

Alibaba Cloud

Quick BI Data modeling

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Document conventions









Style	Description	Example
 Danger	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 Danger: Resetting will result in the loss of user configuration data.
 Warning	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 Warning: Restarting will cause business interruption. About 10 minutes are required to restart an instance.
 Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: If the weight is set to 0, the server no longer receives new requests.
 Note	A note indicates supplemental instructions, best practices, tips, and other content.	 Note: You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click Settings> Network> Set network type .
Bold	Bold formatting is used for buttons, menus, page names, and other UI elements.	Click OK .
Courier font	Courier font is used for commands	Run the <code>cd /d C:/window</code> command to enter the Windows system folder.
<i>Italic</i>	Italic formatting is used for parameters and variables.	<code>bae log list --instanceid</code> <i>Instance_ID</i>
[] or [a b]	This format is used for an optional value, where only one item can be selected.	<code>ipconfig [-all -t]</code>
{ } or {a b}	This format is used for a required value, where only one item can be selected.	<code>switch {active stand}</code>

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1. Overview of data modeling

Data modeling is used to visualize data, which allows you to quickly identify and extract the required information. Furthermore, it helps you make informed decisions based on data trends.

The basic process of data modeling is shown in the following figure.

Data modeling process

1. Add data sources. Operations on datasets, workbooks, dashboards, and BI portals are all based on data sources. For information about operations on data sources, see [Data source overview](#).
2. Create datasets.
 - Create datasets by using tables in data sources. You can create charts and workbooks based on the created datasets. For information about operations on datasets, see [Dataset overview](#).
 - Create datasets by using local files. For information about how to upload files, see [Upload local files](#).
 - Create datasets by using SQL statements for ad hoc analysis. For information about operations related to SQL statements for ad hoc analysis, see [Use ad hoc queries for data modeling](#) and [SQL overview](#).

2.Data source management

2.1. Overview

Data sources are the basis of data analysis in various fields such as information technology (IT) and data research and development (R&D). This topic describes four types of data sources that Quick BI supports: cloud data sources, user-created data sources, file data sources, and application data sources.

Supported data sources

- Cloud data sources: databases that are deployed in Alibaba Cloud
 - MaxCompute
 - ApsaraDB RDS for MySQL
 - ApsaraDB RDS for SQL Server
 - AnalyticDB for MySQL 2.0
 - HybridDB for MySQL
 - AnalyticDB for PostgreSQL
 - ApsaraDB RDS for PostgreSQL
 - ApsaraDB RDS for PPAS
 - Data Lake Analytics (for Quick BI Enterprise Standard and Quick BI Pro)
 - Hive (for Quick BI Enterprise Standard and Quick BI Pro)
 - OSS (for Quick BI Enterprise Standard and Quick BI Pro)
 - DRDS (for Quick BI Enterprise Standard and Quick BI Pro)
 - Presto (for Quick BI Enterprise Standard and Quick BI Pro)
 - AnalyticDB for MySQL 3.0
 - PolarDB for MySQL (for Quick BI Enterprise Standard and Quick BI Pro)
 - TSDB (for Quick BI Enterprise Standard and Quick BI Pro)
 - ApsaraDB for HBase (for Quick BI Enterprise Standard and Quick BI Pro)
- User-created data sources: databases that are locally created by users
 - MySQL database hosted on an ECS instance
 - SQL Server database hosted on an ECS instance
 - PostgreSQL database hosted on an ECS instance
 - Oracle
 - Hive (for Quick BI Enterprise Standard and Quick BI Pro)
 - Vertica (for Quick BI Enterprise Standard and Quick BI Pro)
 - IBM DB2 LUW (for Quick BI Enterprise Standard and Quick BI Pro)
 - SAP IQ (Sybase IQ) (for Quick BI Enterprise Standard and Quick BI Pro)
 - SAP HANA (for Quick BI Enterprise Standard and Quick BI Pro)
 - Presto (for Quick BI Enterprise Standard and Quick BI Pro)

Network requirements

When you add a data source, take note of the following network requirements:

1. ApsaraDB for RDS instances in a VPC can access Quick BI by using a public domain name. However, only ApsaraDB for RDS instances that run the MySQL or SQL Server engine in a VPC can access Quick BI by using an internal domain name.
2. ApsaraDB for RDS instances in a classic network can access Quick BI by using either a public domain name or an internal domain name. Before you connect an ApsaraDB for RDS instance to Quick BI by using a public domain name, you must configure an IP address whitelist for the ApsaraDB for RDS instance. For more information, see [Configure a whitelist](#).
3. Quick BI is accessible from public networks.
4. User-created MySQL or SQL Server databases hosted on an ECS instance in a VPC can access Quick BI by using an internal domain name.

More operations

For more operations on data sources, see the following topics:

- [Create cloud data sources](#)
- [Create user-created data sources](#)
- [Manage tables](#)

2.2. Add cloud data sources

2.2.1. Add a cloud data source MaxCompute

This topic describes how to add a cloud data source MaxCompute.

Prerequisites

- A MaxCompute database is created.
- The AccessKey ID and AccessKey secret used for authentication are obtained.

Procedure

1. Log on to the Quick BI console.
2. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
3. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
4. In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **MaxCompute** card.



