

Rockpedia : Surveillance

Nous voulons toujours savoir si notre application fonctionne correctement, une fois lancée. C'est ce que permettent les outils que nous allons voir.

Surveillance avec Spring Actuator, Prometheus et Spring Boot Admin

Spring Actuator et Prometheus

Spring actuator est déjà activé. Cela permet de voir pas mal d'infos relatives à l'application à l'adresse <http://localhost:8080/actuator>.

▼ _links:	
▶ self:	{...}
▶ auditevents:	{...}
▶ beans:	{...}
▶ caches:	{...}
▶ caches-cache:	{...}
▼ health:	
href:	"http://localhost:8080/actuator/health"
templated:	false
▶ health-component:	{...}
▶ health-component-instance:	{...}
▶ conditions:	{...}
▶ shutdown:	{...}
▶ configprops:	{...}
▶ env-toMatch:	{...}
▶ env:	{...}
▼ info:	
href:	"http://localhost:8080/actuator/info"
templated:	false
▶ loggers-name:	{...}
▶ loggers:	{...}
▶ heapdump:	{...}
▶ threaddump:	{...}
▼ prometheus:	
href:	"http://localhost:8080/actuator/prometheus"
templated:	false
▶ metrics-requiredMetricName:	{...}
▼ metrics:	
href:	"http://localhost:8080/actuator/metrics"
templated:	false
▶ scheduledtasks:	{...}
▶ httptrace:	{...}
▶ mappings:	{...}
▶ jolokia:	{...}

J'ai mis en évidence les plus utiles :

- **health** : permet de savoir si l'application fonctionne (UP) ou pas

status: "UP"

- **info** : informations générales sur l'application

```

▼ app:
  name: "Rockpedia"
  description: "L'API qui fait du bruit"
  version: "0.0.1-SNAPSHOT"
  java-vendor: "Oracle Corporation"

```

- prometheus : beaucoup d'informations pas très lisibles, surtout utilisé par des applications externes comme graphana ou Spring Boot Admin, que nous allons voir dans un instant.

```

# HELP hikaricp_connections_timeout_total Connection timeout total count
# TYPE hikaricp_connections_timeout_total counter
hikaricp_connections_timeout_total{pool="HikariPool-1"}, 0.0
# HELP hikaricp_connections_min Min connections
# TYPE hikaricp_connections_min gauge
hikaricp_connections_min{pool="HikariPool-1"}, 10.0
# HELP tomcat_threads_config_max_threads
# TYPE tomcat_threads_config_max_threads gauge
tomcat_threads_config_max_threads{name="http-nio-8080"}, 200.0
# HELP tomcat_sessions_rejected_sessions_total
# TYPE tomcat_sessions_rejected_sessions_total counter
tomcat_sessions_rejected_sessions_total 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"}, 1.1534336E7
jvm_memory_max_bytes{area="heap",id="PS Old Gen"}, 1.374683136E9
jvm_memory_max_bytes{area="heap",id="PS Eden Space"}, 6.54311424E8
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 jdbc_connections_active
# TYPE jdbc_connections_active gauge
jdbc_connections_active{name="dataSource"}, 0.0
# HELP tomcat_global_request_seconds
# TYPE tomcat_global_request_seconds summary
tomcat_global_request_seconds_count{name="http-nio-8080"}, 4.0
tomcat_global_request_seconds_sum{name="http-nio-8080"}, 0.172
# HELP process_start_time_seconds Start time of the process since unix epoch.
# TYPE process_start_time_seconds gauge
process_start_time_seconds 1.579511122233E9
# 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"}, 1.102312E7
jvm_memory_used_bytes{area="heap",id="PS Old Gen"}, 3.4899312E7
jvm_memory_used_bytes{area="heap",id="PS Eden Space"}, 1524376.0
jvm_memory_used_bytes{area="nonheap",id="Metaspace"}, 6.6406952E7
jvm_memory_used_bytes{area="nonheap",id="Code Cache"}, 1.239264E7
jvm_memory_used_bytes{area="nonheap",id="Compressed Class Space"}, 9242896.0
# HELP tomcat_sessions_created_sessions_total
# TYPE tomcat_sessions_created_sessions_total counter
tomcat_sessions_created_sessions_total 0.0
# HELP hikaricp_connections_max Max connections
# TYPE hikaricp_connections_max gauge
hikaricp_connections_max{pool="HikariPool-1"}, 10.0
# 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"}, 1.1534336E7
jvm_memory_committed_bytes{area="heap",id="PS Old Gen"}, 1.32120576E8
jvm_memory_committed_bytes{area="heap",id="PS Eden Space"}, 2.42745344E8
jvm_memory_committed_bytes{area="nonheap",id="Metaspace"}, 7.0672384E7
jvm_memory_committed_bytes{area="nonheap",id="Code Cache"}, 1.245184E7
jvm_memory_committed_bytes{area="nonheap",id="Compressed Class Space"}, 1.0141696E7
# HELP http_server_requests_seconds
# TYPE http_server_requests_seconds summary
http_server_requests_seconds_count{exception="None",method="GET",outcome="SUCCESS",status="200",uri="/actuator/info"}, 1.0
http_server_requests_seconds_sum{exception="None",method="GET",outcome="SUCCESS",status="200",uri="/actuator/info"}, 0.005419557
http_server_requests_seconds_count{exception="None",method="GET",outcome="SUCCESS",status="200",uri="/actuator/health"}, 2.0
http_server_requests_seconds_sum{exception="None",method="GET",outcome="SUCCESS",status="200",uri="/actuator/health"},

