Table of Contents

1. Overview ................................................................. 2
   1.1. URLs ............................................................. 2
   1.2. Timestamps ..................................................... 2
2. Audit Events (auditevents) ............................................ 3
   2.1. Retrieving Audit Events ..................................... 3
      2.1.1. Query Parameters ...................................... 3
      2.1.2. Response Structure .................................... 3
3. Beans (beans) ........................................................... 5
   3.1. Retrieving the Beans .......................................... 5
      3.1.1. Response Structure ..................................... 6
4. Caches (caches) ........................................................ 8
   4.1. Retrieving All Caches ....................................... 8
      4.1.1. Response Structure ..................................... 8
   4.2. Retrieving Caches by Name .................................. 9
      4.2.1. Query Parameters ...................................... 9
      4.2.2. Response Structure .................................... 9
   4.3. Evict All Caches ............................................. 10
   4.4. Evict a Cache by Name ..................................... 10
      4.4.1. Request Structure ......................................
5. Conditions Evaluation Report (conditions) ........................... 11
   5.1. Retrieving the Report ...................................... 11
      5.1.1. Response Structure .....................................
6. Configuration Properties (configprops) .............................. 14
   6.1. Retrieving the @ConfigurationProperties Bean ... 14
      6.1.1. Response Structure ...................................... 15
7. Environment (env) ...................................................... 16
   7.1. Retrieving the Entire Environment .......................... 16
      7.1.1. Response Structure ..................................... 17
   7.2. Retrieving a Single Property ............................... 18
      7.2.1. Response Structure ..................................... 18
8. Flyway (flyway) ........................................................ 20
   8.1. Retrieving the Migrations ................................... 20
      8.1.1. Response Structure .....................................
9. Health (health) .......................................................... 22
   9.1. Retrieving the Health of the application ................. 22
      9.1.1. Response Structure ..................................... 23
   9.2. Retrieving the Health of a component .................... 24
      9.2.1. Response Structure ..................................... 24
9.3. Retrieving the Health of a component instance ................................. 25
  9.3.1. Response Structure ....................................................... 25
10. Heap Dump (heapdump) ......................................................... 26
  10.1. Retrieving the Heap Dump ................................................ 26
11. HTTP Trace (httptrace) .......................................................... 27
  11.1. Retrieving the Traces ....................................................... 27
    11.1.1. Response Structure ................................................ 27
12. Info (info) .............................................................................. 29
  12.1. Retrieving the Info .......................................................... 29
    12.1.1. Response Structure ................................................ 29
      build Response Structure .................................................. 29
      git Response Structure .................................................... 30
13. Spring Integration graph (integrationgraph) ....................................... 31
  13.1. Retrieving the Spring Integration graph .................................... 31
    13.1.1. Response Structure ................................................ 32
  13.2. Rebuilding the Spring Integration graph .................................... 32
14. Liquibase (liquibase) ............................................................... 34
  14.1. Retrieving the Changes ..................................................... 34
    14.1.1. Response Structure ................................................ 34
15. Log File (logfile) ..................................................................... 36
  15.1. Retrieving the Log File ..................................................... 36
  15.2. Retrieving Part of the Log File .......................................... 38
16. Loggers (loggers) ..................................................................... 39
  16.1. Retrieving All Loggers ....................................................... 39
    16.1.1. Response Structure ................................................ 39
  16.2. Retrieving a Single Logger ................................................ 40
    16.2.1. Response Structure ................................................ 40
  16.3. Setting a Log Level .......................................................... 40
    16.3.1. Request Structure .................................................... 40
  16.4. Clearing a Log Level ........................................................ 41
17. Mappings (mappings) .................................................................. 42
  17.1. Retrieving the Mappings ..................................................... 42
    17.1.1. Response Structure ................................................ 42
    17.1.2. Dispatcher Servlets Response Structure ......................... 45
    17.1.3. Servlets Response Structure ....................................... 47
    17.1.4. Servlet Filters Response Structure ............................... 47
    17.1.5. Dispatcher Handlers Response Structure ....................... 47
18. Metrics (metrics) ....................................................................... 50
  18.1. Retrieving Metric Names .................................................... 50
    18.1.1. Response Structure ................................................ 50
  18.2. Retrieving a Metric ........................................................... 50
This API documentation describes Spring Boot Actuators web endpoints.
Chapter 1. Overview

Before you proceed, you should read the following topics:

- URLs
- Timestamps

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=2019-08-06T08%3A15%3A04.397Z&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.v2+json;charset=UTF-8
Content-Length: 121

{
   "events" : [ {
      "timestamp" : "2019-08-06T08:15:04.399Z",
      "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:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>after</td>
<td>Restrictions the events to those that occurred after the given time. Optional.</td>
</tr>
<tr>
<td>principal</td>
<td>Restrictions the events to those with the given principal. Optional.</td>
</tr>
<tr>
<td>type</td>
<td>Restrictions the events to those with the given type. Optional.</td>
</tr>
</tbody>
</table>

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:
<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>events</td>
<td>Array</td>
<td>An array of audit events.</td>
</tr>
<tr>
<td>events[].timestamp</td>
<td>String</td>
<td>The timestamp of when the event occurred.</td>
</tr>
<tr>
<td>events[].principal</td>
<td>String</td>
<td>The principal that triggered the event.</td>
</tr>
<tr>
<td>events[].type</td>
<td>String</td>
<td>The type of the event.</td>
</tr>
</tbody>
</table>
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:

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

The resulting response is similar to the following:
3.1.1. Response Structure

The response contains details of the application’s beans. The following table describes the structure of the response:
<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>contexts</td>
<td>Object</td>
<td>Application contexts keyed by id.</td>
</tr>
<tr>
<td>contexts.*.parentId</td>
<td>String</td>
<td>Id of the parent application context, if any.</td>
</tr>
<tr>
<td>contexts.*.beans</td>
<td>Object</td>
<td>Beans in the application context keyed by name.</td>
</tr>
<tr>
<td>contexts.<em>.beans.</em>.aliases</td>
<td>Array</td>
<td>Names of any aliases.</td>
</tr>
<tr>
<td>contexts.<em>.beans.</em>.scope</td>
<td>String</td>
<td>Scope of the bean.</td>
</tr>
<tr>
<td>contexts.<em>.beans.</em>.type</td>
<td>String</td>
<td>Fully qualified type of the bean.</td>
</tr>
<tr>
<td>contexts.<em>.beans.</em>.resource</td>
<td>String</td>
<td>Resource in which the bean was defined, if any.</td>
</tr>
<tr>
<td>contexts.<em>.beans.</em>.dependencies</td>
<td>Array</td>
<td>Names of any dependencies.</td>
</tr>
</tbody>
</table>
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.v2+json;charset=UTF-8
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:

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cacheManagers</td>
<td>Object</td>
<td>Cache managers keyed by id.</td>
</tr>
</tbody>
</table>
### 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:

```bash
$ 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.v2+json;charset=UTF-8
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:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>cacheManager</code></td>
<td>Name of the cacheManager to qualify the cache. May be omitted if the cache name is unique.</td>
</tr>
</tbody>
</table>

#### 4.2.2. Response Structure

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

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>name</code></td>
<td>String</td>
<td>Cache name.</td>
</tr>
<tr>
<td><code>cacheManager</code></td>
<td>String</td>
<td>Cache manager name.</td>
</tr>
</tbody>
</table>
### 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:

```bash
$ 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:

```bash
$ 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:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>cacheManager</code></td>
<td>Name of the cacheManager to qualify the cache. May be omitted if the cache name is unique.</td>
</tr>
</tbody>
</table>
Chapter 5. Conditions Evaluation Report

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:

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

The resulting response is similar to the following:

```json
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8
Content-Length: 3259

{
  "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": "OnWebApplicationCondition",
              "message": "@ConditionalOnWebApplication (required) found 'session' scope"
            }
          ]
        }
      }
    }
  }
}
```
5.1.1. Response Structure

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

<table>
<thead>
<tr>
<th>Condition</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ConditionalOnClass found required classes</td>
<td>&quot;org.springframework.web.reactive.DispatcherHandler&quot;</td>
</tr>
<tr>
<td></td>
<td>&quot;org.springframework.http.server.reactive.HttpHandler&quot;</td>
</tr>
<tr>
<td>@ConditionalOnClass did not find required class</td>
<td>&quot;javax.json.bind.Jsonb&quot;</td>
</tr>
<tr>
<td>@ConditionalOnProperty</td>
<td>&quot;spring.http.converters.preferred-json-mapper=jsonb&quot;</td>
</tr>
<tr>
<td>@ConditionalOnClass did not find required class</td>
<td>&quot;javax.json.bind.Jsonb&quot;</td>
</tr>
</tbody>
</table>

unconditionalClasses:
- org.springframework.boot.autoconfigure.context.PropertyPlaceholderAutoConfiguration
- org.springframework.boot.actuate.autoconfigure.endpoint.EndpointAutoConfiguration
<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>contexts</td>
<td>Object</td>
<td>Application contexts keyed by id.</td>
</tr>
<tr>
<td>contexts.*.positiveMatches</td>
<td>Object</td>
<td>Classes and methods with conditions that were matched.</td>
</tr>
<tr>
<td>contexts.<em>.positiveMatches.</em>.condition</td>
<td>String</td>
<td>Name of the condition.</td>
</tr>
<tr>
<td>contexts.<em>.positiveMatches.</em>.message</td>
<td>String</td>
<td>Details of why the condition was matched.</td>
</tr>
<tr>
<td>contexts.*.negativeMatches</td>
<td>Object</td>
<td>Classes and methods with conditions that were not matched.</td>
</tr>
<tr>
<td>contexts.<em>.negativeMatches.</em>.notMatched</td>
<td>Array</td>
<td>Conditions that were matched.</td>
</tr>
<tr>
<td>contexts.<em>.negativeMatches.</em>.notMatched</td>
<td>String</td>
<td>Name of the condition.</td>
</tr>
<tr>
<td>contexts.<em>.negativeMatches.</em>.notMatched</td>
<td>String</td>
<td>Details of why the condition was not matched.</td>
</tr>
<tr>
<td>contexts.<em>.negativeMatches.</em>.matched</td>
<td>Array</td>
<td>Conditions that were matched.</td>
</tr>
<tr>
<td>contexts.<em>.negativeMatches.</em>.matched.*.condition</td>
<td>String</td>
<td>Name of the condition.</td>
</tr>
<tr>
<td>contexts.<em>.negativeMatches.</em>.matched.*.message</td>
<td>String</td>
<td>Details of why the condition was matched.</td>
</tr>
<tr>
<td>contexts.*.unconditionalClasses</td>
<td>Array</td>
<td>Names of unconditional auto-configuration classes if any.</td>
</tr>
<tr>
<td>contexts.*.parentId</td>
<td>String</td>
<td>Id of the parent application context, if any.</td>
</tr>
</tbody>
</table>
Chapter 6. Configuration Properties (configprops)

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

6.1. Retrieving the `@ConfigurationProperties` Bean

To retrieve 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.v2+json;charset=UTF-8
Content-Length: 1806

{
    "contexts": {
        "application": {
            "beans": {
                "management.endpoints.web.cors-org.springframework.boot.actuate.autoconfigure.endpoint.web.CorsEndpointProperties": {
                    "prefix": "management.endpoints.web.cors",
                    "properties": {
                        "allowedHeaders": [ ],
                        "allowedMethods": [ ],
                        "allowedOrigins": [ ],
                        "maxAge": {
                            "units": [ "SECONDS", "NANOS" ]
                        },
                        "exposedHeaders": [ ]
                    }
                }
            }
        }
    }
}
```
6.1.1. Response Structure

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

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>contexts</td>
<td>Object</td>
<td>Application contexts keyed by id.</td>
</tr>
<tr>
<td>contexts.<em>.beans.</em></td>
<td>Object</td>
<td>@ConfigurationProperties beans keyed by bean name.</td>
</tr>
<tr>
<td>contexts.<em>.beans.</em>.prefix</td>
<td>String</td>
<td>Prefix applied to the names of the bean's properties.</td>
</tr>
<tr>
<td>contexts.<em>.beans.</em>.properties</td>
<td>Object</td>
<td>Properties of the bean as name-value pairs.</td>
</tr>
<tr>
<td>contexts.*.parentId</td>
<td>String</td>
<td>Id of the parent application context, if any.</td>
</tr>
</tbody>
</table>
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.v2+json;charset=UTF-8
Content-Length: 788

```json
{
  "activeProfiles": [],
  "propertySources": [ {
    "name": "systemProperties",
    "properties": {
      "java.runtime.name": {
        "value": "OpenJDK Runtime Environment"
      },
      "java.vm.version": {
        "value": "25.222-b10"
      },
      "java.vm.vendor": {
        "value": "AdoptOpenJDK"
      }
    }
  }, {
    "name": "systemEnvironment",
    "properties": {
      "JAVA_HOME": {
        "value": "/opt/openjdk",
        "origin": "System Environment Property \"JAVA_HOME\"
      }
    }
  }, {
    "name": "applicationConfig: [classpath:/application.properties]",
    "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:

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>activeProfiles</td>
<td>Array</td>
<td>Names of the active profiles, if any.</td>
</tr>
<tr>
<td>propertySources</td>
<td>Array</td>
<td>Property sources in order of precedence.</td>
</tr>
<tr>
<td>propertySources[].name</td>
<td>String</td>
<td>Name of the property source.</td>
</tr>
<tr>
<td>Path</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>propertySources.[].properties</td>
<td>Object</td>
<td>Properties in the property source keyed by property name.</td>
</tr>
<tr>
<td>propertySources.[].properties.*.value</td>
<td>String</td>
<td>Value of the property.</td>
</tr>
<tr>
<td>propertySources.[].properties.*.origin</td>
<td>String</td>
<td>Origin of the property, if any.</td>
</tr>
</tbody>
</table>

### 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-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8
Content-Length: 445
Content-Disposition: inline;filename=f.txt

{  
    "property" : {  
        "source" : "applicationConfig: [classpath:/application.properties]",  
        "value" : "1000"
    },  
    "activeProfiles" : [ ],  
    "propertySources" : [ {  
        "name" : "systemProperties"
    },  
    {  
        "name" : "systemEnvironment"
    },  
    {  
        "name" : "applicationConfig: [classpath:/application.properties]",
        "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:
<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>property</td>
<td>Object</td>
<td>Property from the environment, if found.</td>
</tr>
<tr>
<td>property.source</td>
<td>String</td>
<td>Name of the source of the property.</td>
</tr>
<tr>
<td>property.value</td>
<td>String</td>
<td>Value of the property.</td>
</tr>
<tr>
<td>activeProfiles</td>
<td>Array</td>
<td>Names of the active profiles, if any.</td>
</tr>
<tr>
<td>propertySources</td>
<td>Array</td>
<td>Property sources in order of precedence.</td>
</tr>
<tr>
<td>propertySources[].name</td>
<td>String</td>
<td>Name of the property source.</td>
</tr>
<tr>
<td>propertySources[].property</td>
<td>Object</td>
<td>Property in the property source, if any.</td>
</tr>
<tr>
<td>propertySources[].property.value</td>
<td>Varies</td>
<td>Value of the property.</td>
</tr>
<tr>
<td>propertySources[].property.origin</td>
<td>String</td>
<td>Origin of the property, if any.</td>
</tr>
</tbody>
</table>
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:

```bash
$ 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.v2+json;charset=UTF-8
Content-Length: 515

{
    "contexts": {
        "application": {
            "flywayBeans": {
                "flyway": {
                    "migrations": [
                        {
                            "type": "SQL",
                            "checksum": -156244537,
                            "version": "1",
                            "description": "init",
                            "script": "V1__init.sql",
                            "state": "SUCCESS",
                            "installedBy": "SA",
                            "installedOn": "2019-08-06T08:15:09.563Z",
                            "installedRank": 1,
                            "executionTime": 1
                        }
                    ]
                }
            }
        }
    }
}
```

8.1.1. Response Structure

The response contains details of the application’s Flyway migrations. The following table describes the structure of the response:
<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>contexts</td>
<td>Object</td>
<td>Application contexts keyed by id</td>
</tr>
<tr>
<td>contexts.<em>.flywayBeans.</em>.migrations</td>
<td>Array</td>
<td>Migrations performed by the Flyway instance, keyed by Flyway bean name.</td>
</tr>
<tr>
<td>contexts.<em>.flywayBeans.</em>.migrations[].checksum</td>
<td>Number</td>
<td>Checksum of the migration, if any.</td>
</tr>
<tr>
<td>contexts.<em>.flywayBeans.</em>.migrations[].description</td>
<td>String</td>
<td>Description of the migration, if any.</td>
</tr>
<tr>
<td>contexts.<em>.flywayBeans.</em>.migrations[].executionTime</td>
<td>Number</td>
<td>Execution time in milliseconds of an applied migration.</td>
</tr>
<tr>
<td>contexts.<em>.flywayBeans.</em>.migrations[].installedBy</td>
<td>String</td>
<td>User that installed the applied migration, if any.</td>
</tr>
<tr>
<td>contexts.<em>.flywayBeans.</em>.migrations[].installedOn</td>
<td>String</td>
<td>Timestamp of when the applied migration was installed, if any.</td>
</tr>
<tr>
<td>contexts.<em>.flywayBeans.</em>.migrations[].installedRank</td>
<td>Number</td>
<td>Rank of the applied migration, if any. Later migrations have higher ranks.</td>
</tr>
<tr>
<td>contexts.<em>.flywayBeans.</em>.migrations[].script</td>
<td>String</td>
<td>Name of the script used to execute the migration, if any.</td>
</tr>
<tr>
<td>contexts.<em>.flywayBeans.</em>.migrations[].state</td>
<td>String</td>
<td>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)</td>
</tr>
<tr>
<td>contexts.<em>.flywayBeans.</em>.migrations[].type</td>
<td>String</td>
<td>Type of the migration. (SCHEMA, BASELINE, SQL, UNDO_SQL, JDBC, UNDO_JDBC, SPRING_JDBC, UNDO_SPRING_JDBC, CUSTOM, UNDO_CUSTOM)</td>
</tr>
<tr>
<td>contexts.<em>.flywayBeans.</em>.migrations[].version</td>
<td>String</td>
<td>Version of the database after applying the migration, if any.</td>
</tr>
<tr>
<td>contexts.*.parentId</td>
<td>String</td>
<td>Id of the parent application context, if any.</td>
</tr>
</tbody>
</table>
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
```

The resulting response is similar to the following:
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8
Content-Length: 671

{
    "status" : "UP",
    "details" : {
        "diskSpace" : {
            "status" : "UP",
            "details" : {
                "total" : 189731442688,
                "free" : 113034637312,
                "threshold" : 104857600
            }
        },
        "db" : {
            "status" : "UP",
            "details" : {
                "database" : "HSQL Database Engine",
                "hello" : 1
            }
        },
        "broker" : {
            "status" : "UP",
            "details" : {
                "us1" : {
                    "status" : "UP",
                    "details" : {
                        "version" : "1.0.2"
                    }
                },
                "us2" : {
                    "status" : "UP",
                    "details" : {
                        "version" : "1.0.4"
                    }
                }
            }
        }
    }
}

9.1.1. Response Structure

The response contains details of the health of the application. The following table describes the structure of the response:
### 9.2. Retrieving the Health of a component

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

```bash
$ curl 'http://localhost:8080/actuator/health/db' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8
Content-Length: 99

{
    "status": "UP",
    "details": {
        "database": "HSQL Database Engine",
        "hello": 1
    }
}
```

#### 9.2.1. Response Structure

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

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>String</td>
<td>Overall status of the application.</td>
</tr>
<tr>
<td>details</td>
<td>Object</td>
<td>Details of the health of the application.</td>
</tr>
<tr>
<td>details.*.status</td>
<td>String</td>
<td>Status of a specific part of the application.</td>
</tr>
<tr>
<td>details.*.details</td>
<td>Object</td>
<td>Details of the health of a specific part of the application.</td>
</tr>
</tbody>
</table>
9.3. Retrieving the Health of a component instance

If a particular component consists of multiple instances (as the broker indicator in the example above), the health of a particular instance of that component can be retrieved by issuing a GET request to /actuator/health/{component}/{instance}, as shown in the following curl-based example:

```
$ curl 'http://localhost:8080/actuator/health/broker/us1' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8
Content-Length: 66

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

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:

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>status</td>
<td>String</td>
<td>Status of a specific part of the application</td>
</tr>
<tr>
<td>details</td>
<td>Object</td>
<td>Details of the health of a specific part of the application.</td>
</tr>
</tbody>
</table>
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 in HPROF format and can be large. 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.v2+json;charset=UTF-8
Content-Length: 503

{
    "traces" : [ {
        "timestamp" : "2019-08-06T08:15:12.002Z",
        "principal" : {
            "name" : "alice"
        },
        "session" : {
            "id" : "e2e6a1c3-5be6-4a1f-b9fd-f7888bc1ecd5"
        },
        "request" : {
            "method" : "GET",
            "uri" : "https://api.example.com",
            "headers" : {
                "Accept" : [ "application/json" ]
            }
        },
        "response" : {
            "status" : 200,
            "headers" : {
                "Content-Type" : [ "application/json" ]
            }
        },
        "timeTaken" : 1
    } ]
}
```

