

Ranger API

Date published: 2019-08-22

Date modified: 2022-12-15

CLOUDERA

Legal Notice

© Cloudera Inc. 2025. All rights reserved.

The documentation is and contains Cloudera proprietary information protected by copyright and other intellectual property rights. No license under copyright or any other intellectual property right is granted herein.

Unless otherwise noted, scripts and sample code are licensed under the Apache License, Version 2.0.

Copyright information for Cloudera software may be found within the documentation accompanying each component in a particular release.

Cloudera software includes software from various open source or other third party projects, and may be released under the Apache Software License 2.0 (“ASLv2”), the Affero General Public License version 3 (AGPLv3), or other license terms. Other software included may be released under the terms of alternative open source licenses. Please review the license and notice files accompanying the software for additional licensing information.

Please visit the Cloudera software product page for more information on Cloudera software. For more information on Cloudera support services, please visit either the Support or Sales page. Feel free to contact us directly to discuss your specific needs.

Cloudera reserves the right to change any products at any time, and without notice. Cloudera assumes no responsibility nor liability arising from the use of products, except as expressly agreed to in writing by Cloudera.

Cloudera, Cloudera Altus, HUE, Impala, Cloudera Impala, and other Cloudera marks are registered or unregistered trademarks in the United States and other countries. All other trademarks are the property of their respective owners.

Disclaimer: EXCEPT AS EXPRESSLY PROVIDED IN A WRITTEN AGREEMENT WITH CLOUDERA, CLOUDERA DOES NOT MAKE NOR GIVE ANY REPRESENTATION, WARRANTY, NOR COVENANT OF ANY KIND, WHETHER EXPRESS OR IMPLIED, IN CONNECTION WITH CLOUDERA TECHNOLOGY OR RELATED SUPPORT PROVIDED IN CONNECTION THEREWITH. CLOUDERA DOES NOT WARRANT THAT CLOUDERA PRODUCTS NOR SOFTWARE WILL OPERATE UNINTERRUPTED NOR THAT IT WILL BE FREE FROM DEFECTS NOR ERRORS, THAT IT WILL PROTECT YOUR DATA FROM LOSS, CORRUPTION NOR UNAVAILABILITY, NOR THAT IT WILL MEET ALL OF CUSTOMER’S BUSINESS REQUIREMENTS. WITHOUT LIMITING THE FOREGOING, AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, CLOUDERA EXPRESSLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, QUALITY, NON-INFRINGEMENT, TITLE, AND FITNESS FOR A PARTICULAR PURPOSE AND ANY REPRESENTATION, WARRANTY, OR COVENANT BASED ON COURSE OF DEALING OR USAGE IN TRADE.

Contents

Ranger API Overview.....	4
Ranger Admin Metrics API.....	4
Ranger REST API documentation.....	7

Ranger API Overview

The Ranger REST API provides a framework to enable, monitor and manage comprehensive data security across the Cloudera platform.

Apache Ranger currently provides a centralized security administration, fine grain access control and detailed auditing for user access within Apache Hadoop, Apache Hive, Apache HBase and other Apache components. The Ranger REST API documentation is served on the same host and port as the Ranger Admin Web UI, and does not require an extra process or extra configuration. The API supports HTTP Basic Authentication, accepting the same users and credentials as the Ranger Admin Web UI. For more information about REST APIs available for collecting Ranger metrics, see:

Related Information

[Apache Ranger REST API](#)

Ranger Admin Metrics API

You can access two APIs that fetch Ranger Admin metrics.

One Ranger Admin API returns a response in JSON format. The other Ranger Admin API returns a response in prometheus compatible format. Neither API that fetches Ranger Admin metrics requires authentication as it does not provide any sensitive information. Both APIs return the same value. You can reduce (or increase) the metrics collection interval using the `hadoop-metrics2.properties` file.

JSON compatible API

accessible at a url with format:

`http(s)://<ADMIN_HOST>:<ADMIN_PORT>/service/metrics/json`

Example: `https://kg-rzmtr-1.kg-rzmtr.root.hwx.site:6182/service/metrics/json`

Prometheus compatible API

accessible at a url with format:

`http(s)://<ADMIN_HOST>:<ADMIN_PORT>/service/metrics/prometheus`

Example: `https://kg-rzmtr-1.kg-rzmtr.root.hwx.site:6182/service/metrics/prometheus`

Response

The response is grouped into policy, context enrichers, service, deny conditions, user group and Ranger JVM categories. Since both APIs return the same value, only json responses are discussed in this document.

Policy:

The policy group metrics gives all metrics related to policies. Further it is divided into following sub-categories.