5. In the **Add MaxCompute Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source MaxCompute</i> .

Parameter	Description
Database Address	<p>The default database address is used in most cases. If you want to change the address, see Configure endpoints.</p> <p>Note The database address varies depending on the region where the database instance resides. In a classic network, if your database instance is deployed in the China (Hong Kong) region, the database address is <code>http://service.cn-hongkong.maxcompute.aliyun-inc.com/api</code>. If it is deployed in the Singapore region, the database address is <code>http://service.ap-southeast-1.maxcompute.aliyun-inc.com/api</code>. For more information, see Configure endpoints.</p>
Project Name	<p>The name of the project that is created based on the data source. In this example, set the value to <code>maxcompute</code>.</p>
AccessKey ID	<p>The AccessKey ID that is displayed in the Alibaba Cloud Management console.</p> <p>Note Make sure that the AccessKey ID is valid. The account who owns the AccessKey ID can be a project administrator, a project owner, or a common user with the permissions to list, select, and create instances.</p>
AccessKey Secret	<p>The AccessKey secret that is displayed in the Alibaba Cloud Management console.</p> <p>Note Make sure that the AccessKey secret is valid. The account that owns the AccessKey secret can be a project administrator, a project owner, or a common user with the permissions to list, select, and create instances.</p>

6. Click **Test Connection** to test connectivity with the database.

7. After the database passes the connectivity test, click **Add**. After the data source is added, you are redirected to the **Data Sources** page. All tables included in the data source are listed in the right pane of the page.

Note MaxCompute data sources use asynchronous loading and updating. After you create a MaxCompute data source, wait for one to five minutes for data synchronization.

2.2.2. Add a cloud data source ApsaraDB RDS for MySQL

This topic describes how to add a cloud data source ApsaraDB RDS for MySQL.

Prerequisites

- An ApsaraDB RDS for MySQL database is created.
- The username and password that you use to access the ApsaraDB RDS for MySQL database are obtained.
- Before you use an ApsaraDB for RDS database as a data source, you must configure an IP address whitelist for the database instance in the ApsaraDB for RDS console. For more information, see [Configure a whitelist](#).

Procedure

1. Log on to the Quick BI console.
2. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
3. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
4. In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **MySQL** card.



5. In the **Add MySQL Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source MySQL</i> .
Database Address	The hostname or IP address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 3306.
Database	The name of the database that you want to access. In this example, set the value to <i>quickbi_test</i> .
Username	The username that you use to access the database. In this example, set the value to <i>quickbi_test</i> .
Password	The password that you use to access the database.
VPC Data Source	If the data source is connected over a VPC, select VPC Data Source and specify the relevant parameters.

Parameter	Description
Region	<p>The region where the database instance resides. In this example, set this value to <i>ap-northeast-1</i>.</p> <div style="border: 1px solid #add8e6; padding: 5px; background-color: #e6f2ff;"> <p>? Note This parameter appears only when you select the VPC Data Source option.</p> </div>

6. Click **Test Connection** to test connectivity with the database.

7. After the database passes the connectivity test, click **Add**. If a data source with the same configurations exists, a message that indicates a configuration conflict is displayed. You do not need to add the same data source repeatedly.

2.2.3. Add a cloud data source ApsaraDB RDS for SQL Server

This topic describes how to add a cloud data source ApsaraDB RDS for SQL Server.

Prerequisites

- An ApsaraDB RDS for SQL Server database is created.
- The username and password that you use to access the ApsaraDB RDS for SQL Server database are obtained.

Context


The method of using an ApsaraDB RDS for SQL Server database as a data source is similar to that of using an ApsaraDB RDS for MySQL database as a data source. The only differences are that you must set the Schema parameter and the default port for you to connect to the ApsaraDB RDS for SQL Server database is 1433.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **SQL Server** card.

4. In the **Add SQL Server Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source SQL Server</i> .

Parameter	Description
Database Address	The hostname or IP address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 1433.
Database	The name of the database that you want to access. In this example, set the value to <i>quickbi_test</i> .
Schema	The schema of the database. Default value: dbo.
Username	The username that you use to access the database. In this example, set the value to <i>quickbi_test</i> .
Password	The password that you use to access the database.
VPC Data Source	If the data source is connected over a VPC, select VPC Data Source and specify the relevant parameters.
Region	The region where the database instance resides. In this example, set this value to <i>China (Qingdao)</i> . <div style="border: 1px solid #ccc; background-color: #e6f2ff; padding: 5px; margin-top: 10px;"> <p> Note This parameter appears only when you select the VPC Data Source option.</p> </div>

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**. If a data source with the same configurations exists, a message that indicates a configuration conflict is displayed. You do not need to add the same data source repeatedly.

2.2.4. Add a cloud data source AnalyticDB for MySQL V2.0

This topic describes how to add a cloud data source AnalyticDB for MySQL V2.0.

Prerequisites

- An AnalyticDB for MySQL V2.0 database is created.
- The AccessKey ID and AccessKey secret used for authentication are obtained.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **AnalyticDB for MySQL 2.0** card.

- In the **Add AnalyticDB for MySQL 2.0 Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>ads_demo</i> .
Database Address	The hostname or IP address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 3306.
Database	The name of the database that you want to access. In this example, set the value to <i>quickbi</i> .
AccessKey ID	The AccessKey ID that is displayed in the Alibaba Cloud Management console.
AccessKey Secret	The AccessKey secret that is displayed in the Alibaba Cloud Management console.

- Click **Test Connection** to test connectivity with the database.

- After the database passes the connectivity test, click **Add**.

2.2.5. Add a cloud data source HybridDB for MySQL

This topic describes how to add a cloud data source HybridDB for MySQL.





Prerequisites

- A HybridDB for MySQL database is created.
- The username and password that you use to access the HybridDB for MySQL database are obtained.
- The AccessKey ID and AccessKey secret used for authentication are obtained.

Procedure

- Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
- On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
- In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **HybridDB for MySQL** card.

