: application/json'
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: 6209

{
  "threads" : [ {
    "threadName" : "Thread-63",
    "threadId" : 384,
    "blockedTime" : -1,
    "blockedCount" : 0,
    "waitedTime" : -1,
    "waitedCount" : 1,
    "lockName" : "java.util.concurrent.CountDownLatch$Sync@4035eace",
    "lockOwnerId" : -1,
    "inNative" : false,
    "suspended" : false,
    "threadState" : "WAITING",
    "stackTrace" : [ {
      "methodName" : "park",
      "fileName" : "Unsafe.java",
      "lineNumber" : -2,
      "className" : "sun.misc.Unsafe",
      "nativeMethod" : true
    }, {
      "methodName" : "park",
      "fileName" : "LockSupport.java",
      "lineNumber" : 175,
      "className" : "java.util.concurrent.locks.LockSupport",
      "nativeMethod" : false
    }, {
      "methodName" : "parkAndCheckInterrupt",
      "fileName" : "AbstractQueuedSynchronizer.java",
      "lineNumber" : 836,
      "className" : "java.util.concurrent.locks.AbstractQueuedSynchronizer",
```

```
      "nativeMethod" : false
    }, {
      "methodName" : "doAcquireSharedInterruptibly",
      "fileName" : "AbstractQueuedSynchronizer.java",
      "lineNumber" : 997,
      "className" : "java.util.concurrent.locks.AbstractQueuedSynchronizer",
      "nativeMethod" : false
    }, {
      "methodName" : "acquireSharedInterruptibly",
      "fileName" : "AbstractQueuedSynchronizer.java",
      "lineNumber" : 1304,
      "className" : "java.util.concurrent.locks.AbstractQueuedSynchronizer",
      "nativeMethod" : false
    }, {
      "methodName" : "await",
      "fileName" : "CountDownLatch.java",
      "lineNumber" : 231,
      "className" : "java.util.concurrent.CountDownLatch",
      "nativeMethod" : false
    }, {
      "methodName" : "lambda$jsonThreadDump$0",
      "fileName" : "ThreadDumpEndpointDocumentationTests.java",
      "lineNumber" : 56,
      "className" :
"org.springframework.boot.actuate.autoconfigure.endpoint.web.documentation.ThreadDumpE
ndpointDocumentationTests",
      "nativeMethod" : false
    }, {
      "methodName" : "run",
      "lineNumber" : -1,
      "className" :
"org.springframework.boot.actuate.autoconfigure.endpoint.web.documentation.ThreadDumpE
ndpointDocumentationTests$$Lambda$2700/68815337",
      "nativeMethod" : false
    }, {
      "methodName" : "run",
      "fileName" : "Thread.java",
      "lineNumber" : 750,
      "className" : "java.lang.Thread",
      "nativeMethod" : false
    } ],
    "lockedMonitors" : [ ],
    "lockedSynchronizers" : [ {
      "className" : "java.util.concurrent.locks.ReentrantLock$NonfairSync",
      "identityHashCode" : 347405552
    } ],
    "lockInfo" : {
      "className" : "java.util.concurrent.CountDownLatch$Sync",
      "identityHashCode" : 1077275342
    }
  }, {
```

```
    "threadName" : "Thread-62",
    "threadId" : 383,
    "blockedTime" : -1,
    "blockedCount" : 0,
    "waitedTime" : -1,
    "waitedCount" : 1,
    "lockOwnerId" : -1,
    "inNative" : false,
    "suspended" : false,
    "threadState" : "TIMED_WAITING",
    "stackTrace" : [ {
      "methodName" : "sleep",
      "fileName" : "Thread.java",
      "lineNumber" : -2,
      "className" : "java.lang.Thread",
      "nativeMethod" : true
    }, {
      "methodName" : "performShutdown",
      "fileName" : "ShutdownEndpoint.java",
      "lineNumber" : 65,
      "className" : "org.springframework.boot.actuate.context.ShutdownEndpoint",
      "nativeMethod" : false
    }, {
      "methodName" : "run",
      "lineNumber" : -1,
      "className" :
"org.springframework.boot.actuate.context.ShutdownEndpoint$$Lambda$2693/1924429255",
      "nativeMethod" : false
    }, {
      "methodName" : "run",
      "fileName" : "Thread.java",
      "lineNumber" : 750,
      "className" : "java.lang.Thread",
      "nativeMethod" : false
    } ],
    "lockedMonitors" : [ ],
    "lockedSynchronizers" : [ ]
  }, {
    "threadName" : "pool-14-thread-1",
    "threadId" : 377,
    "blockedTime" : -1,
    "blockedCount" : 0,
    "waitedTime" : -1,
    "waitedCount" : 0,
    "lockOwnerId" : -1,
    "inNative" : false,
    "suspended" : false,
    "threadState" : "RUNNABLE",
    "stackTrace" : [ {
      "methodName" : "isInterrupted",
      "fileName" : "Thread.java",
```

```
      "lineNumber" : -2,
      "className" : "java.lang.Thread",
      "nativeMethod" : true
    }, {
      "methodName" : "interrupted",
      "fileName" : "Thread.java",
      "lineNumber" : 952,
      "className" : "java.lang.Thread",
      "nativeMethod" : false
    }, {
      "methodName" : "acquireInterruptibly",
      "fileName" : "AbstractQueuedSynchronizer.java",
      "lineNumber" : 1219,
      "className" : "java.util.concurrent.locks.AbstractQueuedSynchronizer",
      "nativeMethod" : false
    }, {
      "methodName" : "lockInterruptibly",
      "fileName" : "ReentrantLock.java",
      "lineNumber" : 335,
      "className" : "java.util.concurrent.locks.ReentrantLock",
      "nativeMethod" : false
    }, {
      "methodName" : "take",
      "fileName" : "ScheduledThreadPoolExecutor.java",
      "lineNumber" : 1076,
      "className" :
"java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue",
      "nativeMethod" : false
    }, {
      "methodName" : "take",
      "fileName" : "ScheduledThreadPoolExecutor.java",
      "lineNumber" : 809,
      "className" :
"java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue",
      "nativeMethod" : false
    }, {
      "methodName" : "getTask",
      "fileName" : "ThreadPoolExecutor.java",
      "lineNumber" : 1074,
      "className" : "java.util.concurrent.ThreadPoolExecutor",
      "nativeMethod" : false
    }, {
      "methodName" : "runWorker",
      "fileName" : "ThreadPoolExecutor.java",
      "lineNumber" : 1134,
      "className" : "java.util.concurrent.ThreadPoolExecutor",
      "nativeMethod" : false
    }, {
      "methodName" : "run",
      "fileName" : "ThreadPoolExecutor.java",
      "lineNumber" : 624,
```

```
      "className" : "java.util.concurrent.ThreadPoolExecutor$Worker",
      "nativeMethod" : false
    }, {
      "methodName" : "run",
      "fileName" : "Thread.java",
      "lineNumber" : 750,
      "className" : "java.lang.Thread",
      "nativeMethod" : false
    } ],
    "lockedMonitors" : [ ],
    "lockedSynchronizers" : [ ]
  } ]
}
```

25.1.1. Response Structure

The response contains details of the JVM's threads. The following table describes the structure of the response:

Path	Type	Description
`threads`	`Array`	JVM's threads.