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:

```
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>timestamp</td>
<td>The time when the trace was recorded</td>
</tr>
<tr>
<td>principal</td>
<td>The name of the user making the request</td>
</tr>
<tr>
<td>session</td>
<td>The session ID for the request</td>
</tr>
<tr>
<td>request</td>
<td>Details of the HTTP request</td>
</tr>
<tr>
<td>response</td>
<td>Details of the HTTP response</td>
</tr>
<tr>
<td>timeTaken</td>
<td>The time taken to complete the request</td>
</tr>
</tbody>
</table>
```
<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>traces</td>
<td>Array</td>
<td>An array of traced HTTP request-response exchanges.</td>
</tr>
<tr>
<td>traces.[].timestamp</td>
<td>String</td>
<td>Timestamp of when the traced exchange occurred.</td>
</tr>
<tr>
<td>traces.[].principal</td>
<td>Object</td>
<td>Principal of the exchange, if any.</td>
</tr>
<tr>
<td>traces.[].principal.name</td>
<td>String</td>
<td>Name of the principal.</td>
</tr>
<tr>
<td>traces.[].request.method</td>
<td>String</td>
<td>HTTP method of the request.</td>
</tr>
<tr>
<td>traces.[].request.remoteAddres s</td>
<td>String</td>
<td>Remote address from which the request was received, if known.</td>
</tr>
<tr>
<td>traces.[].request.uri</td>
<td>String</td>
<td>URI of the request.</td>
</tr>
<tr>
<td>traces.[].request.headers</td>
<td>Object</td>
<td>Headers of the request, keyed by header name.</td>
</tr>
<tr>
<td>traces.[].request.headers.*.[]</td>
<td>Array</td>
<td>Values of the header</td>
</tr>
<tr>
<td>traces.[].response.status</td>
<td>Number</td>
<td>Status of the response</td>
</tr>
<tr>
<td>traces.[].response.headers</td>
<td>Object</td>
<td>Headers of the response, keyed by header name.</td>
</tr>
<tr>
<td>traces.[].response.headers.*.[]</td>
<td>Array</td>
<td>Values of the header</td>
</tr>
<tr>
<td>traces.[].session</td>
<td>Object</td>
<td>Session associated with the exchange, if any.</td>
</tr>
<tr>
<td>traces.[].session.id</td>
<td>String</td>
<td>ID of the session.</td>
</tr>
<tr>
<td>traces.[].timeTaken</td>
<td>Number</td>
<td>Time, in milliseconds, taken to handle the exchange.</td>
</tr>
</tbody>
</table>
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:

```bash
$ 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.v2+json;charset=UTF-8
Content-Length: 235

{
   "git": {
      "commit": {
         "time": "+51565-05-22T21:24:13Z",
         "id": "df027cf"
      },
      "branch": "master"
   },
   "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 build and git contributions.

build Response Structure

The following table describes the structure of the build section of the response:

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>artifact</td>
<td>String</td>
<td>Artifact ID of the application, if any.</td>
</tr>
<tr>
<td>group</td>
<td>String</td>
<td>Group ID of the application, if any.</td>
</tr>
<tr>
<td>name</td>
<td>String</td>
<td>Name ID of the application, if any.</td>
</tr>
<tr>
<td>Path</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>---------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>version</td>
<td>String</td>
<td>Version of the application, if any.</td>
</tr>
<tr>
<td>time</td>
<td>Varies</td>
<td>Timestamp of when the application was built, if any.</td>
</tr>
</tbody>
</table>

**git Response Structure**

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

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>branch</td>
<td>String</td>
<td>Name of the Git branch, if any.</td>
</tr>
<tr>
<td>commit</td>
<td>Object</td>
<td>Details of the Git commit, if any.</td>
</tr>
<tr>
<td>commit.time</td>
<td>Varies</td>
<td>Timestamp of the commit, if any.</td>
</tr>
<tr>
<td>commit.id</td>
<td>String</td>
<td>ID of the commit, if any.</td>
</tr>
</tbody>
</table>
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:

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

The resulting response is similar to the following:
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:

```bash
$ 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:

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

The resulting response is similar to the following:

```json
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8
Content-Length: 688

{
  "contexts": {
    "application": {
      "liquibaseBeans": {
        "liquibase": {
          "changeSets": [ {
            "author": "marceloverdijk",
            "changeLog": "classpath:/db/changelog/db.changelog-master.yaml",
            "comments": "",
            "contexts": [ ],
            "dateExecuted": "2019-08-06T08:14:26.347Z",
            "deploymentId": "5079266331",
            "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:
<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>contexts</td>
<td>Object</td>
<td>Application contexts keyed by id</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets</td>
<td>Array</td>
<td>Change sets made by the Liquibase beans, keyed by bean name.</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].author</td>
<td>String</td>
<td>Author of the change set.</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].changeLog</td>
<td>String</td>
<td>Change log that contains the change set.</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].comments</td>
<td>String</td>
<td>Comments on the change set.</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].contexts</td>
<td>Array</td>
<td>Contexts of the change set.</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].dateExecuted</td>
<td>String</td>
<td>Timestamp of when the change set was executed.</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].deploymentId</td>
<td>String</td>
<td>ID of the deployment that ran the change set.</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].description</td>
<td>String</td>
<td>Description of the change set.</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].execType</td>
<td>String</td>
<td>Execution type of the change set (EXECUTED, FAILED, SKIPPED, RERAN, MARK_RAN).</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].id</td>
<td>String</td>
<td>ID of the change set.</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].labels</td>
<td>Array</td>
<td>Labels associated with the change set.</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].checksum</td>
<td>String</td>
<td>Checksum of the change set.</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].orderExecuted</td>
<td>Number</td>
<td>Order of the execution of the change set.</td>
</tr>
<tr>
<td>contexts.<em>.liquibaseBeans.</em>.changeSets[].tag</td>
<td>String</td>
<td>Tag associated with the change set, if any.</td>
</tr>
<tr>
<td>contexts.*.parentId</td>
<td>String</td>
<td>Id of the parent application context, if any.</td>
</tr>
</tbody>
</table>
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-Length: 4723
Content-Type: text/plain;charset=UTF-8

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.AnnotationConfigServletWebServerApplicationContext@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 17:12:31.978  INFO 19866 --- [ost-startStop-1]
o.a.c.c.C.[Tomcat],[localhost],[/]      : Initializing Spring embedded WebApplicationContext
```

36
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-Range: bytes 0-1023/4723
Content-Length: 1024
Content-Type: text/plain;charset=UTF-8

\/
/  
\/
/  
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/  
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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.AnnotationConfigServletWebServerApplicationContext@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:

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

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Length: 283
Content-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8