- In the **Add HybridDB for MySQL Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source_HybridDB for MySQL</i> .
Database Address	The hostname or IP address of the database that is used as the data source.
Port Number	Default value: 3306.
Database	The name of the database that you want to access. In this example, set the value to <i>quickbi_sla</i> .
Username	The username that you use to access the database. In this example, set the value to <i>quickbi_sla</i> .
Password	The password that you use to access the database.
VPC Data Source	If the data source is connected over a VPC, select VPC Data Source and specify the relevant parameters.
AccessKey ID	The AccessKey ID that you use to purchase the instance where the database resides.  Note This parameter appears only when you select the VPC Data Source option.
AccessKey Secret	The AccessKey secret that you use to purchase the instance where the database resides.  Note This parameter appears only when you select the VPC Data Source option.
Instance ID	The ID of the instance.  Note This parameter appears only when you select the VPC Data Source option.
Region	The region where the instance resides. In this example, set this value to <i>cn-hangzhou</i> .  Note This parameter appears only when you select the VPC Data Source option.

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**. If a data source with the same

configurations exists, a message that indicates a configuration conflict is displayed. You do not need to add the same data source repeatedly.

2.2.6. Add a cloud data source AnalyticDB for PostgreSQL

This topic describes how to add a cloud data source AnalyticDB for PostgreSQL.

Prerequisites





- An AnalyticDB for PostgreSQL database is created.
- The AccessKey ID and AccessKey secret used for authentication are obtained.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **AnalyticDB for PostgreSQL** card.

4. In the **Add AnalyticDB for PostgreSQL Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source AnalyticDB_for_PostgreSQL</i> .
Database Address	The hostname or IP address of the database that is used as the data source.
Port Number	The port that you use to access the database.
Database	The name of the database that you want to access. In this example, set the value to <i>AnalyticDB_for_PostgreSQL</i> .
Schema	Default value: public.
Username	The username that you use to access the database. In this example, set the value to <i>quickbi_test</i> .
Password	The password that you use to access the database.
VPC Data Source	If the data source is connected over a VPC, select VPC Data Source and specify the relevant parameters.

Parameter	Description
AccessKey ID	<p>The AccessKey ID that you use to purchase the instance where the database resides.</p> <p> Note This parameter appears only when you select the VPC Data Source option.</p>
AccessKey Secret	<p>The AccessKey secret that you use to purchase the instance where the database resides.</p> <p> Note This parameter appears only when you select the VPC Data Source option.</p>
Instance ID	<p>The ID of the instance.</p> <p> Note This parameter appears only when you select the VPC Data Source option.</p>
Region	<p>The region where the instance resides. In this example, set this value to <i>cn-hangzhou</i>.</p> <p> Note This parameter appears only when you select the VPC Data Source option.</p>

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.2.7. Add a cloud data source ApsaraDB RDS for PostgreSQL

This topic describes how to add a cloud data source ApsaraDB RDS for PostgreSQL.

Prerequisites

- An ApsaraDB RDS for PostgreSQL database is created.
- The username and password that you use to access the PostgreSQL database are obtained.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the

PostgreSQL card.

- In the **Add PostgreSQL Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source PostgreSQL</i> .
Database Address	The hostname or IP address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 5432.
Database	The name of the database that you want to access. In this example, set the value to <i>quickbi_PostgreSQL</i> .
Schema	Default value: public.
Username	The username that you use to access the database. In this example, set the value to <i>quickbi_test</i> .
Password	The password that you use to access the database.
VPC Data Source	If the data source is connected over a VPC, select VPC Data Source and specify the relevant parameters.
Region	The region where the instance resides. In this example, set the value to cn-qingdao.
SSL	After you select the SSL option, the data source supports the interactive query service MaxCompute Lightning provided by MaxCompute. Make sure that Schema and Database configured for the data source of the MaxCompute Lightning service are consistent with those for the current data source.

- Click **Test Connection** to test connectivity with the database.

- After the database passes the connectivity test, click **Add**.

2.2.8. Add a cloud data source ApsaraDB RDS for PPAS

This topic describes how to add a cloud data source ApsaraDB RDS for PPAS.

Prerequisites

- An ApsaraDB RDS for PPAS database is created.

- The username and password that you use to access the ApsaraDB RDS for PPAS database are obtained.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **PPAS** card.

4. In the **Add PPAS Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source PPAS</i> .
Database Address	The hostname or IP address of the database that is used as the data source.
Port Number	The port that you use to access the database.
Database	The name of the database that you want to access. In this example, set the value to <i>PPAS</i> .
Schema	Default value: <i>public</i> .
Username	The username that you use to access the database. In this example, set the value to <i>quickbi_test</i> .
Password	The password that you use to access the database.

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.2.9. Add a cloud data source Data Lake Analytics

This topic describes how to add a cloud data source Data Lake Analytics (DLA).

Prerequisites

- A DLA database is created.
- The username and password that you use to access the DLA database are obtained.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **Data Lake**

Analytics card.

- In the **Add Data Lake Analytics Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source Data_Lake_Analytics</i> .
Database Address	The hostname or IP address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 10000.
Database	The name of the database that you want to access. In this example, set the value to <i>qbi_datalake</i> .
Username	The username that you use to access the database. In this example, set the value to <i>root</i> .
Password	The password that you use to access the database.

- Click **Test Connection** to test connectivity with the database.

- After the database passes the connectivity test, click **Add**.

2.2.10. Add a cloud data source DRDS

This topic describes how to add a cloud data source Distributed Relational Database Service (DRDS).

Prerequisites

- A DRDS database is created.
- The username and password that you use to access the DRDS database are obtained.

Context

Quick BI Enterprise Standard and Quick BI Pro allow you to add a cloud DRDS data source.

Procedure

- Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
- On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
- In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **DRDS** card.