`threads.[].blockedCount`	`Number`	Total number of times that the thread has been blocked.
`threads.[].blockedTime`	`Number`	Time in milliseconds that the thread has spent blocked. -1 if thread contention monitoring is disabled.
`threads.[].daemon`	`Boolean`	Whether the thread is a daemon thread. Only available on Java 9 or later.
`threads.[].inNative`	`Boolean`	Whether the thread is executing native code.
`threads.[].lockName`	`String`	Description of the object on which the thread is blocked, if any.
`threads.[].lockInfo`	`Object`	Object for which the thread is blocked waiting.
`threads.[].lockInfo.className`	`String`	Fully qualified class name of the lock object.
`threads.[].lockInfo.identityHashCode`	`Number`	Identity hash code of the lock object.
`threads.[].lockedMonitors`	`Array`	Monitors locked by this thread, if any
`threads.[].lockedMonitors.[].className`	`String`	Class name of the lock object.

Path	Type	Description
threads.[].lockedMonitors.[].identityHashCode	Number	Identity hash code of the lock object.
threads.[].lockedMonitors.[].lockedStackDepth	Number	Stack depth where the monitor was locked.
threads.[].lockedMonitors.[].lockedStackFrame	Object	Stack frame that locked the monitor.
threads.[].lockedSynchronizers	Array	Synchronizers locked by this thread.
threads.[].lockedSynchronizers.[].className	String	Class name of the locked synchronizer.
threads.[].lockedSynchronizers.[].identityHashCode	Number	Identity hash code of the locked synchronizer.
threads.[].lockOwnerId	Number	ID of the thread that owns the object on which the thread is blocked. -1 if the thread is not blocked.
threads.[].lockOwnerName	String	Name of the thread that owns the object on which the thread is blocked, if any.
threads.[].priority	Number	Priority of the thread. Only available on Java 9 or later.
threads.[].stackTrace	Array	Stack trace of the thread.
threads.[].stackTrace.[].classLoaderName	String	Name of the class loader of the class that contains the execution point identified by this entry, if any. Only available on Java 9 or later.
threads.[].stackTrace.[].className	String	Name of the class that contains the execution point identified by this entry.
threads.[].stackTrace.[].fileName	String	Name of the source file that contains the execution point identified by this entry, if any.
threads.[].stackTrace.[].lineNumber	Number	Line number of the execution point identified by this entry. Negative if unknown.
threads.[].stackTrace.[].methodName	String	Name of the method.

Path	Type	Description
`threads.[].stackTrace.[].moduleName`	`String`	Name of the module that contains the execution point identified by this entry, if any. Only available on Java 9 or later.
`threads.[].stackTrace.[].moduleVersion`	`String`	Version of the module that contains the execution point identified by this entry, if any. Only available on Java 9 or later.
`threads.[].stackTrace.[].nativeMethod`	`Boolean`	Whether the execution point is a native method.
`threads.[].suspended`	`Boolean`	Whether the thread is suspended.
`threads.[].threadId`	`Number`	ID of the thread.
`threads.[].threadName`	`String`	Name of the thread.
`threads.[].threadState`	`String`	State of the thread (`NEW`, `RUNNABLE`, `BLOCKED`, `WAITING`, `TIMED_WAITING`, `TERMINATED`).
`threads.[].waitedCount`	`Number`	Total number of times that the thread has waited for notification.
`threads.[].waitedTime`	`Number`	Time in milliseconds that the thread has spent waiting. -1 if thread contention monitoring is disabled

25.2. Retrieving the Thread Dump as Text

To retrieve the thread dump as text, make a `GET` request to `/actuator/threaddump` that accepts `text/plain`, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/threaddump' -i -X GET \
    -H 'Accept: text/plain'
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: text/plain;charset=UTF-8
Content-Length: 46836

2022-10-20 12:35:04
```

```
Full thread dump OpenJDK 64-Bit Server VM (25.345-b01 mixed mode):

"Thread-62" - Thread t@383
   java.lang.Thread.State: TIMED_WAITING
    at java.lang.Thread.sleep(Native Method)
    at
org.springframework.boot.actuate.context.ShutdownEndpoint.performShutdown(ShutdownEndp
oint.java:65)
    at
org.springframework.boot.actuate.context.ShutdownEndpoint$$Lambda$2693/1924429255.run(
Unknown Source)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"pool-14-thread-1" - Thread t@377
   java.lang.Thread.State: RUNNABLE
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.siftUp(ScheduledThre
adPoolExecutor.java:886)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.offer(ScheduledThrea
dPoolExecutor.java:1020)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.add(ScheduledThreadP
oolExecutor.java:1037)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.add(ScheduledThreadP
oolExecutor.java:809)
    at
java.util.concurrent.ScheduledThreadPoolExecutor.delayedExecute(ScheduledThreadPoolExe
cutor.java:328)
    at
java.util.concurrent.ScheduledThreadPoolExecutor.schedule(ScheduledThreadPoolExecutor.