```

- metrics : données de surveillance, accessibles à l'adresse [http://localhost:8080/actuator/metrics/\\${DATA}](http://localhost:8080/actuator/metrics/${DATA}) (avec \${DATA} le nom de ce que vous voulez inspecter)

```
▼ names:
  0:    "jvm.memory.max"
  1:    "jvm.threads.states"
  2:    "jdbc.connections.active"
  3:    "process.files.max"
  4:    "jvm.gc.memory.promoted"
  5:    "system.load.average.1m"
  6:    "jvm.memory.used"
  7:    "jvm.gc.max.data.size"
  8:    "jdbc.connections.max"
  9:    "jdbc.connections.min"
 10:    "jvm.gc.pause"
 11:    "jvm.memory.committed"
 12:    "system.cpu.count"
 13:    "logback.events"
 14:    "http.server.requests"
 15:    "tomcat.global.sent"
 16:    "jvm.buffer.memory.used"
 17:    "tomcat.sessions.created"
 18:    "jvm.threads.daemon"
 19:    "system.cpu.usage"
 20:    "jvm.gc.memory.allocated"
 21:    "tomcat.global.request.max"
 22:    "hikaricp.connections.idle"
 23:    "hikaricp.connections.pending"
 24:    "tomcat.global.request"
 25:    "tomcat.sessions.expired"
 26:    "hikaricp.connections"
 27:    "jvm.threads.live"
 28:    "jvm.threads.peak"
 29:    "tomcat.global.received"
 30:    "hikaricp.connections.active"
 31:    "hikaricp.connections.creation"
 32:    "process.uptime"
 33:    "tomcat.sessions.rejected"
 34:    "process.cpu.usage"
 35:    "tomcat.threads.config.max"
 36:    "jvm.classes.loaded"
 37:    "hikaricp.connections.max"
 38:    "hikaricp.connections.min"
 39:    "jvm.classes.unloaded"
 40:    "tomcat.global.error"
 41:    "tomcat.sessions.active.current"
```

Spring Boot Admin

- Clonez le dépôt :

```
git clone https://github.com/SmileEdge/SpringBootAdmin.git
```

- Build avec maven

```
mvn build
```

- Démarrez l'application

```
mvn spring-boot:run
```

- Rendez vous à l'adresse <http://localhost:8081/> avec un navigateur, connectez-vous avec le nom d'utilisateur *admin* et le mot de passe *admin* et sélectionnez l'application *spring-boot-application* en cliquant une fois dessus, puis sur le numéro sous l'adresse <http://localhost:8080/>.

The screenshot shows the Spring Boot Admin web interface. On the left is a sidebar with a green header 'spring-boot-application' and ID 'a973ff14be49'. Below it are menu items: 'Aperçus' (selected), 'Détails', 'Métriques', 'Environnement', 'Beans', 'Propriétés de configuration', 'Tâches programmées', 'Loggers', 'JVM', 'Web', 'Audit Log', and 'Caches'. The main area has a dark header 'Spring Boot Admin' and a title 'spring-boot-application' with ID 'a973ff14be49'. Below the title are three links: 'http://localhost:8080/', 'http://localhost:8080/actuator', and 'http://localhost:8080/actuator/health'. The 'Info' section displays application details in a table:

app	name: Rockpedia description: L'API qui fait du bruit version: 0.0.1-SNAPSHOT
java-vendor	Oracle Corporation

The 'Métadonnées' section displays metadata in a table:

user.name	rockpedia
user.password	*****
startup	2020-01-20T10:05:28.373+01:00

Sur la page d'accueil, on peut voir les mêmes infos que par la route info de Spring Actuator, le nombre de threads de l'application, la mémoire utilisée, le nombre de passages du garbage collector...

Aperçus > Métriques permet d'ajouter des métriques visibles sur actuator/metrics.

Aperçus > Environnement liste les variables d'environnement de l'application.

Aperçus > Propriétés de configuration liste d'autres variables d'environnement, plus spécifiques à Spring.

Loggers permet de définir la priorité des logs à afficher (DEBUG < FATAL).