{
    "levels" : [ "OFF", "FATAL", "ERROR", "WARN", "INFO", "DEBUG", "TRACE" ],
    "loggers" : {
        "ROOT" : {
            "configuredLevel" : "INFO",
            "effectiveLevel" : "INFO"
        },
        "com.example" : {
            "configuredLevel" : "DEBUG",
            "effectiveLevel" : "DEBUG"
        }
    }
}
```

16.1.1. Response Structure

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

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>levels</td>
<td>Array</td>
<td>Levels support by the logging system.</td>
</tr>
<tr>
<td>loggers</td>
<td>Object</td>
<td>Loggers keyed by name.</td>
</tr>
<tr>
<td>loggers.*.configuredLevel</td>
<td>String</td>
<td>Configured level of the logger, if any.</td>
</tr>
<tr>
<td>loggers.*.effectiveLevel</td>
<td>String</td>
<td>Effective level of the logger.</td>
</tr>
</tbody>
</table>
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:

```bash
$ 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-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8
Content-Length: 61
Content-Disposition: inline;filename=f.txt

{
  "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:

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>configuredLevel</td>
<td>String</td>
<td>Configured level of the logger, if any.</td>
</tr>
<tr>
<td>effectiveLevel</td>
<td>String</td>
<td>Effective level of the logger.</td>
</tr>
</tbody>
</table>

16.3. 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:

```bash
$ 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`.

16.3.1. Request Structure

The request specifies the desired level of the logger. The following table describes the structure of
16.4. 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' \n-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:

```bash
$ curl 'http://localhost:43153/actuator/mappings' -i -X GET
```

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8
Date: Tue, 06 Aug 2019 08:15:18 GMT
Content-Length: 5676
Transfer-Encoding: chunked

{
  "contexts": {
    "application": {
      "mappings": {
        "dispatcherServlets": {
          "dispatcherServlet": [
            {
              "handler": "ResourceHttpRequestHandler [class path resource [META-INF/resources/], class path resource [resources/], class path resource [static/], class path resource [public/], ServletContext resource [/], class path resource []],
              "predicate": "/**/favicon.ico"
            },
            {
              "handler": "Actuator web endpoint 'mappings',
              "predicate": "{GET /actuator/mappings, produces [application/vnd.spring-boot.actuator.v2+json || application/json]}",
              "details": {
                "handlerMethod": {
                  "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.v2+json",
    "negated" : false
  }, {
    "mediaType" : "application/json",
    "negated" : false
} ]
}

"handler" : "Actuator root web endpoint",
"predicate" : "{"GET /actuator, produces [application/vnd.spring-boot.actuator.v2+json || application/json]"",
"details" : {
  "handlerMethod" : {
    "className" : "org.springframework.boot.actuate.endpoint.web.servlet.WebMvcEndpointHandlerMapping.WebMvcLinksHandler",
    "name" : "links",
    "descriptor" : "(Ljavax/servlet/http/HttpServletRequest;Ljavax/servlet/http/HttpServletResponse;;)Ljava/lang/Object;"
  },
  "requestMappingConditions" : {
    "consumes" : [ ],
    "headers" : [ ],
    "methods" : [ "GET" ],
    "params" : [ ],
    "patterns" : [ "/actuator" ],
    "produces" : [ {
      "mediaType" : "application/vnd.spring-boot.actuator.v2+json",
      "negated" : false
    }, {
      "mediaType" : "application/json",
      "negated" : false
    } ]
  }
}

",
"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.MappingsEndpointServletDocumentationTests$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/", "/"]",
    "predicate": "/**"
}
],
"servletFilters": [ {
    "servletNameMappings": [ ],
    "urlPatternMappings": [ "/**" ],
    "name": "requestContextFilter",
    "className": "org.springframework.boot.web.servlet.filter.OrderedRequestContextFilter"
}, {
    "servletNameMappings": [ ],
    "urlPatternMappings": [ "/**" ],
    "name": "hiddenHttpMethodFilter",
    "className": "org.springframework.boot.web.servlet.filter.OrderedHiddenHttpMethodFilter"
}, {
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:

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>contexts</td>
<td>Object</td>
<td>Application contexts keyed by id.</td>
</tr>
<tr>
<td>contexts.*.mappings</td>
<td>Object</td>
<td>Mappings in the context, keyed by mapping type.</td>
</tr>
<tr>
<td>contexts.*.mappings.dispatcherServlets</td>
<td>Object</td>
<td>Dispatcher servlet mappings, if any.</td>
</tr>
<tr>
<td>contexts.*.mappings.servletFilters</td>
<td>Array</td>
<td>Servlet filter mappings, if any.</td>
</tr>
<tr>
<td>contexts.*.mappings.servlets</td>
<td>Array</td>
<td>Servlet mappings, if any.</td>
</tr>
<tr>
<td>contexts.*.mappings.dispatcherHandlers</td>
<td>Object</td>
<td>Dispatcher handler mappings, if any.</td>
</tr>
<tr>
<td>contexts.*.parentId</td>
<td>String</td>
<td>Id of the parent application context, if any.</td>
</tr>
</tbody>
</table>

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:
<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Array</td>
<td>Dispatcher servlet mappings, if any, keyed by dispatcher servlet bean name.</td>
</tr>
<tr>
<td>*.[].details</td>
<td>Object</td>
<td>Additional implementation-specific details about the mapping. Optional.</td>
</tr>
<tr>
<td>*.[].handler</td>
<td>String</td>
<td>Handler for the mapping.</td>
</tr>
<tr>
<td>*.[].predicate</td>
<td>String</td>
<td>Predicate for the mapping.</td>
</tr>
<tr>
<td>*.[].details.handlerMethod</td>
<td>Object</td>
<td>Details of the method, if any, that will handle requests to this mapping.</td>
</tr>
<tr>
<td>*.[].details.handlerMethod.className</td>
<td>Varies</td>
<td>Fully qualified name of the class of the method.</td>
</tr>
<tr>
<td>*.[].details.handlerMethod.name</td>
<td>Varies</td>
<td>Name of the method.</td>
</tr>
<tr>
<td>*.[].details.requestMappingConditions</td>
<td>Object</td>
<td>Details of the request mapping conditions.</td>
</tr>
<tr>
<td>*.[].details.requestMappingConditions.consumes</td>
<td>Varies</td>
<td>Details of the consumes condition.</td>
</tr>
<tr>
<td>*.[].details.requestMappingConditions.consumes.[].mediaType</td>
<td>Varies</td>
<td>Consumed media type.</td>
</tr>
<tr>
<td>*.[].details.requestMappingConditions.consumes.[].negated</td>
<td>Varies</td>
<td>Whether the media type is negated.</td>
</tr>
<tr>
<td>*.[].details.requestMappingConditions.headers</td>
<td>Varies</td>
<td>Details of the headers condition.</td>
</tr>
<tr>
<td>*.[].details.requestMappingConditions.headers.[].name</td>
<td>Varies</td>
<td>Name of the header.</td>
</tr>
<tr>
<td>*.[].details.requestMappingConditions.headers.[].value</td>
<td>Varies</td>
<td>Required value of the header, if any.</td>
</tr>
<tr>
<td>*.[].details.requestMappingConditions.headers.[].negated</td>
<td>Varies</td>
<td>Whether the value is negated.</td>
</tr>
<tr>
<td>*.[].details.requestMappingConditions.methods</td>
<td>Varies</td>
<td>HTTP methods that are handled.</td>
</tr>
<tr>
<td>*.[].details.requestMappingConditions.params</td>
<td>Varies</td>
<td>Details of the params condition.</td>
</tr>
<tr>
<td>*.[].details.requestMappingConditions.params.[].name</td>
<td>Varies</td>
<td>Name of the parameter.</td>
</tr>
</tbody>
</table>
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:

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[[].mappings</td>
<td>Array</td>
<td>Mappings of the servlet.</td>
</tr>
<tr>
<td>[[].name</td>
<td>String</td>
<td>Name of the servlet.</td>
</tr>
<tr>
<td>[[].className</td>
<td>String</td>
<td>Class name of the servlet</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[[].servletNameMappings</td>
<td>Array</td>
<td>Names of the servlets to which the filter is mapped.</td>
</tr>
<tr>
<td>[[].urlPatternMappings</td>
<td>Array</td>
<td>URL pattern to which the filter is mapped.</td>
</tr>
<tr>
<td>[[].name</td>
<td>String</td>
<td>Name of the filter.</td>
</tr>
<tr>
<td>[[].className</td>
<td>String</td>
<td>Class name of the filter</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Array</td>
<td>Dispatcher handler mappings, if any, keyed by dispatcher handler bean name.</td>
</tr>
<tr>
<td>*[].details</td>
<td>Object</td>
<td>Additional implementation-specific details about the mapping. Optional.</td>
</tr>
<tr>
<td>*[].handler</td>
<td>String</td>
<td>Handler for the mapping.</td>
</tr>
<tr>
<td>*[].predicate</td>
<td>String</td>
<td>Predicate for the mapping.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions</td>
<td>Object</td>
<td>Details of the request mapping conditions.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.consumes</td>
<td>Array</td>
<td>Details of the consumes condition</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.consumes[].mediaType</td>
<td>String</td>
<td>Consumed media type.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.consumes[].negated</td>
<td>Boolean</td>
<td>Whether the media type is negated.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.headers</td>
<td>Array</td>
<td>Details of the headers condition.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.headers[].name</td>
<td>String</td>
<td>Name of the header.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.headers[].value</td>
<td>String</td>
<td>Required value of the header, if any.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.headers[].negated</td>
<td>Boolean</td>
<td>Whether the value is negated.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.methods</td>
<td>Array</td>
<td>HTTP methods that are handled.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.params</td>
<td>Array</td>
<td>Details of the params condition.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.params[].name</td>
<td>String</td>
<td>Name of the parameter.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.params[].value</td>
<td>String</td>
<td>Required value of the parameter, if any.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.params[].negated</td>
<td>Boolean</td>
<td>Whether the value is negated.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.patterns</td>
<td>Array</td>
<td>Patterns identifying the paths handled by the mapping.</td>
</tr>
<tr>
<td>Path</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.produces</td>
<td>Array</td>
<td>Details of the produces condition.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.produces[].mediaType</td>
<td>String</td>
<td>Produced media type.</td>
</tr>
<tr>
<td>*[].details.requestMappingConditions.produces[].negated</td>
<td>Boolean</td>
<td>Whether the media type is negated.</td>
</tr>
<tr>
<td>*[].details.handlerMethod</td>
<td>Object</td>
<td>Details of the method, if any, that will handle requests to this mapping.</td>
</tr>
<tr>
<td>*[].details.handlerMethod.className</td>
<td>String</td>
<td>Fully qualified name of the class of the method.</td>
</tr>
<tr>
<td>*[].details.handlerMethod.name</td>
<td>String</td>
<td>Name of the method.</td>
</tr>
<tr>
<td>*[].details.handlerFunction</td>
<td>Object</td>
<td>Details of the function, if any, that will handle requests to this mapping.</td>
</tr>
<tr>
<td>*[].details.handlerFunction.className</td>
<td>String</td>
<td>Fully qualified name of the class of the function.</td>
</tr>
</tbody>
</table>
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:

```bash
$ 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.v2+json;charset=UTF-8
Content-Length: 154

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

18.1.1. Response Structure

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

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>names</td>
<td>Array</td>
<td>Names of the known metrics.</td>
</tr>
</tbody>
</table>

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:

```bash
$ 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-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8
Content-Disposition: inline;filename=f.txt
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" : 2.378694655E9
    } ],
    "availableTags" : [ { 
        "tag" : "area",
        "values" : [ "heap", "nonheap" ]
    }, { 
        "tag" : "id",
    } ]
}

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:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>tag</td>
<td>A tag to use for drill-down in the form name:value.</td>
</tr>
</tbody>
</table>

18.2.2. Response structure

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

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>String</td>
<td>Name of the metric</td>
</tr>
<tr>
<td>description</td>
<td>String</td>
<td>Description of the metric</td>
</tr>
<tr>
<td>baseUnit</td>
<td>String</td>
<td>Base unit of the metric</td>
</tr>
<tr>
<td>measurements</td>
<td>Array</td>
<td>Measurements of the metric</td>
</tr>
<tr>
<td>Path</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>measurements[].statistic</td>
<td>String</td>
<td>Statistic of the measurement. (TOTAL, TOTAL_TIME, COUNT, MAX, VALUE, UNKNOWN, ACTIVE_TASKS, DURATION).</td>
</tr>
<tr>
<td>measurements[].value</td>
<td>Number</td>
<td>Value of the measurement.</td>
</tr>
<tr>
<td>availableTags</td>
<td>Array</td>
<td>Tags that are available for drill-down.</td>
</tr>
<tr>
<td>availableTags[].tag</td>
<td>String</td>
<td>Name of the tag.</td>
</tr>
<tr>
<td>availableTags[].values</td>
<td>Array</td>
<td>Possible values of the tag.</td>
</tr>
</tbody>
</table>

### 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:

```bash
$ curl 'http://localhost:8080/actuator/metrics/jvm.memory.max?tag=area%3Anonheap&tag=id%3ACompressed+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-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8
Content-Length: 263
Content-Disposition: inline;filename=f.txt

{
    "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 the Metrics

To retrieve the 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-Length: 2372
Content-Type: text/plain;version=0.0.4;charset=utf-8

# 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"}, 1.8874368E7
jvm_memory_max_bytes{area="heap",id="PS Old Gen"}, 7.16177408E8
jvm_memory_max_bytes{area="heap",id="PS Eden Space"}, 3.18767104E8
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"}, 426117.0
jvm_buffer_memory_used_bytes{id="mapped"}, 0.0

# 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"}, 1.8874368E7
jvm_memory_committed_bytes{area="heap",id="PS Old Gen"}, 2.09190912E8
jvm_memory_committed_bytes{area="heap",id="PS Eden Space"}, 3.16145664E8
jvm_memory_committed_bytes{area="nonheap",id="Metaspace"}, 1.59956992E8
jvm_memory_committed_bytes{area="nonheap",id="Code Cache"}, 4.8103424E7
jvm_memory_committed_bytes{area="nonheap",id="Compressed Class Space"}, 2.2593536E7