java:533)
    at
java.util.concurrent.Executors$DelegatedScheduledExecutorService.schedule(Executors.ja
va:729)
    at
org.springframework.scheduling.concurrent.ReschedulingRunnable.schedule(ReschedulingRu
nnable.java:82)
    - locked <516724b5> (a java.lang.Object)
    at
org.springframework.scheduling.concurrent.ReschedulingRunnable.run(ReschedulingRunnabl
e.java:101)
    - locked <516724b5> (a java.lang.Object)
    at java.util.concurrent.Executors$RunnableAdapter.call(Executors.java:511)
    at java.util.concurrent.FutureTask.run(FutureTask.java:266)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$ScheduledFutureTask.access$201(Schedu
```

```
ledThreadPoolExecutor.java:180)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$ScheduledFutureTask.run(ScheduledThre
adPoolExecutor.java:293)
    at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1149)
    at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:624)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - Locked <7248b33c> (a java.util.concurrent.ThreadPoolExecutor$Worker)
    - Locked <96f0210> (a java.util.concurrent.locks.ReentrantLock$NonfairSync)

"http-nio-auto-14-Acceptor" - Thread t@372
   java.lang.Thread.State: RUNNABLE
    at sun.nio.ch.ServerSocketChannelImpl.accept0(Native Method)
    at sun.nio.ch.ServerSocketChannelImpl.accept(ServerSocketChannelImpl.java:421)
    at sun.nio.ch.ServerSocketChannelImpl.accept(ServerSocketChannelImpl.java:249)
    - locked <28059ada> (a java.lang.Object)
    at org.apache.tomcat.util.net.NioEndpoint.serverSocketAccept(NioEndpoint.java:547)
    at org.apache.tomcat.util.net.NioEndpoint.serverSocketAccept(NioEndpoint.java:79)
    at org.apache.tomcat.util.net.Acceptor.run(Acceptor.java:129)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"http-nio-auto-14-Poller" - Thread t@371
   java.lang.Thread.State: RUNNABLE
    at sun.nio.ch.EPollArrayWrapper.epollWait(Native Method)
    at sun.nio.ch.EPollArrayWrapper.poll(EPollArrayWrapper.java:269)
    at sun.nio.ch.EPollSelectorImpl.doSelect(EPollSelectorImpl.java:93)
    at sun.nio.ch.SelectorImpl.lockAndDoSelect(SelectorImpl.java:86)
    - locked <284c7770> (a sun.nio.ch.Util$3)
    - locked <4066ac40> (a java.util.Collections$UnmodifiableSet)
    - locked <31e849de> (a sun.nio.ch.EPollSelectorImpl)
    at sun.nio.ch.SelectorImpl.select(SelectorImpl.java:97)
    at org.apache.tomcat.util.net.NioEndpoint$Poller.run(NioEndpoint.java:805)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"http-nio-auto-14-exec-10" - Thread t@370
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <353fd673> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
```

```
    at java.util.concurrent.LinkedBlockingQueue.take(LinkedBlockingQueue.java:442)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:141)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:33)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1114
)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:11
76)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:6
59)
    at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"http-nio-auto-14-exec-9" - Thread t@369
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <353fd673> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at java.util.concurrent.LinkedBlockingQueue.take(LinkedBlockingQueue.java:442)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:141)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:33)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1114
)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:11
76)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:6
59)
    at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"http-nio-auto-14-exec-8" - Thread t@368
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <353fd673> (a
```

```
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at java.util.concurrent.LinkedBlockingQueue.take(LinkedBlockingQueue.java:442)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:141)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:33)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1114
)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:11
76)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:6
59)
    at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"http-nio-auto-14-exec-7" - Thread t@367
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <353fd673> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at java.util.concurrent.LinkedBlockingQueue.take(LinkedBlockingQueue.java:442)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:141)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:33)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1114
)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:11
76)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:6
59)
    at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None
```

```
"http-nio-auto-14-exec-6" - Thread t@366
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <353fd673> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at java.util.concurrent.LinkedBlockingQueue.take(LinkedBlockingQueue.java:442)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:141)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:33)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1114
)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:11
76)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:6
59)
    at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"http-nio-auto-14-exec-5" - Thread t@365
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <353fd673> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at java.util.concurrent.LinkedBlockingQueue.take(LinkedBlockingQueue.java:442)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:141)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:33)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1114
)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:11
76)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:6
59)
    at
```

```
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"http-nio-auto-14-exec-4" - Thread t@364
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <353fd673> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at java.util.concurrent.LinkedBlockingQueue.take(LinkedBlockingQueue.java:442)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:141)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:33)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1114
