CA Nimsoft® Unified Reporter ™

Quick Start Guide

6.5

Document Revision History

Document Version	Date	Changes
1.0	April 2013	Initial version for GA of UR 6.5.
1.1	May 2013	Added section "Installing the iReport Commercial License."

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Contents

Chapter 1: Introduction

Unified Reporter (UR) is an optional component that provides advanced reporting for the Unified Management Portal (UMP).

UR provides the following features:

- Drag and drop ad hoc report building.
- Drag and drop dashboard building, with live refresh, and mashups of external content.
- Built-in charting that includes pie, bar, line, multi-series, area, and many other chart types.
- A library of out-of-box (OOB) reports that save time and effort.
- Database abstraction using JSON query extractors.
- Self-service parameterized web reporting.
- Report scheduling, distribution, and historical versioning.
- Access to any data source, including the Nimsoft SLM database.

In addition, UR provides developers and power users with:

- The iReport graphical report designer for building more complex reports.
- Print-ready pixel-perfect production reporting.

This document provides information on the basic use of UR and iReport.

Additional UR documentation is available in the Unified Management Portal web-based help.

This section contains the following topics:

Obtaining Unified Reporter

Additional licensing is not required to use UR, but UR is not automatically installed with UMP.

Before you install UR, install UMP, and then obtain the appropriate UR install package for your environment from the Downloads page at support.nimsoft.com. Read and understand the *Unified Reporter Release Notes* and *Unified Reporter Installation Guide,* both available at docs.nimsoft.com, before installing UR.

After you install UR, you can access it from the Reports page in UMP, or you can add it to a page of your choice.

Users and Permissions

Users must have the ACL permission *Unified Reports* to access UR.

UR users comprise two types: account contact users and NMS users. Account contact users can only see the Public > Nimsoft Monitor folder, and the folder to which they belong. By default, account contact users have read-only access to the repository, unless they have the *Portal Administration* permission, which grants them full access to their account folder only.

NMS users with the *Portal Administration* permission can see the folders of all of the accounts, and have full access to the repository.

Add Users in NMS

Unified Reporter (UR) users must be added in NMS with Infrastructure Manager.

The UR web application (JasperReports Server Pro) provides a way to add users. However, authentication is handled by NMS. If you add a user in UR and then try to log in with that user name, it will not work. Add the user in NMS using Infrastructure Manager, and then log in to UR.

Folder Structure

In UR 6.5, the Nimsoft Monitor out-of-box (OOB) reports in the repository are consolidated under the folder Public > Nimsoft Monitor. Folders are automatically created for accounts when account contact users log in for the first time.

When you upgrade to UR 6.5, the OOB reports are automatically placed under Public > Nimsoft Monitor, and removed from the former location in the directory structure.

Chapter 2: Out-of-box Reports

This section provides information about the out-of-box (OOB) reports included with UR.

This section contains the following topics:

Options for Out-of-box Reports

When you run an OOB report from the repository, the Options pane appears on the left-hand side. The Options pane allows you to customize the report by selecting from the following fields:

Top #

Allows you to set the number of results to 5, 10, or 25. By default this value is set to 10.

Time period

Allows you to set last hour, last day, last week, last month, or last year. By default this value is set to last day.

Ignore Pagination

This check box allows you to view an entire report on one page by scrolling down, rather than by paging through the report. This option can be useful for reports with considerable data, or if you plan to print the report. By default, pagination is enabled.

Note: With reports of time-series data, such as *CO2 Emissions Rate,* the Options pane only displays the Time period field.

Editing the Default List of Values

NMS users with the *Portal Administration* ACL permission can edit the values that appear in the **Top #** and **Time period** lists in the Options pane. All Nimsoft Monitor OOB reports inherit their options from the Top # and Time period lists. Therefore, when you edit the default list of values, the changes are applied to all of the Nimsoft Monitor OOB reports.

Follow these steps:

1. From the repository view, expand Public > Nimsoft Monitor > resources > lists.
2. Select either Time period or Top #, and click **Edit** in the toolbar.
3. In the Edit List of Values panel, add or remove the values in the drop-down list.

   Note: The values that you specify for the Time period must be consistent with your database provider.

List of Out-of-box Reports

The following table lists the OOB reports that come with UR. It also lists the probes that must be activated, and the QoS measurement(s) that must be enabled on the probe in order to obtain data for each report.