- In the **Add DRDS Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source drds</i> .
Database Address	The hostname or IP address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 3306.
Database	The name of the database that you want to access. In this example, set the value to <i>drds</i> .
Username	The username that you use to access the database. In this example, set the value to <i>quickbi_test</i> .
Password	The password that you use to access the database.

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.2.11. Add a cloud Presto data source

This topic describes how to add a cloud Presto data source.

Prerequisites

- A Presto database is created on Alibaba Cloud.
- The username and password that you use to access the Presto database are obtained.

Context

Quick BI Enterprise Standard and Quick BI Pro allow you to add a cloud Presto data source.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **Presto** card.

4. In the **Add Presto Database** dialog box, configure the required parameters.

Parameter	Description
-----------	-------------

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source presto</i> .
Database Address	The hostname or IP address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 3306.
catalog	The data source that you use Presto to query. In this example, set the value to <i>hive</i> .
Schema	The current logon username is used by default. In this example, set the value to <i>quickbi_test</i> .
Username	The username that you use to access the database. In this example, set the value to <i>user</i> .
Password	The password that you use to access the database.

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.2.12. Add a cloud data source AnalyticDB for MySQL V3.0

This topic describes how to add a cloud data source AnalyticDB for MySQL V3.0.

Prerequisites

- An AnalyticDB for MySQL V3.0 database is created.
- The username and password that you use to access the AnalyticDB for MySQL 3.0 database are obtained.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **AnalyticDB for MySQL 3.0** card.

4. In the **Add AnalyticDB for MySQL 3.0 Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>test</i> .
Database Address	The hostname or IP address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 3306.
Database	The name of the database that you want to access. In this example, set the value to <i>ADB_MySQL_3.0</i> .
Account	The account that you use to access the database. In this example, set the value to <i>root</i> .
Password	The password that you use to access the database.

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.2.13. Add a cloud data source PolarDB for MySQL

This topic describes how to add a cloud data source PolarDB for MySQL.

Prerequisites

- A PolarDB for MySQL database is created.
- The username and password that you use to access the PolarDB for MySQL database are obtained.
- The AccessKey ID and AccessKey secret used for authentication are obtained.





Context

Quick BI Enterprise Standard and Quick BI Pro allow you to add a PolarDB for MySQL data source.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **PolarDB for MySQL** card.

4. In the **Add PolarDB for MySQL Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source PolarDB_for_MySQL</i> .
Database Address	The hostname or IP address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 3306.
Database	The name of the database that you want to access. In this example, set the value to <i>PolarDB</i> .
Username	The username that you use to access the database. In this example, set the value to <i>root</i> .
Password	The password that you use to access the database.
VPC Data Source	If the data source is connected over a VPC, select VPC Data Source and specify the relevant parameters.
AccessKey ID	The AccessKey ID that you use to purchase the instance where the database resides. <div style="border: 1px solid #ccc; background-color: #e6f2ff; padding: 5px; margin-top: 10px;"> <p> Note This parameter appears only when you select the VPC Data Source option.</p> </div>
AccessKey Secret	The AccessKey secret that you use to purchase the instance where the database resides. <div style="border: 1px solid #ccc; background-color: #e6f2ff; padding: 5px; margin-top: 10px;"> <p> Note This parameter appears only when you select the VPC Data Source option.</p> </div>
Cluster ID	The ID of the cluster. <div style="border: 1px solid #ccc; background-color: #e6f2ff; padding: 5px; margin-top: 10px;"> <p> Note This parameter appears only when you select the VPC Data Source option.</p> </div>
Region	The region where the instance resides. In this example, set this value to <i>China (Hangzhou)</i> . <div style="border: 1px solid #ccc; background-color: #e6f2ff; padding: 5px; margin-top: 10px;"> <p> Note This parameter appears only when you select the VPC Data Source option.</p> </div>

5. Click **Test Connection** to test connectivity with the database.

- After the database passes the connectivity test, click **Add**.

2.2.14. Add a cloud data source TSDB

This topic describes how to add a cloud data source Time Series Database (TSDB).

Prerequisites

- A TSDB database is created.
- The **AccessKey ID** and **AccessKey secret** used for authentication are obtained.

Context

Quick BI Enterprise Standard and Quick BI Pro allow you to add a cloud data source TSDB.

Procedure

- Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
- On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
- In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **TSDB** card.



- In the **Add TSDB Database** dialog box, configure the required parameters.



Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source tsdb</i> .
T-SQL Address	The IP address of the T-SQL server.
Port Number	The port that you use to access the database. Default value: 3306. You do not need to set this parameter.
AccessKey ID	The AccessKey ID that you use to purchase the instance where the database resides.
AccessKey Secret	The AccessKey secret that you use to purchase the instance where the database resides.

- Click **Test Connection** to test connectivity with the database.



- After the database passes the connectivity test, click **Add**.

2.2.15. Add a cloud data source ApsaraDB for HBase

This topic describes how to add a cloud data source ApsaraDB for HBase.

Prerequisites

- An ApsaraDB for HBase database is created.

- The AccessKey ID and AccessKey secret used for authentication are obtained.
- The cluster ID is obtained.

Context

Quick BI Enterprise Standard and Quick BI Pro allow you to add a cloud data source ApsaraDB for HBase.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **Cloud Data Sources** tab and then the **Hbase** card.



4. In the **Add Hbase Database** dialog box, configure the required parameters.



Parameter	Description
Name	The name of the data source. In this example, set the value to <i>cloud data source hbase</i> .
ZooKeeper Address	The IP address of the ZooKeeper server.
Port Number	The port that you use to access the database. Default value: 2181.
Schema	The schema of the database.
AccessKey ID	The AccessKey ID that you use to purchase the instance where the database resides.
AccessKey Secret	The AccessKey secret that you use to purchase the instance where the database resides.
Cluster ID	The ID of the cluster.