)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:11
76)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:6
59)
    at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"http-nio-auto-14-exec-3" - Thread t@363
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <353fd673> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at java.util.concurrent.LinkedBlockingQueue.take(LinkedBlockingQueue.java:442)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:141)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:33)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1114
)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:11
```

```
76)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:6
59)
    at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"http-nio-auto-14-exec-2" - Thread t@362
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <353fd673> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at java.util.concurrent.LinkedBlockingQueue.take(LinkedBlockingQueue.java:442)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:141)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:33)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1114
)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:11
76)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:6
59)
    at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"http-nio-auto-14-exec-1" - Thread t@361
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <353fd673> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at java.util.concurrent.LinkedBlockingQueue.take(LinkedBlockingQueue.java:442)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:141)
    at org.apache.tomcat.util.threads.TaskQueue.take(TaskQueue.java:33)
```

```
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1114
)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:11
76)
    at
org.apache.tomcat.util.threads.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:6
59)
    at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"Catalina-utility-2" - Thread t@360
   java.lang.Thread.State: TIMED_WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <7e03d053> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.parkNanos(LockSupport.java:215)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.awaitNanos(Abstr
actQueuedSynchronizer.java:2078)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.take(ScheduledThread
PoolExecutor.java:1093)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.take(ScheduledThread
PoolExecutor.java:809)
    at java.util.concurrent.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1074)
    at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1134)
    at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:624)
    at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"container-0" - Thread t@359
   java.lang.Thread.State: TIMED_WAITING
    at java.lang.Thread.sleep(Native Method)
    at org.apache.catalina.core.StandardServer.await(StandardServer.java:566)
    at
org.springframework.boot.web.embedded.tomcat.TomcatWebServer$1.run(TomcatWebServer.jav
a:197)

   Locked ownable synchronizers:
    - None
```

```
"Catalina-utility-1" - Thread t@358
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <7e03d053> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.take(ScheduledThread
PoolExecutor.java:1088)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.take(ScheduledThread
PoolExecutor.java:809)
    at java.util.concurrent.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1074)
    at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1134)
    at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:624)
    at
org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"server" - Thread t@356
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <bf2677f> (a java.util.concurrent.CountDownLatch$Sync)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer.parkAndCheckInterrupt(AbstractQu
euedSynchronizer.java:836)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer.doAcquireSharedInterruptibly(Abs
tractQueuedSynchronizer.java:997)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer.acquireSharedInterruptibly(Abstr
actQueuedSynchronizer.java:1304)
    at java.util.concurrent.CountDownLatch.await(CountDownLatch.java:231)
    at
reactor.core.publisher.BlockingSingleSubscriber.blockingGet(BlockingSingleSubscriber.j
ava:87)
    at reactor.core.publisher.Mono.block(Mono.java:1707)
    at
org.springframework.boot.web.embedded.netty.NettyWebServer$1.run(NettyWebServer.java:1
80)

   Locked ownable synchronizers:
    - None
```

```
"HikariPool-1 housekeeper" - Thread t@345
   java.lang.Thread.State: TIMED_WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <78277966> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.parkNanos(LockSupport.java:215)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.awaitNanos(Abstr
actQueuedSynchronizer.java:2078)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.take(ScheduledThread
PoolExecutor.java:1093)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.take(ScheduledThread
PoolExecutor.java:809)
    at java.util.concurrent.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1074)
    at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1134)
    at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:624)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"Keep-Alive-Timer" - Thread t@278
   java.lang.Thread.State: TIMED_WAITING
    at java.lang.Thread.sleep(Native Method)
    at sun.net.www.http.KeepAliveCache.run(KeepAliveCache.java:172)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"reactor-http-epoll-8" - Thread t@140
   java.lang.Thread.State: RUNNABLE
    at io.netty.channel.epoll.Native.epollWait(Native Method)
    at io.netty.channel.epoll.Native.epollWait(Native.java:209)
    at io.netty.channel.epoll.Native.epollWait(Native.java:202)
    at
io.netty.channel.epoll.EpollEventLoop.epollWaitNoTimerChange(EpollEventLoop.java:306)
    at io.netty.channel.epoll.EpollEventLoop.run(EpollEventLoop.java:363)
    at
io.netty.util.concurrent.SingleThreadEventExecutor$4.run(SingleThreadEventExecutor.jav
a:997)
    at io.netty.util.internal.ThreadExecutorMap$2.run(ThreadExecutorMap.java:74)
    at
io.netty.util.concurrent.FastThreadLocalRunnable.run(FastThreadLocalRunnable.java:30)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None
```

```