Report Category	Report Name	QoS Required	Probe
Applications	Active Directory Replication Age	QOS_AD_REPLICATION_AGE	ad_response
Applications	End to End User Transactions	QOS_E2E_EXECUTION	e2e_appmon
Applications	Remedy Response Time	QOS_REMEDY_REPONSE	remedy_response
Applications/Apache	Apache Busy Workers	QOS_APACHE_BUSYWORKERS	apache
Applications/Apache	Apache Bytes per Request	QOS_APACHE_BYTESPERREQ	apache
Applications/Apache	Apache HTTP Response Time	QOS_APACHE_HTTPRESTIME	apache
Applications/Apache	Apache Idle Workers	QOS_APACHE_IDLEWORKERS	apache
Applications/Apache	Apache Requests Average Time	QOS_APACHE_REQAVETIME	apache
Applications/Apache	Apache Requests Per Second	QOS_APACHE_REQPERSEC	apache

Databases/MySQL	MySQL % of Maximum Allowed Connections	QOS_MYSQL_CONNECTION_USAGE_RATE	mysql
Databases/Oracle	Oracle % Table Space Free	QOS_ORACLE_TABLESPACE_FREE	oracle
Databases/Oracle	Oracle Databases by Size	QOS_ORACLE_DATABASE_SIZE	oracle
Databases/Oracle	Oracle SGA Memory Free	QOS_ORACLE_SGA_MEMORY_FREE	oracle
Databases/Oracle	Oracle Table Space Allocated Free	QOS_ORACLE_TABLESPACE_ALLOC_FREE	oracle
Databases/SQL Server	SQL Server Free Allocated Space	QOS_SQLSERVER_ALLOC_SPACE	sql_server
Databases/SQL Server	SQL Server Response Time	QOS_SQL_RESPONSE	sql_response
Databases/SQL Server	SQL Server Transactions	QOS_SQLSERVER_TRANSACTIONS	sql_server
Databases/SQL Server	SQL Server Users	QOS_SQLSERVER_ACTIVE_USERS	sql_server
Network	DHCP Response Time	QOS_DHCP_RESPONSE	url_response
Network	DNS Response Time	QOS_DNS_RESPONSE	url_response
Network	Hosts by Response Time	QOS_NET_CONNECT	net_connect
Network	Interfaces by Bandwidth Inbound	QOS_INTERFACE_TRAFFIC_PERC	interface_traffic
Network	Interfaces by Bandwidth Outbound	QOS_INTERFACE_TRAFFIC_PERC	interface_traffic
Network	Interfaces by Discards	QOS_INTERFACE_DISCARDS	interface_traffic
Network	Interfaces by Errors	QOS_INTERFACE_ERRORS	interface_traffic
Network	Interfaces by Queue Length	QOS_INTERFACE_QLEN	interface_traffic
Network	LDAP Response Time	QOS_LDAP_RESPONSE_TIME	ldap_response
Network	NTP Response Time	QOS_NTP_RESPONSE_TIME	ntp_response
Network	URLs by Response Time	QOS_URL_RESPONSE	url_response
Network/Cisco	Cisco by Memory Free	QOS_MEMORY_USAGE	cisco_monitor
Network/Cisco	Cisco by Memory Used	QOS_MEMORY_USAGE	cisco_monitor
Network/Cisco	Cisco CallManager CPU Usage	QOS_CPU_USAGE	ccm_monitor
Network/Cisco	Cisco CallManager Memory Used (%)	QOS_CCM_PERFORMANCE	ccm_monitor