5. Click **Test Connection** to test connectivity with the database.



6. After the database passes the connectivity test, click **Add**.

2.3. Add user-created data sources

2.3.1. Add a user-created MySQL data source

This topic describes how to add a user-created MySQL data source.

Prerequisites

- The database that you use as a data source is accessible from the Internet. If you want to deploy Quick BI on a private cloud, consult technical support personnel.
- A user-created MySQL database is created.
- The username and password that you use to access the user-created MySQL database are obtained.
- The AccessKey ID and AccessKey secret used for authentication are obtained.

Context

Quick BI Enterprise Standard allows you to access user-created data sources in group workspaces over SSH tunnels. This access mode is not supported for Quick BI of other editions.

Enable the firewall

You can access a MySQL database only after the firewall is enabled.

1. Run the following command to open the configuration file of the firewall:

```
vi /etc/sysconfig/iptables
```

2. Add the following command to the configuration file:

```
-A RH-Firewall-1-INPUT -m state --state NEW -m tcp -p tcp --dport 3306 -j ACCEPT
```

3. Restart the iptables service after the configuration is complete.







```
service iptables restart
```

Add a user-created MySQL data source

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **User-created Data Sources** tab and then the **MySQL** card.

4. In the **Add MySQL Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>user-created data source MySQL</i> .
Database Address	The IP Address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 3306.
Database	The name of the database that you want to access. In this example, set the value to <i>mysql</i> .

Parameter	Description
Username	The username that you use to access the database. In this example, set the value to <i>root</i> .
Password	The password that you use to access the database.
User-created ECS Data Source (VPC)	Optional.
AccessKey ID	<p>The AccessKey ID that you use to purchase the instance where the database resides.</p> <p> Note This parameter appears only when you select the User-created ECS Data Source (VPC) option.</p>
AccessKey Secret	<p>The AccessKey secret that you use to purchase the instance where the database resides.</p> <p> Note This parameter appears only when you select the User-created ECS Data Source (VPC) option.</p>
Instance ID	<p>The ID of the instance.</p> <p> Note This parameter appears only when you select the User-created ECS Data Source (VPC) option.</p>
ECS Instance Region	<p>The region where the instance resides.</p> <p> Note This parameter appears only when you select the User-created ECS Data Source (VPC) option.</p>
ssh	Optional.
SSH Host	<p>The hostname or IP address of the SSH host.</p> <p> Note This parameter appears only when you select the ssh option.</p>
SSH Username	<p>The username that you use to access the SSH host.</p> <p> Note This parameter appears only when you select the ssh option.</p>

Parameter	Description
SSH Password	The password that you use to access the SSH host. <div style="border: 1px solid #ccc; background-color: #e6f2ff; padding: 5px;"> ? Note This parameter appears only when you select the ssh option. </div>
SSH Port Number	The port that you use to access the SSH host. Default value: 22. <div style="border: 1px solid #ccc; background-color: #e6f2ff; padding: 5px;"> ? Note This parameter appears only when you select the ssh option. </div>

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.3.2. Add a user-created SQL Server data source

This topic describes how to add a user-created SQL Server data source.

Prerequisites





- The database that you use as a data source is accessible from the Internet. If you want to deploy Quick BI on a private cloud, consult technical support personnel.
- A user-created SQL Server database is created.
- The username and password that you use to access the user-created SQL Server database are obtained.
- The **AccessKey ID** and **AccessKey secret** used for authentication are obtained.





Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **User-created Data Sources** tab and then the **SQL Server** card.

4. In the **Add SQL Server Database** dialog box that appear, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>user-created data source SQLServer</i> .

Parameter	Description
Database Address	The IP Address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 1433.
Database	The name of the database that you want to access. In this example, set the value to <i>SQLServer</i> .
Schema	The schema of the database. Default value: <i>dbo</i> .
Username	The username that you use to access the database. In this example, set the value to <i>root</i> .
Password	The password that you use to access the database.
User-created ECS Data Source (VPC)	Optional.
AccessKey ID	<p>The AccessKey ID that you use to purchase the instance where the database resides.</p> <p> Note This parameter appears only when you select the User-created ECS Data Source (VPC) option.</p>
AccessKey Secret	<p>The AccessKey secret that you use to purchase the instance where the database resides.</p> <p> Note This parameter appears only when you select the User-created ECS Data Source (VPC) option.</p>
Instance ID	<p>The ID of the instance.</p> <p> Note This parameter appears only when you select the User-created ECS Data Source (VPC) option.</p>
ECS Instance Region	<p>The region where the instance resides. In this example, set this value to <i>China (Qingdao)</i>.</p> <p> Note This parameter appears only when you select the User-created ECS Data Source (VPC) option.</p>
ssh	Optional.

Parameter	Description
SSH Host	The hostname or IP address of the SSH host.  Note This parameter appears only when you select the ssh option.
SSH Username	The username that you use to access the SSH host.  Note This parameter appears only when you select the ssh option.
SSH Password	The password that you use to access the SSH host.  Note This parameter appears only when you select the ssh option.
SSH Port Number	The port that you use to access the SSH host. Default value: 22.  Note This parameter appears only when you select the ssh option.

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.3.3. Add a user-created PostgreSQL data source

This topic describes how to add a user-created PostgreSQL data source.

Prerequisites

The database that you use as a data source is accessible from the Internet. If you want to deploy Quick BI on a private cloud, consult technical support personnel.

- A user-created PostgreSQL database is created.
- The username and password that you use to access the user-created PostgreSQL database are obtained.
- The **AccessKey ID** and **AccessKey secret** used for authentication are obtained.