"reactor-http-epoll-7" - Thread t@139
   java.lang.Thread.State: RUNNABLE
    at io.netty.channel.epoll.Native.epollWait(Native Method)
    at io.netty.channel.epoll.Native.epollWait(Native.java:209)
    at io.netty.channel.epoll.Native.epollWait(Native.java:202)
    at
io.netty.channel.epoll.EpollEventLoop.epollWaitNoTimerChange(EpollEventLoop.java:306)
    at io.netty.channel.epoll.EpollEventLoop.run(EpollEventLoop.java:363)
    at
io.netty.util.concurrent.SingleThreadEventExecutor$4.run(SingleThreadEventExecutor.jav
a:997)
    at io.netty.util.internal.ThreadExecutorMap$2.run(ThreadExecutorMap.java:74)
    at
io.netty.util.concurrent.FastThreadLocalRunnable.run(FastThreadLocalRunnable.java:30)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"reactor-http-epoll-6" - Thread t@138
   java.lang.Thread.State: RUNNABLE
    at io.netty.channel.epoll.Native.epollWait(Native Method)
    at io.netty.channel.epoll.Native.epollWait(Native.java:209)
    at io.netty.channel.epoll.Native.epollWait(Native.java:202)
    at
io.netty.channel.epoll.EpollEventLoop.epollWaitNoTimerChange(EpollEventLoop.java:306)
    at io.netty.channel.epoll.EpollEventLoop.run(EpollEventLoop.java:363)
    at
io.netty.util.concurrent.SingleThreadEventExecutor$4.run(SingleThreadEventExecutor.jav
a:997)
    at io.netty.util.internal.ThreadExecutorMap$2.run(ThreadExecutorMap.java:74)
    at
io.netty.util.concurrent.FastThreadLocalRunnable.run(FastThreadLocalRunnable.java:30)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"reactor-http-epoll-5" - Thread t@137
   java.lang.Thread.State: RUNNABLE
    at io.netty.channel.epoll.Native.epollWait(Native Method)
    at io.netty.channel.epoll.Native.epollWait(Native.java:209)
    at io.netty.channel.epoll.Native.epollWait(Native.java:202)
    at
io.netty.channel.epoll.EpollEventLoop.epollWaitNoTimerChange(EpollEventLoop.java:306)
    at io.netty.channel.epoll.EpollEventLoop.run(EpollEventLoop.java:363)
    at
io.netty.util.concurrent.SingleThreadEventExecutor$4.run(SingleThreadEventExecutor.jav
a:997)
    at io.netty.util.internal.ThreadExecutorMap$2.run(ThreadExecutorMap.java:74)
```

```
    at
io.netty.util.concurrent.FastThreadLocalRunnable.run(FastThreadLocalRunnable.java:30)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"reactor-http-epoll-4" - Thread t@136
   java.lang.Thread.State: RUNNABLE
    at io.netty.channel.epoll.Native.epollWait(Native Method)
    at io.netty.channel.epoll.Native.epollWait(Native.java:209)
    at io.netty.channel.epoll.Native.epollWait(Native.java:202)
    at
io.netty.channel.epoll.EpollEventLoop.epollWaitNoTimerChange(EpollEventLoop.java:306)
    at io.netty.channel.epoll.EpollEventLoop.run(EpollEventLoop.java:363)
    at
io.netty.util.concurrent.SingleThreadEventExecutor$4.run(SingleThreadEventExecutor.jav
a:997)
    at io.netty.util.internal.ThreadExecutorMap$2.run(ThreadExecutorMap.java:74)
    at
io.netty.util.concurrent.FastThreadLocalRunnable.run(FastThreadLocalRunnable.java:30)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"reactor-http-epoll-3" - Thread t@135
   java.lang.Thread.State: RUNNABLE
    at io.netty.channel.epoll.Native.epollWait(Native Method)
    at io.netty.channel.epoll.Native.epollWait(Native.java:209)
    at io.netty.channel.epoll.Native.epollWait(Native.java:202)
    at
io.netty.channel.epoll.EpollEventLoop.epollWaitNoTimerChange(EpollEventLoop.java:306)
    at io.netty.channel.epoll.EpollEventLoop.run(EpollEventLoop.java:363)
    at
io.netty.util.concurrent.SingleThreadEventExecutor$4.run(SingleThreadEventExecutor.jav
a:997)
    at io.netty.util.internal.ThreadExecutorMap$2.run(ThreadExecutorMap.java:74)
    at
io.netty.util.concurrent.FastThreadLocalRunnable.run(FastThreadLocalRunnable.java:30)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"reactor-http-epoll-2" - Thread t@134
   java.lang.Thread.State: RUNNABLE
    at io.netty.channel.epoll.Native.epollWait(Native Method)
    at io.netty.channel.epoll.Native.epollWait(Native.java:209)
    at io.netty.channel.epoll.Native.epollWait(Native.java:202)
    at
```

```
io.netty.channel.epoll.EpollEventLoop.epollWaitNoTimerChange(EpollEventLoop.java:306)
    at io.netty.channel.epoll.EpollEventLoop.run(EpollEventLoop.java:363)
    at
io.netty.util.concurrent.SingleThreadEventExecutor$4.run(SingleThreadEventExecutor.jav
a:997)
    at io.netty.util.internal.ThreadExecutorMap$2.run(ThreadExecutorMap.java:74)
    at
io.netty.util.concurrent.FastThreadLocalRunnable.run(FastThreadLocalRunnable.java:30)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"reactor-http-epoll-1" - Thread t@133
   java.lang.Thread.State: RUNNABLE
    at io.netty.channel.epoll.Native.epollWait(Native Method)
    at io.netty.channel.epoll.Native.epollWait(Native.java:209)
    at io.netty.channel.epoll.Native.epollWait(Native.java:202)
    at
io.netty.channel.epoll.EpollEventLoop.epollWaitNoTimerChange(EpollEventLoop.java:306)
    at io.netty.channel.epoll.EpollEventLoop.run(EpollEventLoop.java:363)
    at
io.netty.util.concurrent.SingleThreadEventExecutor$4.run(SingleThreadEventExecutor.jav
a:997)
    at io.netty.util.internal.ThreadExecutorMap$2.run(ThreadExecutorMap.java:74)
    at
io.netty.util.concurrent.FastThreadLocalRunnable.run(FastThreadLocalRunnable.java:30)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"boundedElastic-1" - Thread t@15
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <3360b45f> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.take(ScheduledThread
PoolExecutor.java:1081)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.take(ScheduledThread
PoolExecutor.java:809)
    at java.util.concurrent.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1074)
    at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1134)
    at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:624)
    at java.lang.Thread.run(Thread.java:750)
```

```
   Locked ownable synchronizers:
    - None

"boundedElastic-evictor-1" - Thread t@14
   java.lang.Thread.State: TIMED_WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <53016b28> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.parkNanos(LockSupport.java:215)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.awaitNanos(Abstr
actQueuedSynchronizer.java:2078)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.take(ScheduledThread
PoolExecutor.java:1093)
    at
java.util.concurrent.ScheduledThreadPoolExecutor$DelayedWorkQueue.take(ScheduledThread
PoolExecutor.java:809)