# 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"}, 426116.0
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"}, 3498792.0
jvm_memory_used_bytes{area="heap",id="PS Old Gen"}, 1.29387912E8
jvm_memory_used_bytes{area="heap",id="PS Eden Space"}, 2.4938316E8
jvm_memory_used_bytes{area="nonheap",id="Metaspace"}, 1.5069056E8
jvm_memory_used_bytes{area="nonheap",id="Code Cache"}, 4.7364992E7
jvm_memory_used_bytes{area="nonheap",id="Compressed Class Space"}, 2.0652016E7

# 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"}, 13.0
jvm_buffer_count_buffers{id="mapped"}, 0.0
Chapter 20. Scheduled Tasks (scheduledtasks)

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

20.1. 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-Length: 629
Content-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8

{
    "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@3623198a"
        }
    ]
}
```
20.1.1. Response Structure

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

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cron</td>
<td>Array</td>
<td>Cron tasks, if any.</td>
</tr>
<tr>
<td>cron[].RunnableTarget</td>
<td>String</td>
<td>Target that will be executed.</td>
</tr>
<tr>
<td>cron[].Expression</td>
<td>String</td>
<td>Cron expression.</td>
</tr>
<tr>
<td>fixedDelay</td>
<td>Array</td>
<td>Fixed delay tasks, if any.</td>
</tr>
<tr>
<td>fixedDelay[].RunnableTarget</td>
<td>String</td>
<td>Target that will be executed.</td>
</tr>
<tr>
<td>fixedDelay[].InitialDelay</td>
<td>Number</td>
<td>Delay, in milliseconds, before first execution.</td>
</tr>
<tr>
<td>fixedDelay[].Interval</td>
<td>Number</td>
<td>Interval, in milliseconds, between the end of the last execution and the start of the next.</td>
</tr>
<tr>
<td>fixedRate</td>
<td>Array</td>
<td>Fixed rate tasks, if any.</td>
</tr>
<tr>
<td>fixedRate[].RunnableTarget</td>
<td>String</td>
<td>Target that will be executed.</td>
</tr>
<tr>
<td>fixedRate[].Interval</td>
<td>Number</td>
<td>Interval, in milliseconds, between the start of each execution.</td>
</tr>
<tr>
<td>fixedRate[].InitialDelay</td>
<td>Number</td>
<td>Delay, in milliseconds, before first execution.</td>
</tr>
<tr>
<td>custom</td>
<td>Array</td>
<td>Tasks with custom triggers, if any.</td>
</tr>
<tr>
<td>custom[].RunnableTarget</td>
<td>String</td>
<td>Target that will be executed.</td>
</tr>
<tr>
<td>custom[].Trigger</td>
<td>String</td>
<td>Trigger for the task.</td>
</tr>
</tbody>
</table>
Chapter 21. Sessions (sessions)

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

21.1. 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.v2+json;charset=UTF-8
Content-Length: 753

{
   "sessions": [ {
      "id": "a11f44e2-fc73-41ff-aba3-30301fb2b6b8",
      "attributeNames": [ ],
      "creationTime": "2019-08-05T20:15:20.760Z",
      "lastAccessedTime": "2019-08-06T08:14:35.760Z",
      "maxInactiveInterval": 1800,
      "expired": false
   }, {
      "id": "4db5efcc-99cb-4d05-a52c-b49acfb7ea9",
      "attributeNames": [ ],
      "creationTime": "2019-08-06T03:15:20.761Z",
      "lastAccessedTime": "2019-08-06T08:14:43.761Z",
      "maxInactiveInterval": 1800,
      "expired": false
   }, {
      "id": "a95abf70-7bd4-4ee1-9deb-b7f46ebacaa0",
      "attributeNames": [ ],
      "creationTime": "2019-08-06T06:15:20.761Z",
      "lastAccessedTime": "2019-08-06T08:15:08.761Z",
      "maxInactiveInterval": 1800,
      "expired": false
   } ]
}
```
21.1.1. Query Parameters

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>username</td>
<td>Name of the user.</td>
</tr>
</tbody>
</table>

21.1.2. Response Structure

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

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

21.2. 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'
```

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.v2+json;charset=UTF-8
Content-Length: 228

{
  "id" : "4db5efcc-99cb-4d05-a52c-b49acfb7ea9",
  "attributeNames" : [ ],
  "creationTime" : "2019-08-06T03:15:20.761Z",
  "lastAccessedTime" : "2019-08-06T08:14:43.761Z",
  "maxInactiveInterval" : 1800,
  "expired" : false
}

21.2.1 Response Structure

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

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>String</td>
<td>ID of the session.</td>
</tr>
<tr>
<td>attributeNames</td>
<td>Array</td>
<td>Names of the attributes stored in the session.</td>
</tr>
<tr>
<td>creationTime</td>
<td>String</td>
<td>Timestamp of when the session was created.</td>
</tr>
<tr>
<td>lastAccessedTime</td>
<td>String</td>
<td>Timestamp of when the session was last accessed.</td>
</tr>
<tr>
<td>maxInactiveInterval</td>
<td>Number</td>
<td>Maximum permitted period of inactivity, in seconds, before the session will expire.</td>
</tr>
<tr>
<td>expired</td>
<td>Boolean</td>
<td>Whether the session has expired.</td>
</tr>
</tbody>
</table>

21.3 Deleting a Session

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

```bash
$ curl 'http://localhost:8080/actuator/sessions/4db5efcc-99cb-4d05-a52c-b49acfb7ea9'
-i -X DELETE
```

The preceding example deletes the session with the id of 4db5efcc-99cb-4d05-a52c-b49acfb7ea9.
Chapter 22. Shutdown (shutdown)

The shutdown endpoint is used to shut down the application.

22.1. 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-Length: 41
Content-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8

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

22.1.1. Response Structure

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

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>message</td>
<td>String</td>
<td>Message describing the result of the request.</td>
</tr>
</tbody>
</table>
Chapter 23. Thread Dump (threaddump)

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

23.1. Retrieving the Thread Dump

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

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

The resulting response is similar to the following:

```
HTTP/1.1 200 OK
Content-Type: application/vnd.spring-boot.actuator.v2+json;charset=UTF-8
Content-Length: 8683

{
  "threads": [
    {
      "threadName": "Thread-103",
      "threadId": 556,
      "blockedTime": -1,
      "blockedCount": 0,
      "waitedTime": -1,
      "waitedCount": 1,
      "lockName": "java.util.concurrent.CountDownLatch$Sync@7f85cfd1",
      "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
        }
      ]
    }
  ]
}
```