Context







Quick BI Enterprise Standard allows you to access user-created data sources in group workspaces over SSH tunnels. This access mode is not supported for Quick BI of other editions.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **User-created Data Sources** tab and then the **PostgreSQL** card.

4. In the **Add PostgreSQL Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>User-created data source PostgreSQL</i> .
Database Address	The IP Address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 5432.
Database	The name of the database that you want to access. In this example, set the value to <i>PostgreSQL</i> .
Schema	The schema of the database. Default value: public.
Username	The username that you use to access the database. In this example, set the value to <i>root</i> .
Password	The password that you use to access the database.
User-created ECS Data Source (VPC)	Optional.
AccessKey ID	<p>The AccessKey ID that you use to purchase the instance where the database resides.</p> <div style="background-color: #e6f2ff; padding: 5px;"> <p> Note This parameter appears only when you select the User-created ECS Data Source (VPC) option.</p> </div>
AccessKey Secret	<p>The AccessKey secret that you use to purchase the instance where the database resides.</p> <div style="background-color: #e6f2ff; padding: 5px;"> <p> Note This parameter appears only when you select the User-created ECS Data Source (VPC) option.</p> </div>

Parameter	Description
Instance ID	<p>The ID of the instance.</p> <p> Note This parameter appears only when you select the User-created ECS Data Source (VPC) option.</p>
ECS Instance Region	<p>The region where the instance resides. In this example, set this value to <i>China (Qingdao)</i>.</p> <p> Note This parameter appears only when you select the User-created ECS Data Source (VPC) option.</p>
SSL	After you select this option, the data source supports MaxCompute Lightning.
ssh	Optional.
SSH Host	<p>The hostname or IP address of the SSH host.</p> <p> Note This parameter appears only when you select the ssh option.</p>
SSH Username	<p>The username that you use to access the SSH host.</p> <p> Note This parameter appears only when you select the ssh option.</p>
SSH Password	<p>The password that you use to access the SSH host.</p> <p> Note This parameter appears only when you select the ssh option.</p>
SSH Port Number	<p>The port that you use to access the SSH host. Default value: 22.</p> <p> Note This parameter appears only when you select the ssh option.</p>

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.3.4. Add a user-created Oracle data source

This topic describes how to add a user-created Oracle data source.

Prerequisites

The database that you use as a data source is accessible from the Internet. If you want to deploy Quick BI on a private cloud, consult technical support personnel.

- A user-created Oracle database is created.
- The username and password that you use to access the user-created Oracle database are obtained.

Context

Quick BI Enterprise Standard allows you to access user-created data sources in group workspaces over SSH tunnels. This access mode is not supported for Quick BI of other editions.

Procedure






1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **User-created Data Sources** tab and then the **Oracle** card.



4. In the **Add Oracle Database** dialog box, configure the required parameters.



Parameter	Description
Name	The name of the data source. In this example, set the value to <i>User-created Oracle data source</i> .
Database Address	The IP Address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 1521.
Database	The name of the database that you want to access. In this example, set the value to <i>Oracle</i> .
Schema	The schema of the database.
Username	The username that you use to access the database. In this example, set the value to <i>SYSTEM</i> .
Password	The password that you use to access the database.

Parameter	Description
ssh	Optional.  Note This option appears only in group workspaces in Quick BI Enterprise Standard.
SSH Host	The hostname or IP address of the SSH host.  Note This parameter appears only when you select the ssh option.
SSH Username	The username that you use to access the SSH host.  Note This parameter appears only when you select the ssh option.
SSH Password	The password that you use to access the SSH host.  Note This parameter appears only when you select the ssh option.
SSH Port Number	The port that you use to access the SSH host. Default value: 22.  Note This parameter appears only when you select the ssh option.

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.3.5. Add a user-created Hive data source

This topic describes how to add a user-created Hive data source.

Prerequisites

The database that you use as a data source is accessible from the Internet. If you want to deploy Quick BI on a private cloud, consult technical support personnel.

- A user-created Hive database is created.
- The username and password that you use to access the user-created Hive database are obtained.

Context

Quick BI Enterprise Standard allows you to access user-created data sources in group workspaces over SSH tunnels. This access mode is not supported for Quick BI of other editions.

Quick BI Enterprise Standard and Quick BI Pro allow you to add user-created Hive data sources in group workspaces.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **User-created Data Sources** tab and then the **Hive** card.

4. In the **Add Hive Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>user-created data source Hive</i> .
Database Address	The IP Address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 10000.
Database	The name of the database that you want to access. In this example, set the value to <i>Hive</i> .
Username	The username that you use to access the database.
Password	The password that you use to access the database.
ssh	Optional. <div style="background-color: #e0f2f1; padding: 5px; border-radius: 5px;"> ? Note This parameter appears only in group workspaces in Quick BI Enterprise Standard. </div>
SSH Host	The hostname or IP address of the SSH host. <div style="background-color: #e0f2f1; padding: 5px; border-radius: 5px;"> ? Note This parameter appears only when you select the ssh option. </div>

Parameter	Description
SSH Username	The username that you use to access the SSH host. <div style="border: 1px solid #add8e6; padding: 5px; background-color: #e0f0ff;"> ? Note This parameter appears only when you select the ssh option. </div>
SSH Password	The password that you use to access the SSH host. <div style="border: 1px solid #add8e6; padding: 5px; background-color: #e0f0ff;"> ? Note This parameter appears only when you select the ssh option. </div>
SSH Port Number	The port that you use to access the SSH host. Default value: 22. <div style="border: 1px solid #add8e6; padding: 5px; background-color: #e0f0ff;"> ? Note This parameter appears only when you select the ssh option. </div>

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.3.6. Add a user-created Vertica data source

This topic describes how to add a user-created Vertica data source.