    at java.util.concurrent.ThreadPoolExecutor.getTask(ThreadPoolExecutor.java:1074)
    at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1134)
    at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:624)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - None

"/127.0.0.1:57586 to /127.0.0.1:42469 workers Thread 3" - Thread t@13
   java.lang.Thread.State: RUNNABLE
    at sun.nio.ch.EPollArrayWrapper.epollWait(Native Method)
    at sun.nio.ch.EPollArrayWrapper.poll(EPollArrayWrapper.java:269)
    at sun.nio.ch.EPollSelectorImpl.doSelect(EPollSelectorImpl.java:93)
    at sun.nio.ch.SelectorImpl.lockAndDoSelect(SelectorImpl.java:86)
    - locked <4b5037a8> (a sun.nio.ch.Util$3)
    - locked <8ff8bed> (a java.util.Collections$UnmodifiableSet)
    - locked <3e8b14e1> (a sun.nio.ch.EPollSelectorImpl)
    at sun.nio.ch.SelectorImpl.select(SelectorImpl.java:97)
    at sun.nio.ch.SelectorImpl.select(SelectorImpl.java:101)
    at
org.gradle.internal.remote.internal.inet.SocketConnection$SocketInputStream.read(Socke
tConnection.java:185)
    at com.esotericsoftware.kryo.io.Input.fill(Input.java:146)
    at com.esotericsoftware.kryo.io.Input.require(Input.java:178)
    at com.esotericsoftware.kryo.io.Input.readByte(Input.java:295)
    at
org.gradle.internal.serialize.kryo.KryoBackedDecoder.readByte(KryoBackedDecoder.java:8
8)
    at
org.gradle.internal.remote.internal.hub.InterHubMessageSerializer$MessageReader.read(I
nterHubMessageSerializer.java:64)
    at
```

```
org.gradle.internal.remote.internal.hub.InterHubMessageSerializer$MessageReader.read(I
nterHubMessageSerializer.java:52)
    at
org.gradle.internal.remote.internal.inet.SocketConnection.receive(SocketConnection.jav
a:81)
    at
org.gradle.internal.remote.internal.hub.MessageHub$ConnectionReceive.run(MessageHub.ja
va:270)
    at
org.gradle.internal.concurrent.ExecutorPolicy$CatchAndRecordFailures.onExecute(Executo
rPolicy.java:64)
    at
org.gradle.internal.concurrent.ManagedExecutorImpl$1.run(ManagedExecutorImpl.java:48)
    at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1149)
    at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:624)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - Locked <5a63f509> (a java.util.concurrent.ThreadPoolExecutor$Worker)

"/127.0.0.1:57586 to /127.0.0.1:42469 workers Thread 2" - Thread t@12
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <668b6033> (a
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at
org.gradle.internal.remote.internal.hub.queue.EndPointQueue.take(EndPointQueue.java:49
)
    at
org.gradle.internal.remote.internal.hub.MessageHub$ConnectionDispatch.run(MessageHub.j
ava:322)
    at
org.gradle.internal.concurrent.ExecutorPolicy$CatchAndRecordFailures.onExecute(Executo
rPolicy.java:64)
    at
org.gradle.internal.concurrent.ManagedExecutorImpl$1.run(ManagedExecutorImpl.java:48)
    at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1149)
    at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:624)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - Locked <17046283> (a java.util.concurrent.ThreadPoolExecutor$Worker)

"/127.0.0.1:57586 to /127.0.0.1:42469 workers" - Thread t@11
   java.lang.Thread.State: WAITING
    at sun.misc.Unsafe.park(Native Method)
    - parking to wait for <2c2cf63d> (a
```

```
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject)
    at java.util.concurrent.locks.LockSupport.park(LockSupport.java:175)
    at
java.util.concurrent.locks.AbstractQueuedSynchronizer$ConditionObject.await(AbstractQu
euedSynchronizer.java:2039)
    at
org.gradle.internal.remote.internal.hub.queue.EndPointQueue.take(EndPointQueue.java:49
)
    at
org.gradle.internal.remote.internal.hub.MessageHub$Handler.run(MessageHub.java:403)
    at
org.gradle.internal.concurrent.ExecutorPolicy$CatchAndRecordFailures.onExecute(Executo
rPolicy.java:64)
    at
org.gradle.internal.concurrent.ManagedExecutorImpl$1.run(ManagedExecutorImpl.java:48)
    at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1149)
    at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:624)
    at java.lang.Thread.run(Thread.java:750)

   Locked ownable synchronizers:
    - Locked <1ed1993a> (a java.util.concurrent.ThreadPoolExecutor$Worker)

"Signal Dispatcher" - Thread t@4
   java.lang.Thread.State: RUNNABLE

   Locked ownable synchronizers:
    - None

"Finalizer" - Thread t@3
   java.lang.Thread.State: WAITING
    at java.lang.Object.wait(Native Method)
    - waiting on <58f8b0b6> (a java.lang.ref.ReferenceQueue$Lock)
    at java.lang.ref.ReferenceQueue.remove(ReferenceQueue.java:144)
    at java.lang.ref.ReferenceQueue.remove(ReferenceQueue.java:165)
    at java.lang.ref.Finalizer$FinalizerThread.run(Finalizer.java:216)

   Locked ownable synchronizers:
    - None

"Reference Handler" - Thread t@2
   java.lang.Thread.State: WAITING
    at java.lang.Object.wait(Native Method)
    - waiting on <3eb28b54> (a java.lang.ref.Reference$Lock)
    at java.lang.Object.wait(Object.java:502)
    at java.lang.ref.Reference.tryHandlePending(Reference.java:191)
    at java.lang.ref.Reference$ReferenceHandler.run(Reference.java:153)

   Locked ownable synchronizers:
    - None

"Test worker" - Thread t@1
```

```
   java.lang.Thread.State: RUNNABLE
    at sun.management.ThreadImpl.dumpThreads0(Native Method)
    at sun.management.ThreadImpl.dumpAllThreads(ThreadImpl.java:496)
    at sun.management.ThreadImpl.dumpAllThreads(ThreadImpl.java:484)
    at
org.springframework.boot.actuate.management.ThreadDumpEndpoint.getFormattedThreadDump(
ThreadDumpEndpoint.java:51)
    at
org.springframework.boot.actuate.management.ThreadDumpEndpoint.textThreadDump(ThreadDu
mpEndpoint.java:47)
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:62)
    at
sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
    at java.lang.reflect.Method.invoke(Method.java:498)
    at org.springframework.util.ReflectionUtils.invokeMethod(ReflectionUtils.java:282)
    at
org.springframework.boot.actuate.endpoint.invoke.reflect.ReflectiveOperationInvoker.in
voke(ReflectiveOperationInvoker.java:74)
    at
org.springframework.boot.actuate.endpoint.annotation.AbstractDiscoveredOperation.invok
e(AbstractDiscoveredOperation.java:60)
    at
org.springframework.boot.actuate.endpoint.web.servlet.AbstractWebMvcEndpointHandlerMap
ping$ServletWebOperationAdapter.handle(AbstractWebMvcEndpointHandlerMapping.java:353)
    at
org.springframework.boot.actuate.endpoint.web.servlet.AbstractWebMvcEndpointHandlerMap