```json
{
    "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$threadDump$0",
    "fileName" : "ThreadDumpEndpointDocumentationTests.java",
    "lineNumber" : 53,
    "className" : "org.springframework.boot.actuate.autoconfigure.endpoint.web.documentation.ThreadDumpEndpointDocumentationTests",
    "nativeMethod" : false
},
{
    "methodName" : "run",
    "lineNumber" : -1,
    "className" : "org.springframework.boot.actuate.autoconfigure.endpoint.web.documentation.ThreadDumpEndpointDocumentationTests$$Lambda$2655/1826634924",
    "nativeMethod" : false
},
{
    "methodName" : "run",
    "fileName" : "Thread.java",
    "lineNumber" : 748,
    "className" : "java.lang.Thread",
    "nativeMethod" : false
}
},
"lockedMonitors" : [ ],
"lockedSynchronizers" : [ {
"className" : "java.util.concurrent.locks.ReentrantLock$NonfairSync",
"identityHashCode" : 1835188913
} ],
"lockInfo" : { 
"className" : "java.util.concurrent.CountDownLatch$Sync",
"identityHashCode" : 2139475921
}
},
"threadName" : "Thread-101",
```

62

"threadId" : 554,
"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$2654/239630169",
  "nativeMethod" : false
}
],
"lockedMonitors" : [ ],
"lockedSynchronizers" : [ ]
},

"threadName" : "pool-10-thread-1",
"threadId" : 546,
"blockedTime" : -1,
"blockedCount" : 0,
"waitedTime" : -1,
"waitedCount" : 0,
"lockOwnerId" : -1,
"inNative" : false,
"suspended" : false,
"threadState" : "RUNNABLE",
"stackTrace" : [ {
  "methodName" : "siftUp",
  "fileName" : "ScheduledThreadPoolExecutor.java",
  "lineNumber" : 886,
23.1.1. Response Structure

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

<table>
<thead>
<tr>
<th>Path</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>threads</td>
<td>Array</td>
<td>JVM's threads.</td>
</tr>
<tr>
<td>threads[].blockedCount</td>
<td>Number</td>
<td>Total number of times that the thread has been blocked.</td>
</tr>
<tr>
<td>threads[].blockedTime</td>
<td>Number</td>
<td>Time in milliseconds that the thread has spent blocked. -1 if thread contention monitoring is disabled.</td>
</tr>
<tr>
<td>Path</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>threads[].daemon</td>
<td>Boolean</td>
<td>Whether the thread is a daemon thread. Only available on Java 9 or later.</td>
</tr>
<tr>
<td>threads[].inNative</td>
<td>Boolean</td>
<td>Whether the thread is executing native code.</td>
</tr>
<tr>
<td>threads[].lockName</td>
<td>String</td>
<td>Description of the object on which the thread is blocked, if any.</td>
</tr>
<tr>
<td>threads[].lockInfo</td>
<td>Object</td>
<td>Object for which the thread is blocked waiting.</td>
</tr>
<tr>
<td>threads[].lockInfo.className</td>
<td>String</td>
<td>Fully qualified class name of the lock object.</td>
</tr>
<tr>
<td>threads[].lockInfo.identityHashCode</td>
<td>Number</td>
<td>Identity hash code of the lock object.</td>
</tr>
<tr>
<td>threads[].lockedMonitors</td>
<td>Array</td>
<td>Monitors locked by this thread, if any</td>
</tr>
<tr>
<td>threads[].lockedMonitors[].className</td>
<td>String</td>
<td>Class name of the lock object.</td>
</tr>
<tr>
<td>threads[].lockedMonitors[].identityHashCode</td>
<td>Number</td>
<td>Identity hash code of the lock object.</td>
</tr>
<tr>
<td>threads[].lockedMonitors[].lockedStackDepth</td>
<td>Number</td>
<td>Stack depth where the monitor was locked.</td>
</tr>
<tr>
<td>threads[].lockedMonitors[].lockedStackFrame</td>
<td>Object</td>
<td>Stack frame that locked the monitor.</td>
</tr>
<tr>
<td>threads[].lockedSynchronizers</td>
<td>Array</td>
<td>Synchronizers locked by this thread.</td>
</tr>
<tr>
<td>threads[].lockedSynchronizers[].className</td>
<td>String</td>
<td>Class name of the locked synchronizer.</td>
</tr>
<tr>
<td>threads[].lockedSynchronizers[].identityHashCode</td>
<td>Number</td>
<td>Identity hash code of the locked synchronizer.</td>
</tr>
<tr>
<td>threads[].lockOwnerId</td>
<td>Number</td>
<td>ID of the thread that owns the object on which the thread is blocked. -1 if the thread is not blocked.</td>
</tr>
<tr>
<td>threads[].lockOwnerName</td>
<td>String</td>
<td>Name of the thread that owns the object on which the thread is blocked, if any.</td>
</tr>
<tr>
<td>threads[].priority</td>
<td>Number</td>
<td>Priority of the thread. Only available on Java 9 or later.</td>
</tr>
<tr>
<td>threads[].stackTrace</td>
<td>Array</td>
<td>Stack trace of the thread.</td>
</tr>
<tr>
<td>Path</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>threads[.]StackTrace[.]classLoaderName</td>
<td>String</td>
<td>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.</td>
</tr>
<tr>
<td>threads[.]StackTrace[.]className</td>
<td>String</td>
<td>Name of the class that contains the execution point identified by this entry.</td>
</tr>
<tr>
<td>threads[.]StackTrace[.]fileName</td>
<td>String</td>
<td>Name of the source file that contains the execution point identified by this entry, if any.</td>
</tr>
<tr>
<td>threads[.]StackTrace[.]lineNumber</td>
<td>Number</td>
<td>Line number of the execution point identified by this entry. Negative if unknown.</td>
</tr>
<tr>
<td>threads[.]StackTrace[.]methodName</td>
<td>String</td>
<td>Name of the method.</td>
</tr>
<tr>
<td>threads[.]StackTrace[.]moduleName</td>
<td>String</td>
<td>Name of the module that contains the execution point identified by this entry, if any. Only available on Java 9 or later.</td>
</tr>
<tr>
<td>threads[.]StackTrace[.]moduleVersion</td>
<td>String</td>
<td>Version of the module that contains the execution point identified by this entry, if any. Only available on Java 9 or later.</td>
</tr>
<tr>
<td>threads[.]StackTrace[.]nativeMethod</td>
<td>Boolean</td>
<td>Whether the execution point is a native method.</td>
</tr>
<tr>
<td>threads[.]suspended</td>
<td>Boolean</td>
<td>Whether the thread is suspended.</td>
</tr>
<tr>
<td>threads[.]threadId</td>
<td>Number</td>
<td>ID of the thread.</td>
</tr>
<tr>
<td>threads[.]threadName</td>
<td>String</td>
<td>Name of the thread.</td>
</tr>
<tr>
<td>threads[.]threadState</td>
<td>String</td>
<td>State of the thread (NEW, RUNNABLE, BLOCKED, WAITING, TIMED_WAITING, TERMINATED).</td>
</tr>
<tr>
<td>threads[.]waitedCount</td>
<td>Number</td>
<td>Total number of times that the thread has waited for notification.</td>
</tr>
<tr>
<td>threads[.]waitedTime</td>
<td>Number</td>
<td>Time in milliseconds that the thread has spent waiting. -1 if thread contention monitoring is disabled</td>
</tr>
</tbody>
</table>