Red Hat Data Grid 8.4

Data Grid Code Tutorials

Learn how to use Data Grid capabilities
Learn how to use Data Grid capabilities
Abstract

Run code tutorials for remote caches and embedded caches that demonstrate various Data Grid capabilities and usage patterns.
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RED HAT DATA GRID

Data Grid is a high-performance, distributed in-memory data store.

**Schemaless data structure**
- Flexibility to store different objects as key-value pairs.

**Grid-based data storage**
- Designed to distribute and replicate data across clusters.

**Elastic scaling**
- Dynamically adjust the number of nodes to meet demand without service disruption.

**Data interoperability**
- Store, retrieve, and query data in the grid from different endpoints.
DATA GRID DOCUMENTATION

Documentation for Data Grid is available on the Red Hat customer portal.

- Data Grid 8.4 Documentation
- Data Grid 8.4 Component Details
- Supported Configurations for Data Grid 8.4
- Data Grid 8 Feature Support
- Data Grid Deprecated Features and Functionality
DATA GRID DOWNLOADS

Access the Data Grid Software Downloads on the Red Hat customer portal.

NOTE

You must have a Red Hat account to access and download Data Grid software.
MAKING OPEN SOURCE MORE INCLUSIVE

Red Hat is committed to replacing problematic language in our code, documentation, and web properties. We are beginning with these four terms: master, slave, blacklist, and whitelist. Because of the enormity of this endeavor, these changes will be implemented gradually over several upcoming releases. For more details, see our CTO Chris Wright’s message.
CHAPTER 1. REMOTE CACHES

Deploy multiple Data Grid Server instances to create remote cache clusters that give you a fault-tolerant and scalable data tier with high-speed access from Hot Rod and REST clients.

1.1. REMOTE CACHE TUTORIALS

To run these tutorials you need at least one locally running instance of Data Grid Server.

You can download the distribution and run the following commands:

$ ./bin/cli.sh user create admin -p "password"
$ ./bin/server.sh

NOTE

Data Grid Server enables authentication and authorization by default. Creating a user named admin gives you administrative access to Data Grid Server.

Building and running remote cache tutorials

You can build and run remote cache tutorials directly in your IDE or from the command line as follows:

$ mvn -s /path/to/maven-settings.xml clean package exec:exec

1.2. HOT ROD JAVA CLIENT TUTORIALS

- Data Grid requires Java 11 at a minimum. However, Hot Rod Java clients running in applications that require Java 8 can continue using older versions of client libraries.

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**Data Grid documentation**

You can find more resources for Hot Rod Java clients in our documentation at:

- Hot Rod Java client guide
- Marshalling and Encoding Data Guide
- Querying Data Grid caches
- REST API
- Resp Protocol
- Smallrye Mutiny
CHAPTER 2. EMBEDDED CACHES

Add Data Grid as a dependency to your Java project and use embedded caches that increase application performance and give you capabilities to handle complex use cases.

2.1. EMBEDDED CACHE TUTORIALS

You can run embedded cache tutorials directly in your IDE or from the command line as follows:

```
$ mvn -s /path/to/maven-settings.xml clean package exec:exec
```

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<thead>
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<td>Demonstrates how to use Multimap.</td>
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Data Grid documentation
You can find more resources about embedded caches in our documentation at:

- Embedding Data Grid Caches
- Querying Data Grid caches
CHAPTER 3. SPRING AND SPRING BOOT

3.1. SPRING AND SPRING BOOT TUTORIALS

NOTE
These code tutorials use Data Grid Server and require at least one running instance.

Run Spring examples
Two simple tutorials can be run with Spring without Spring Boot:

- Test caching
  
  $ {package_exec}@spring-caching

- Test annotations
  
  $ {package_exec}@spring-annotations

Run Spring Boot examples

$ mvn -s /path/to/maven-settings.xml spring-boot:run

Displaying actuator statistics

Navigate to http://localhost:8080/actuator/metrics in your browser to display a list of available metrics.
Cache metrics are prefixed with "cache." Display each metric for each cache using tags. For example for the 'puts' stats in the basque-names cache:


Collecting statistics with Prometheus

The prometheus.yml file in this project contains a host.docker.internal binding that allows Prometheus to scrap metrics that the Spring actuator exposes.

Change the YOUR_PATH value in the following command to the directory where Prometheus is running and then run:

Podman

$ podman run -d --name=prometheus -p 9090:9090 -v YOUR_PATH/integrations/spring-boot/prometheus.yml:/etc/prometheus/prometheus.yml prom/prometheus --config.file=/etc/prometheus/prometheus.yml

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<tr>
<td>Spring Boot and Spring Cache remote mode</td>
<td>Demonstrates how to use Spring Caches with Spring Boot and the Data Grid Server.</td>
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### Tutorial link | Description
--- | ---
**Spring Boot and Spring Session remote mode** | Demonstrates how to use Spring Session with Spring Boot and the Data Grid Server.
**Spring Boot and Spring Cache embedded mode** | Demonstrates how to use Spring Caches with Spring Boot and Data Grid Embedded.
**Spring Boot and Spring Session embedded mode** | Demonstrates how to use Spring Session with Spring Boot and Data Grid Embedded.
**Spring cache embedded without Spring Boot** | Demonstrates how to use Spring Cache and Data Grid Embedded without Spring Boot.

**Data Grid documentation**
You can find more resources in our documentation at:

- [Using Data Grid with Spring](#)
- [Data Grid Spring Boot Starter](#)