ping$OperationHandler.handle(AbstractWebMvcEndpointHandlerMapping.java:458)
    at sun.reflect.GeneratedMethodAccessor244.invoke(Unknown Source)
    at
sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
    at java.lang.reflect.Method.invoke(Method.java:498)
    at
org.springframework.web.method.support.InvocableHandlerMethod.doInvoke(InvocableHandle
rMethod.java:205)
    at
org.springframework.web.method.support.InvocableHandlerMethod.invokeForRequest(Invocab
leHandlerMethod.java:150)
    at
org.springframework.web.servlet.mvc.method.annotation.ServletInvocableHandlerMethod.in
vokeAndHandle(ServletInvocableHandlerMethod.java:117)
    at
org.springframework.web.servlet.mvc.method.annotation.RequestMappingHandlerAdapter.inv
okeHandlerMethod(RequestMappingHandlerAdapter.java:895)
    at
org.springframework.web.servlet.mvc.method.annotation.RequestMappingHandlerAdapter.han
dleInternal(RequestMappingHandlerAdapter.java:808)
    at
org.springframework.web.servlet.mvc.method.AbstractHandlerMethodAdapter.handle(Abstrac
tHandlerMethodAdapter.java:87)
    at
```

```
org.springframework.web.servlet.DispatcherServlet.doDispatch(DispatcherServlet.java:10
71)
    at
org.springframework.web.servlet.DispatcherServlet.doService(DispatcherServlet.java:964
)
    at
org.springframework.web.servlet.FrameworkServlet.processRequest(FrameworkServlet.java:
1006)
    at
org.springframework.web.servlet.FrameworkServlet.doGet(FrameworkServlet.java:898)
    at javax.servlet.http.HttpServlet.service(HttpServlet.java:497)
    at
org.springframework.web.servlet.FrameworkServlet.service(FrameworkServlet.java:883)
    at
org.springframework.test.web.servlet.TestDispatcherServlet.service(TestDispatcherServl
et.java:72)
    at javax.servlet.http.HttpServlet.service(HttpServlet.java:584)
    at
org.springframework.mock.web.MockFilterChain$ServletFilterProxy.doFilter(MockFilterCha
in.java:167)
    at org.springframework.mock.web.MockFilterChain.doFilter(MockFilterChain.java:134)
    at org.springframework.test.web.servlet.MockMvc.perform(MockMvc.java:201)
    at
org.springframework.boot.actuate.autoconfigure.endpoint.web.documentation.ThreadDumpEn
dpointDocumentationTests.textThreadDump(ThreadDumpEndpointDocumentationTests.java:186)
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:62)
    at
sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
    at java.lang.reflect.Method.invoke(Method.java:498)
    at
org.junit.platform.commons.util.ReflectionUtils.invokeMethod(ReflectionUtils.java:725)
    at
org.junit.jupiter.engine.execution.MethodInvocation.proceed(MethodInvocation.java:60)
    at
org.junit.jupiter.engine.execution.InvocationInterceptorChain$ValidatingInvocation.pro
ceed(InvocationInterceptorChain.java:131)
    at
org.junit.jupiter.engine.extension.TimeoutExtension.intercept(TimeoutExtension.java:14
9)
    at
org.junit.jupiter.engine.extension.TimeoutExtension.interceptTestableMethod(TimeoutExt
ension.java:140)
    at
org.junit.jupiter.engine.extension.TimeoutExtension.interceptTestMethod(TimeoutExtensi
on.java:84)
    at
org.junit.jupiter.engine.descriptor.TestMethodTestDescriptor$$Lambda$138/837073696.app
ly(Unknown Source)
    at
org.junit.jupiter.engine.execution.ExecutableInvoker$ReflectiveInterceptorCall.lambda$
```

```
ofVoidMethod$0(ExecutableInvoker.java:115)
    at
org.junit.jupiter.engine.execution.ExecutableInvoker$ReflectiveInterceptorCall$$Lambda
$139/1660325375.apply(Unknown Source)
    at
org.junit.jupiter.engine.execution.ExecutableInvoker.lambda$invoke$0(ExecutableInvoker
.java:105)
    at
org.junit.jupiter.engine.execution.ExecutableInvoker$$Lambda$289/1055104416.apply(Unkn
own Source)
    at
org.junit.jupiter.engine.execution.InvocationInterceptorChain$InterceptedInvocation.pr
oceed(InvocationInterceptorChain.java:106)
    at
org.junit.jupiter.engine.execution.InvocationInterceptorChain.proceed(InvocationInterc
eptorChain.java:64)
    at
org.junit.jupiter.engine.execution.InvocationInterceptorChain.chainAndInvoke(Invocatio
nInterceptorChain.java:45)
    at
org.junit.jupiter.engine.execution.InvocationInterceptorChain.invoke(InvocationInterce
ptorChain.java:37)
    at
org.junit.jupiter.engine.execution.ExecutableInvoker.invoke(ExecutableInvoker.java:104
)
    at
org.junit.jupiter.engine.execution.ExecutableInvoker.invoke(ExecutableInvoker.java:98)
    at
org.junit.jupiter.engine.descriptor.TestMethodTestDescriptor.lambda$invokeTestMethod$7
(TestMethodTestDescriptor.java:214)
    at
org.junit.jupiter.engine.descriptor.TestMethodTestDescriptor$$Lambda$329/1414744767.ex
ecute(Unknown Source)
    at
org.junit.platform.engine.support.hierarchical.ThrowableCollector.execute(ThrowableCol
lector.java:73)
    at
org.junit.jupiter.engine.descriptor.TestMethodTestDescriptor.invokeTestMethod(TestMeth
odTestDescriptor.java:210)
    at
org.junit.jupiter.engine.descriptor.TestMethodTestDescriptor.execute(TestMethodTestDes
criptor.java:135)
    at
org.junit.jupiter.engine.descriptor.TestMethodTestDescriptor.execute(TestMethodTestDes
criptor.java:66)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.lambda$executeRecursively$
6(NodeTestTask.java:151)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask$$Lambda$227/724028528.exec
ute(Unknown Source)
```

```
    at
org.junit.platform.engine.support.hierarchical.ThrowableCollector.execute(ThrowableCol
lector.java:73)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.lambda$executeRecursively$
8(NodeTestTask.java:141)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask$$Lambda$226/485475507.invo
ke(Unknown Source)
    at org.junit.platform.engine.support.hierarchical.Node.around(Node.java:137)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.lambda$executeRecursively$
9(NodeTestTask.java:139)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask$$Lambda$225/986944742.exec
ute(Unknown Source)
    at
org.junit.platform.engine.support.hierarchical.ThrowableCollector.execute(ThrowableCol
lector.java:73)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.executeRecursively(NodeTes
tTask.java:138)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.execute(NodeTestTask.java:
95)
    at
org.junit.platform.engine.support.hierarchical.SameThreadHierarchicalTestExecutorServi
ce$$Lambda$231/1987354705.accept(Unknown Source)
    at java.util.ArrayList.forEach(ArrayList.java:1259)
    at
org.junit.platform.engine.support.hierarchical.SameThreadHierarchicalTestExecutorServi