Network/Cisco	Cisco CPU Usage	QOS_CPU_USAGE	cisco_monitor
Network/Cisco	Cisco QoS Drop Bitrate	QOS_CISCO_DROP_BITRATE	cisco_qos
Network/Cisco	Cisco QoS Post Policy Bitrate	QOS_CISCO_POST_POLICY_BITRATE	cisco_qos
Network/Cisco	Cisco QoS Post Policy Bytes	QOS_CISCO_POST_POLICY_BYTE	cisco_qos
Network/Cisco	Cisco QoS Pre Policy Bitrate	QOS_CISCO_PRE_POLICY_BITRATE	cisco_qos
Power	CO2 Emissions Rate	QOS_CO2_EMISSIONS_RATE	power
Power	Data Center Infrastructure Efficiency	QOS_DCIE	power
Power	Power Usage Effectiveness	QOS_PUE	power
Servers	Servers By CPU Usage	QOS_CPU_USAGE	cdm (local) or rsp (remote)
Servers	Servers by Disk Capacity	QOS_DISK_USAGE_PERC	cdm (local) or rsp (remote)
Servers	Servers by Physical Memory	QOS_MEMORY_PHYSICAL_PERC	cdm (local) or rsp (remote)
Servers	Servers by Processor Queue Length	QOS_PROC_QUEUE_LEN	processes
Servers/Processes	Processes by CPU Usage	QOS_PROCESS_CPU	processes
Servers/Processes	Processes by Memory Usage	QOS_PROCESS_MEMORY	processes
Servers/Processes	Processes by Thread Count	QOS_PROCESS_THREADS	processes
ServiceDesk	Accounts (NMS) by Events		nsdgtw
ServiceDesk	Accounts (ServiceDesk) by Incidents		nsdgtw
ServiceDesk	Applications by Events and Incidents		nsdgtw
ServiceDesk	Devices by Mean Time to Repair vs Service Quality		nsdgtw
ServiceDesk	Network Events and Incidents		nsdgtw
ServiceDesk	Servers by Events and Incidents		nsdgtw
Virtualization/VMware	VMware Guests by CPU MHz	QOS_CPU_USAGE_MHZ	vmware
Virtualization/VMware	VMware Guests by CPU Usage	QOS_CPU_USAGE	vmware

Virtualization/VMware	VMware Hosts by CPU Usage	QOS_CPU_USAGE	vmware
Virtualization/VMware	VMware Hosts by Disk Free	QOS_DISK_FREE	vmware
Virtualization/VMware	VMware Hosts by Memory Usage	QOS_MEMORY_PERC_USAGE	vmware
Virtualization/VMware	VMware Hosts by VM Count	QOS_COUNTER	vmware

Chapter 3: Designing an Ad Hoc View

This section describes how to design an ad hoc view in UR. After you create an ad hoc view, you can save and open the ad hoc view as a report.

Note: In addition to the *Unified Reporter* ACL permission required to access UR, you must have the *Portal Administration* ACL permission to design a report.

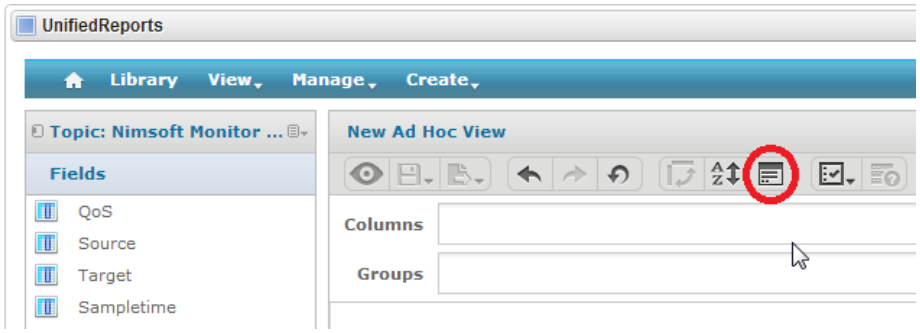
Follow these steps:

1. Log in to UMP, and go to Unified Reporter.
2. On the landing page, click **Create > Ad Hoc View**.

   The Data Chooser wizard opens.
3. In the Data Chooser:
   a. Select **Topics** at the top of the Data Chooser.
   b. Expand the **Public** folder and browse to **Ad Hoc Components > Topics > Nimsoft Monitor Topic**.
   c. Select **Table**, **Chart**, or **Crosstab** from the types of views at the bottom of the Data Chooser.

      The Input Controls dialog opens.

      Note: If the Input Controls dialog does not open, click the Input Controls icon in the Ad Hoc Editor tool bar.



4. In the Input Controls dialog:
   a. Specify a time period for the ad hoc view.
   b. Select the desired input controls from the QoS, Source, and Target lists.
   c. Click **OK**.
5. Drag and drop or double-click fields and measures to add them to the ad hoc view.

6. Click the Save icon when you are satisfied with the ad hoc view.
    a. Enter a name for the report.
    b. Browse to a location in the repository, and click **Save**.