Prerequisites

The database that you use as a data source is accessible from the Internet. If you want to deploy Quick BI on a private cloud, consult technical support personnel.

- A user-created Vertica database is created.
- The username and password that you use to access the user-created Vertica database are obtained.

Context

Quick BI Enterprise Standard allows you to access user-created data sources in group workspaces over SSH tunnels. This access mode is not supported for other Quick BI editions.

Quick BI Enterprise Standard and Quick BI Pro allow you to add user-created Vertica data sources in group workspaces.


Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **User-created Data Sources** tab and then the

Vertica card.

4. In the Add Vertica Database dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>user-created Vertica data source</i> .
Database Address	The IP Address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 5433.
Database	The name of the database. In this example, set the value to <i>Vertica</i> .
Schema	The schema of the database. Default value: public.
Username	The username that you use to access the database.
Password	The password that you use to access the database.
ssh	Optional. <div style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> ? Note This parameter appears only in group workspaces of Quick BI Enterprise Standard. </div>
SSH Host	The hostname or IP address of the SSH host. <div style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> ? Note This parameter appears only when you select the ssh option. </div>
SSH Username	The username that you use to access the SSH host. <div style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> ? Note This parameter appears only when you select the ssh option. </div>
SSH Password	The password that you use to access the SSH host. <div style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> ? Note This parameter appears only when you select the ssh option. </div>

Parameter	Description
SSH Port Number	<p>The port that you use to access the SSH host. Default value: 22.</p> <p> Note This parameter appears only when you select the ssh option.</p>

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.3.7. Add a user-created IBM DB2 LUW data source

This topic describes how to add a user-created IBM DB2 LUW data source.

Prerequisites

- The database that you use as a data source is accessible from the Internet. If you want to deploy Quick BI on a private cloud, consult technical support personnel.
- A user-created IBM DB2 LUW database is created.
- The username and password that you use to access the user-created IBM DB2 LUW database are obtained.

Context

Quick BI Enterprise Standard allows you to access user-created data sources in group workspaces over SSH tunnels. This access mode is not supported for other Quick BI editions.






Quick BI Enterprise Standard and Quick BI Pro allow you to add user-created IBM DB2 LUW data sources in group workspaces.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **User-created Data Sources** tab and then the **IBM DB2 LUW** card.

4. In the **Add IBM DB2 LUW Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>user-created DB2 data source</i> .

Parameter	Description
Database Address	The IP Address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 50000.
Database	The name of the database. In this example, set the value to <i>DB 2</i> .
Schema	The schema of the database. Default value: DB2INST1.
Username	The username that you use to access the database.
Password	The password that you use to access the database.
ssh	<p>Optional.</p> <p> Note This parameter appears only in group workspaces of Quick BI Enterprise Standard.</p>
SSH Host	<p>The hostname or IP address of the SSH host.</p> <p> Note This parameter appears only when you select the ssh option.</p>
SSH Username	<p>The username that you use to access the SSH host.</p> <p> Note This parameter appears only when you select the ssh option.</p>
SSH Password	<p>The password that you use to access the SSH host.</p> <p> Note This parameter appears only when you select the ssh option.</p>
SSH Port Number	<p>The port that you use to access the SSH host. Default value: 22.</p> <p> Note This parameter appears only when you select the ssh option.</p>

5. Click **Test Connection** to test connectivity with the database.

- After the database passes the connectivity test, click Add.

2.3.8. Add a user-created SAP IQ (Sybase IQ) data source

This topic describes how to add a user-created SAP IQ (Sybase IQ) data source.

Prerequisites

- The database that you use as a data source is accessible from the Internet. If you want to deploy Quick BI on a private cloud, consult technical support personnel.
- A user-created SAP IQ (Sybase IQ) database is created.
- The username and password that you use to access the user-created SAP IQ (Sybase IQ) database are obtained.

Context

Quick BI Enterprise Standard allows you to access user-created data sources in group workspaces over SSH tunnels. This access mode is not supported for other Quick BI editions.

Quick BI Enterprise Standard and Quick BI Pro allow you to add user-created SAP IQ (Sybase IQ) data sources in group workspaces.

Procedure

- Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
- On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
- In the **Add Data Source** dialog box, click the **User-created Data Sources** tab and then the **SAP IQ (Sybase IQ)** card.

- In the **Add SAP IQ (Sybase IQ) Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>user-created SAP_IQ data source</i> .
Database Address	The IP Address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 2638.
Database	The name of the database. In this example, set the value to <i>SA P_IQ</i> .
Schema	The schema of the database. Default value: sybase.
Username	The username that you use to access the database.

Parameter	Description
Password	The password that you use to access the database.
ssh	Optional. <div style="border: 1px solid #add8e6; padding: 5px; background-color: #e0f2f7;"> ? Note This parameter appears only in group workspaces of Quick BI Enterprise Standard. </div>
SSH Host	The hostname or IP address of the SSH host. <div style="border: 1px solid #add8e6; padding: 5px; background-color: #e0f2f7;"> ? Note This parameter appears only when you select the ssh option. </div>
SSH Username	The username that you use to access the SSH host. <div style="border: 1px solid #add8e6; padding: 5px; background-color: #e0f2f7;"> ? Note This parameter appears only when you select the ssh option. </div>
SSH Password	The password that you use to access the SSH host. <div style="border: 1px solid #add8e6; padding: 5px; background-color: #e0f2f7;"> ? Note This parameter appears only when you select the ssh option. </div>
SSH Port Number	The port that you use to access the SSH host. Default value: 22. <div style="border: 1px solid #add8e6; padding: 5px; background-color: #e0f2f7;"> ? Note This parameter appears only when you select the ssh option. </div>

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.3.9. Add a user-created SAP HANA data source

This topic describes how to add a user-created SAP HANA data source.