ce.invokeAll(SameThreadHierarchicalTestExecutorService.java:41)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.lambda$executeRecursively$
6(NodeTestTask.java:155)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask$$Lambda$227/724028528.exec
ute(Unknown Source)
    at
org.junit.platform.engine.support.hierarchical.ThrowableCollector.execute(ThrowableCol
lector.java:73)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.lambda$executeRecursively$
8(NodeTestTask.java:141)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask$$Lambda$226/485475507.invo
ke(Unknown Source)
    at org.junit.platform.engine.support.hierarchical.Node.around(Node.java:137)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.lambda$executeRecursively$
9(NodeTestTask.java:139)
```

```
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask$$Lambda$225/986944742.exec
ute(Unknown Source)
    at
org.junit.platform.engine.support.hierarchical.ThrowableCollector.execute(ThrowableCol
lector.java:73)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.executeRecursively(NodeTes
tTask.java:138)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.execute(NodeTestTask.java:
95)
    at
org.junit.platform.engine.support.hierarchical.SameThreadHierarchicalTestExecutorServi
ce$$Lambda$231/1987354705.accept(Unknown Source)
    at java.util.ArrayList.forEach(ArrayList.java:1259)
    at
org.junit.platform.engine.support.hierarchical.SameThreadHierarchicalTestExecutorServi
ce.invokeAll(SameThreadHierarchicalTestExecutorService.java:41)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.lambda$executeRecursively$
6(NodeTestTask.java:155)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask$$Lambda$227/724028528.exec
ute(Unknown Source)
    at
org.junit.platform.engine.support.hierarchical.ThrowableCollector.execute(ThrowableCol
lector.java:73)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.lambda$executeRecursively$
8(NodeTestTask.java:141)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask$$Lambda$226/485475507.invo
ke(Unknown Source)
    at org.junit.platform.engine.support.hierarchical.Node.around(Node.java:137)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.lambda$executeRecursively$
9(NodeTestTask.java:139)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask$$Lambda$225/986944742.exec
ute(Unknown Source)
    at
org.junit.platform.engine.support.hierarchical.ThrowableCollector.execute(ThrowableCol
lector.java:73)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.executeRecursively(NodeTes
tTask.java:138)
    at
org.junit.platform.engine.support.hierarchical.NodeTestTask.execute(NodeTestTask.java:
95)
    at
```

```
org.junit.platform.engine.support.hierarchical.SameThreadHierarchicalTestExecutorServi
ce.submit(SameThreadHierarchicalTestExecutorService.java:35)
    at
org.junit.platform.engine.support.hierarchical.HierarchicalTestExecutor.execute(Hierar
chicalTestExecutor.java:57)
    at
org.junit.platform.engine.support.hierarchical.HierarchicalTestEngine.execute(Hierarch
icalTestEngine.java:54)
    at
org.junit.platform.launcher.core.EngineExecutionOrchestrator.execute(EngineExecutionOr
chestrator.java:107)
    at
org.junit.platform.launcher.core.EngineExecutionOrchestrator.execute(EngineExecutionOr
chestrator.java:88)
    at
org.junit.platform.launcher.core.EngineExecutionOrchestrator.lambda$execute$0(EngineEx
ecutionOrchestrator.java:54)
    at
org.junit.platform.launcher.core.EngineExecutionOrchestrator$$Lambda$181/102103410.acc
ept(Unknown Source)
    at
org.junit.platform.launcher.core.EngineExecutionOrchestrator.withInterceptedStreams(En
gineExecutionOrchestrator.java:67)
    at
org.junit.platform.launcher.core.EngineExecutionOrchestrator.execute(EngineExecutionOr
chestrator.java:52)
    at
org.junit.platform.launcher.core.DefaultLauncher.execute(DefaultLauncher.java:114)
    at
org.junit.platform.launcher.core.DefaultLauncher.execute(DefaultLauncher.java:86)
    at
org.junit.platform.launcher.core.DefaultLauncherSession$DelegatingLauncher.execute(Def
aultLauncherSession.java:86)
    at
org.junit.platform.launcher.core.SessionPerRequestLauncher.execute(SessionPerRequestLa
uncher.java:53)
    at
org.gradle.api.internal.tasks.testing.junitplatform.JUnitPlatformTestClassProcessor$Co
llectAllTestClassesExecutor.processAllTestClasses(JUnitPlatformTestClassProcessor.java
:99)
    at
org.gradle.api.internal.tasks.testing.junitplatform.JUnitPlatformTestClassProcessor$Co
llectAllTestClassesExecutor.access$000(JUnitPlatformTestClassProcessor.java:79)
    at
org.gradle.api.internal.tasks.testing.junitplatform.JUnitPlatformTestClassProcessor.st
op(JUnitPlatformTestClassProcessor.java:75)
    at
org.gradle.api.internal.tasks.testing.SuiteTestClassProcessor.stop(SuiteTestClassProce
ssor.java:61)
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:62)
```

```
    at
sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:43)
    at java.lang.reflect.Method.invoke(Method.java:498)
    at
org.gradle.internal.dispatch.ReflectionDispatch.dispatch(ReflectionDispatch.java:36)
    at
org.gradle.internal.dispatch.ReflectionDispatch.dispatch(ReflectionDispatch.java:24)
    at
org.gradle.internal.dispatch.ContextClassLoaderDispatch.dispatch(ContextClassLoaderDis
patch.java:33)
    at
org.gradle.internal.dispatch.ProxyDispatchAdapter$DispatchingInvocationHandler.invoke(
ProxyDispatchAdapter.java:94)
    at com.sun.proxy.$Proxy2.stop(Unknown Source)
    at
org.gradle.api.internal.tasks.testing.worker.TestWorker$3.run(TestWorker.java:193)
    at
org.gradle.api.internal.tasks.testing.worker.TestWorker.executeAndMaintainThreadName(T
estWorker.java:129)
    at
org.gradle.api.internal.tasks.testing.worker.TestWorker.execute(TestWorker.java:100)
    at
org.gradle.api.internal.tasks.testing.worker.TestWorker.execute(TestWorker.java:60)
    at
org.gradle.process.internal.worker.child.ActionExecutionWorker.execute(ActionExecution
Worker.java:56)
    at
org.gradle.process.internal.worker.child.SystemApplicationClassLoaderWorker.call(Syste
mApplicationClassLoaderWorker.java:133)
    at
org.gradle.process.internal.worker.child.SystemApplicationClassLoaderWorker.call(Syste
mApplicationClassLoaderWorker.java:71)
    at
worker.org.gradle.process.internal.worker.GradleWorkerMain.run(GradleWorkerMain.java:6
9)
    at
worker.org.gradle.process.internal.worker.GradleWorkerMain.main(GradleWorkerMain.java:
74)

   Locked ownable synchronizers:
    - None
```