The ad hoc view and its corresponding report now appear in the repository. You can run the report, or further edit the ad hoc view.

Chapter 4: Setting up iReport

After you install Unified Reporter (UR), use the steps in this section to set up iReport. You can install iReport on any system with network access to the system on which you installed UR.

Note: The iReport application must be correctly configured before you can modify, copy, or run reports that use a query executer language. You can view out-of-box reports in UR, however, you cannot edit or copy out-of-box reports without iReport.

This section contains the following topics:

Set up iReport

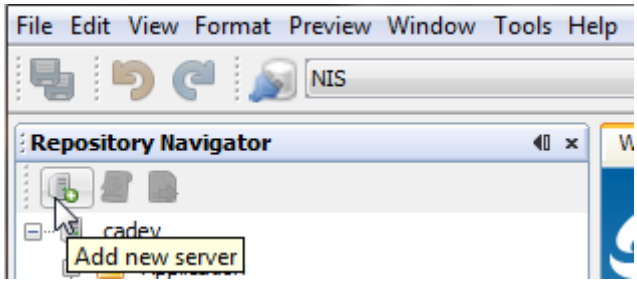
Follow these steps:

1. Download the appropriate version of iReport from the Downloads page at support.nimsoft.com.
2. Install iReport on a system with network access to the system on which you installed UR.
3. Obtain libraries from the UR deployment:
   a. Enter the following URL in a browser:
   http://<*UMP_server*>/jasperserver-pro/ireport-config.jar.
   b. Save the JAR file to a location of your choice.
   c. Start iReport.
   d. Add the JAR file to the iReport classpath:
      - In the menu bar in iReport, select **Tools > Options > Classpath**.
      - Click **Add JAR**, and browse to the location where you saved the JAR file. Click **Open**.
4. Add query executers:
   a. In the menu bar in iReport, select **Tools** > **Options** > **Query Executers**.
   b. Add query executers (see page 22).

5. Connect iReport to your UMP server:
   a. In the menu bar in iReport, click **Window > JasperReports Server Repository.**

      The Repository Navigator pane opens.

   b. Click the **Add new server** icon to connect to the UR instance.



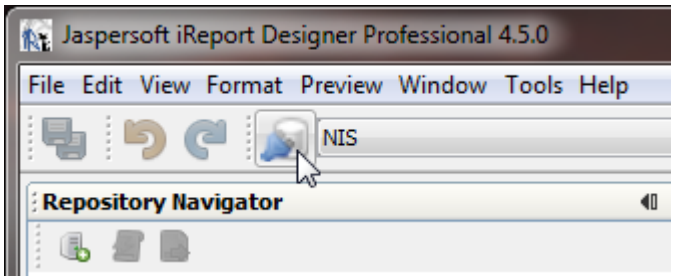
      The JasperServer Plugin dialog opens.

   c. In the **ID** field, provide a name for your UMP server. For example, enter *Unified Reporter.*

   d. In the **JasperReports Server URL** field, edit **localhost:8080** so that it points to your UMP server.

   e. Provide a valid Nimsoft username and password.

6. Set up the data source:
   a. Click the **Report Database** icon.



      The Connections / Datasources dialog opens.

   b. Select **New > Database JDBC connection**. Click **Next**.

      The Database JDBC connection dialog opens.

   c. Provide a name, such as *NIS*, for the database JDBC connection.

d. Click the drop-down menu in the **JDBC Driver** field, and select the appropriate JDBC driver for your database.