Sample json response follows:

```
"Policy": {
  "RowFilteringCount": 0,
  "MaskingCount": 0,
  "TagAccessCount": 1,
  "ResourceAccessCount": 95,
  "ResourceAccessCountHIVE": 10,
  "ResourceAccessCountKAFKA": 12,
```

```

    "ResourceAccessCountATLAS": 9,
    "ResourceAccessCountKUDU": 3,
    "ResourceAccessCountHDFS": 3,
    ...
  }

```

Policy metric response can further be divided into row filtering, masking, resource access, and tag policies.

Row Filtering: This group of metrics indicates row filtering policy metrics. Currently we only support total row filtering count metrics.

Masking: This group of metrics indicates masking policy metrics. Currently we only support total masking count metrics.

Resource Access: This group of metrics indicates resource access policy metrics. Other than total resource access policy count, it also gives component specific resource access policy count.

Sample json follows:

```

"Policy": {
  ...
  "ResourceAccessCount": 95,
  "ResourceAccessCountHIVE": 10,
  "ResourceAccessCountKAFKA": 12,
  "ResourceAccessCountATLAS": 9,
  "ResourceAccessCountKUDU": 3,
  "ResourceAccessCountHDFS": 3,
  ...
}

```

ContextEnrichers:

This metrics group represents the available metrics for context enrichers. Similar to the deny conditions and policy metrics group, this metric also shares count for each service definition/type available other than total count.

Sample json follows:

```

"ContextEnrichers": {
  "ContextEnricherCountTAG": 1,
  "ContextEnricherCount": 1
}

```

Service:

This metrics group represents the available metrics for service. Similar to the context enrichers and policy metrics group, this metric also shares count for each service definition/type available other than total count.

Sample json follows:

```

"Service": {
  "ServiceCount": 16,
  "ServiceCountHIVE": 1,
  "ServiceCountTAG": 1,
  "ServiceCountHBASE": 1,
  "ServiceCountADLS": 1,
  "ServiceCountKAFKA": 1,
  "ServiceCountS3": 1,
  ...
}

```

DenyConditions:

This metrics group represents the available metrics for all deny conditions. Similar to the service and policy metrics group, this metric also shares count for each service definition/type available other than total count.

Sample json follows:

```
"DenyConditions": {
  "DenyConditionCountTAG": 1,
  "DenyConditionCount": 1
}
```

User Group:

This metrics group represents the available metrics for all users and groups. Other than total user and groups it also includes role specific user counts.

Sample json follows:

```
"UserGroup": {
  "UserCount": 62,
  "GroupCount": 97,
  "UserCountKeyAdmin": 1,
  "UserCountKeyAdminAuditor": 0,
  "UserCountSysAdmin": 8,
  "UserCountAdminAuditor": 0,
  "UserCountUser": 53
}
```

Ranger JVM:

This metrics group represents the JVM metrics needed to get internal state of admin.

Sample json follows:

```
"RangerJvm": {
  "GcTimeTotal": 5315,
  "SystemLoadAvg": 3.91,
  "ThreadsBusy": 2250,
  "GcCountTotal": 472,
  "MemoryMax": 1066401792,
  "MemoryCurrent": 179763416,
  "ThreadsWaiting": 2248,
  "ProcessorsAvailable": 4,
  "GcTimeMax": 5002,
  "ThreadsBlocked": 25,
  "ThreadsRemaining": 4
}
```

Table 1: Ranger JVM Admin Metrics Descriptions

Metric	Descriptions
GcTimeTotal	Total time taken by JVM Garbage Collector.
GcTimeMax	Maximum time taken by a single JVM Garbage Collection process.
GcCountTotal	Number of times JVM Garbage Collector runs.
SystemLoadAvg	Average load on the host on which the service is running.
ThreadsBusy	Total JVM threads which are busy.

Metric	Descriptions
ThreadsWaiting	Total JVM threads which are waiting.
ThreadsBlocked	Total JVM threads which are blocked.
ThreadsRemaining	Total remaining (not busy/ waiting/ blocked) JVM threads.
MemoryMax	Maximum memory (RAM) JVM can get from the host.
MemoryCurrent	Currently occupied memory (RAM) by JVM.
ProcessorsAvailable	Currently available processor cores on host.

Ranger REST API documentation

The Ranger Admin Web UI includes REST API documentation which describes the framework used to enable, monitor and manage comprehensive data security across the Hadoop platform. The Ranger REST API is published as html, using the Swagger UI, at a url that has the following format:

Ranger Admin SSL-enabled (Default Port: 6182):

<https://<Ranger-host-name>:6182/apidocs/index.html>

Ranger Admin not SSL-enabled (Default Port: 6080):

<http://<Ranger-host-name>:6080/apidocs/index.html>

You can access the Ranger API documentation using the Swagger user interface from Cloudera Manager. From Cloudera Manager, go to Ranger Ranger Admin Web UI .

To view the Ranger REST API documentation:

1. Log in to the Ranger Admin Web UI.
2. Open the Ranger Admin menu.
3. Select API Documentation.

Ranger Rest API documentation displays as html output in your web browser.