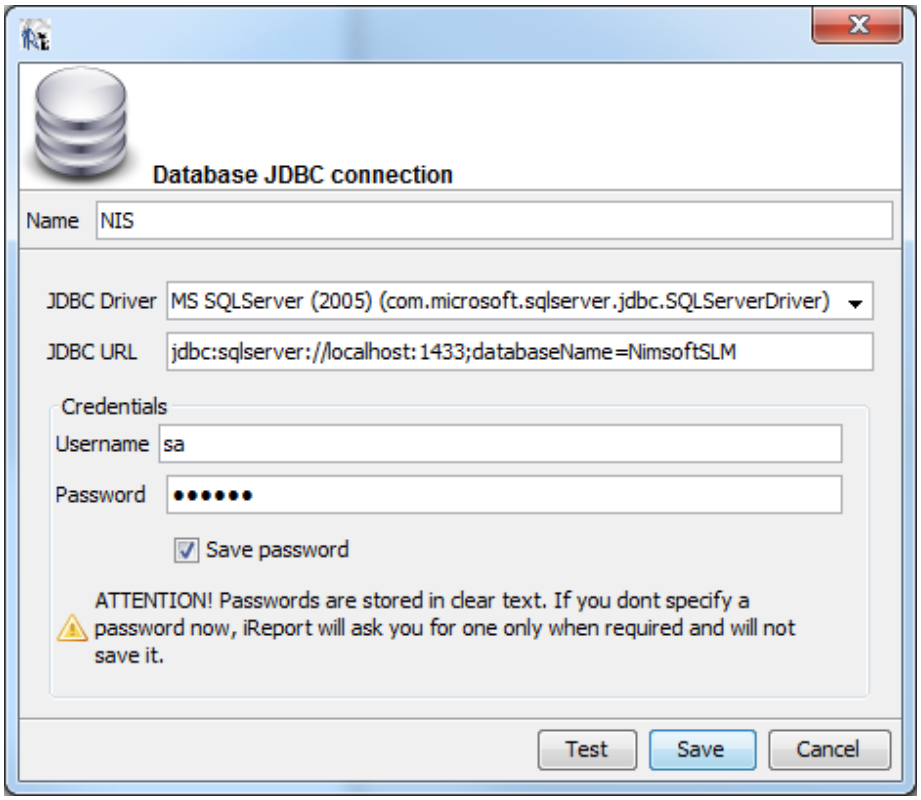
   The JDBC URL field updates and displays a URL template for the specific JDBC driver you selected. For example, if you selected MS SQLServer (2005) (com.microsoft.sqlserver.jdbc.SQLServerDriver), the JDBC URL field displays jdbc:sqlserver://localhost:1433;databaseName=DatabaseName.

   Note: The JDBC drivers that are available are shown in black font; the JDBC drivers that are not available are shown in red font. If the appropriate JDBC driver is not available, verify that you added the JAR file to the classpath as described in step 3.

e. In the **JDBC URL** field, enter the IP address (or host name) of the database server, and the database name. For example, if you selected MS SQLServer (2005) (com.microsoft.sqlserver.jdbc.SQLServerDriver), enter jdbc:sqlserver://<*IP_address*>:1433;databaseName=<*NimsoftSLM*>.

   Note: In most cases, the JDBC connection uses the same information as the data_engine database configuration.

f. Provide a username and password.



g. Click the **Test** button.If the connection was successful, click **Save**.

If the connection was unsuccessful, verify the following items:

- You selected an appropriate JDBC driver for your database.
- You entered valid information in the JDBC URL field, and valid credentials.
- The system on which you installed iReport has network access to the database.

iReport is now installed and you can start using it to modify, copy, or run reports.

Query Executers

The following table lists the Nimsoft query executers you can add in iReport.

Language	Query Executer Factory	Fields Provider Class
NimsoftJSONTopN	com.nimsoft.ur.jrs.executer.NimsoftJSONTopNFactory	com.nimsoft.ur.ireport.fieldsprovider.NimsoftJSONTopNFP
NimsoftJSONTimeSeries	com.nimsoft.ur.jrs.executer.NimsoftJSONTimeSeriesFactory	com.nimsoft.ur.ireport.fieldsprovider.NimsoftJSONTimeSeriesFP
nimsoft	com.nimsoft.ur.jrs.executer.NimsoftFactory	com.nimsoft.ur.ireport.fieldsprovider.NimsoftFP
ServiceDesk	com.nimsoft.ur.jrs.executer.ServiceDeskFactory	com.nimsoft.ur.ireport.fieldsprovider.ServiceDeskFP
ServiceDeskNMS	com.nimsoft.ur.jrs.executer.ServiceDeskNMSFactory	com.nimsoft.ur.ireport.fieldsprovider.ServiceDeskNMSFP
NMS	com.nimsoft.ur.jrs.executer.NMSFactory	com.nimsoft.ur.ireport.fieldsprovider.NMSFP

Installing the iReport Commercial License

iReport initially uses an evaluation license that provides commercial-license functionality for 30 days after the installation. iReport is still usable after the evaluation license expires, but certain features are no longer available.

You can install the commercial license that is provided in the UR installation files to continue using all of the commercial iReport features.

Follow these steps:

1. Open iReport.
2. Select **Help** > **License Manager** in the toolbar.
3. Click **Install License** and browse to the license file in <*nimsoft_installation*>\probes\service\wasp\conf\jasperserver.license.

Chapter 5: Using Custom Nimsoft Query Languages

The out-of-box reports installed with UR use the custom query languages NimsoftJSONTopN and NimsoftJSONTimeSeries, which are installed to the Unified Reporter web app. This section provides information on using the NimsoftJSONTopN and NimsoftJSONTimeSeries query languages.

Note: The iReport application must be correctly configured before you can modify, copy, or run reports using a custom Nimsoft query language. See the section Setting Up iReport (see page 19).

This section contains the following topics:

NimsoftJSONTopN Query Language

This section provides information on using the NimsoftJSONTopN query language.

The NimsoftJSONTopN language expects a string representation of a JSON object. In addition:

- The JSON object must contain a topNReportDefinition object.
- The topNReportDefinition object must contain the qos key, the value of which is a string of the QoS metric for the desired report.

For example, the following syntax reports the average value of QOS_MEMORY_PHYSICAL_PERC for each source that is collecting this data over the last 24 hours.

NimsoftJSONTopN Example 1

```
{"topNReportDefinition": {
  "qos":"QOS_MEMORY_PHYSICAL_PERC"
 }
}
```

In the next example, the following syntax will report the top five, average, minimum, and maximum values of QOS_PROCESS_CPU over the last 30 minutes on the machine cadev.dev.fco.

NimsoftJSONTopN Example 2

```
{"topNReportDefinition": {
  "numberOfBars":5,
  "statistics":["avg", "max", "min"],
  "qos":"QOS_PROCESS_CPU",
  "source":"cadev.dev.fco",
  "period":30,
  "periodUnits":"minute",
  "groupFirstBy": "target"
 }
}
```

Refer to the table below for additional, optional values you can provide in the topNReportDefinition object to further define the report.

Key	Description	Value Datatype	Default Value
statistics	Define the statistics to collect for the report. Options: avg, min, max	JSONArray	"statistics":["avg"]
numberOfBars	Restricts the report to the top # of results	Integer	"numberOfBars":10
source	Restricts the report to a specific source	String	Matches any source
target	Restricts the report to a specific target. Can also be special token "{source}" to match where target=source	String	Matches any target
period	Restricts the report to a given interval length	Long	"period":24
periodUnits	This defines the units for the period. Options: minute, hour, day, month	String	"periodUnits":"hour"
groupFirstBy	Can be either source or target	String	"groupFirstBy":"source"

NimsoftJSONTimeSeries Query Language

This section provides information on using the NimsoftJSONTimeSeries query language.

The NimsoftJSONTimeSeries language expects a string representation of a JSON object. In addition:

- The JSON object must contain a timeSeriesReportDefinition object.
- The timeSeriesReportDefinition object must contain the qos key, the value of which is a string of the QoS metric for the desired report.

For example, the following syntax reports the average value of QOS_MEMORY_PHYSICAL_PERC for each source that is collecting this data over the last 24 hours.

NimsoftJSONTimeSeries Example 1

```
{"timeSeriesReportDefinition": {
  "qos":"QOS_MEMORY_PHYSICAL_PERC"
 }
}
```

Refer to the table below for additional, optional values you can provide in the timeSeriesReportDefinition object to further define the report.

Key	Description	Value Datatype	Default Value
source	Restricts the report to a specific source	String	Matches any source
target	Restricts the report to a specific target. Can also be special token "{source}" to match where target=source	String	Matches any target
period	Restricts the report to a given interval length	Long	"period":24
periodUnits	This defines the units for the period. ["minute", "hour", "day", "month"]	String	"periodUnits":"hour"
measurementScale	Scales the measurement values returned by this value	Double	"measurementScale":1
measurementOffset	Offsets the measurement values returned by this value	Double	"measurementOffset":0
percentileLine	Provides a horizontal percentile line calculated at the time the report is run [true, false]	Boolean	"percentileLine":false

percentileValue	The value for the percentile line [0-100]	Double	"percentileValue":95.0