Prerequisites

- The database that you use as a data source is accessible from the Internet. If you want to deploy Quick BI on a private cloud, consult technical support personnel.
- A user-created SAP HANA Server database is created.

- The username and password that you use to access the user-created SAP HANA database are obtained.

Context

Quick BI Enterprise Standard allows you to access user-created data sources in group workspaces over SSH tunnels. This access mode is not supported for other Quick BI editions.




Quick BI Enterprise Standard and Quick BI Pro allow you to add user-created SAP HANA data sources in group workspaces.

Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **User-created Data Sources** tab and then the **SAP HANA** card.

4. In the **Add SAP HANA Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>user-created SAP_HANA data source</i> .
Database Address	The IP Address of the database that is used as the data source.
Port Number	The port that you use to access the database.
Database	The name of the database.
Schema	The schema of the database. Default value: public.
User Name	The username that you use to access the database.
Password	The password that you use to access the database.
ssh	Optional. <div style="background-color: #e0f2f1; padding: 5px;"> ? Note This parameter appears only in group workspaces of Quick BI Enterprise Standard. </div>
SSH Host	The hostname or IP address of the SSH host. <div style="background-color: #e0f2f1; padding: 5px;"> ? Note This parameter appears only when you select the ssh option. </div>

Parameter	Description
SSH Username	The username that you use to access the SSH host.  Note This parameter appears only when you select the ssh option.
SSH Password	The password that you use to access the SSH host.  Note This parameter appears only when you select the ssh option.
SSH Port Number	The port that you use to access the SSH host. Default value: 22.  Note This parameter appears only when you select the ssh option.

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.3.10. Add a user-created Presto data source

This topic describes how to add a user-created Presto data source.

Prerequisites

- The database that you use as a data source is accessible from the Internet. If you want to deploy Quick BI on a private cloud, consult technical support personnel.
- A user-created Presto database is created.
- The username and password that you use to access the user-created Presto database are obtained.

Context

Quick BI Enterprise Standard allows you to access user-created data sources in group workspaces over SSH tunnels. This access mode is not supported for other Quick BI editions.





Quick BI Enterprise Standard and Quick BI Pro allow you to add user-created Presto data sources in group workspaces.


Procedure

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.

2. On the Data Sources page, click **Create Data Source** in the upper-right corner.
3. In the **Add Data Source** dialog box, click the **User-created Data Sources** tab and then the **Presto** card.

4. In the **Add Presto Database** dialog box, configure the required parameters.

Parameter	Description
Name	The name of the data source. In this example, set the value to <i>user-created Presto data source</i> .
Database Address	The IP Address of the database that is used as the data source.
Port Number	The port that you use to access the database. Default value: 3306.
catalog	The data source queried by using Presto.
Schema	The schema of the database. In this example, set the value to <i>q uickbi_test</i> .
Username	The username that you use to access the database.
Password	The password that you use to access the database.
ssh	<p>Optional.</p> <div style="background-color: #e0f2f1; padding: 5px;"> <p> Note This parameter appears only in group workspaces of Quick BI Enterprise Standard.</p> </div>
SSH Host	<p>The hostname or IP address of the SSH host.</p> <div style="background-color: #e0f2f1; padding: 5px;"> <p> Note This parameter appears only when you select the ssh option.</p> </div>
SSH Username	<p>The username that you use to access the SSH host.</p> <div style="background-color: #e0f2f1; padding: 5px;"> <p> Note This parameter appears only when you select the ssh option.</p> </div>
SSH Password	<p>The password that you use to access the SSH host.</p> <div style="background-color: #e0f2f1; padding: 5px;"> <p> Note This parameter appears only when you select the ssh option.</p> </div>

Parameter	Description
SSH Port Number	<p>The port that you use to access the SSH host. Default value: 22.</p> <p> Note This parameter appears only when you select the ssh option.</p>

5. Click **Test Connection** to test connectivity with the database.

6. After the database passes the connectivity test, click **Add**.

2.4. Manage data sources

On the **Data Sources** page, you can view all your data sources. You can also edit, search for, replace, and delete a data source.

Go to the Data Sources page

- 1.
- 2.
3. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.

Edit a data source

1. On the **Data Sources** page, move your pointer over the target data source and click the

 icon.

2. In the **Edit Data Source** dialog box, edit the data source parameters. The following figure is for reference only. The parameters in the **Edit Data Source** dialog box vary depending on the dataset that is created based on the data source.

3. After the parameters are edited, click **Save**.

Search for a data source

On the **Data Sources** page, enter the keyword of a data source name in the search field and click the

 icon.


Delete a data source

1. On the **Data Sources** page, move your pointer over the target data source and click the

 icon.



2. In the message that appears, click **OK**.


 **Note** If a dataset is created based on the data source, you cannot delete the data source. The system displays an error message when you attempt to delete the data source.

2.5. Manage tables

This topic describes how to quickly find a table in a data source and view the fields and data types in the table.

Search for a table

To quickly find a table in a data source that has a large number of tables, follow these steps:

1. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
2. On the **Data Sources** page, find and click the target data source in the **My Data Sources** list.
3. In the search box at the upper-right corner of the page, enter a keyword and click the  icon. All tables whose names contain the keyword appear.



View the details of a table

You can check the fields and data types of a table to determine whether the table meets your business requirements.

1. On the **Data Sources** page, find and click the target data source in the **My Data Sources** list.
2. Find the target table and click the  icon in the **Actions** column.



3. Dataset management

3.1. Overview of dataset management

You can add or import a data source to create a dataset. For information about how to add or import a data source, see [Create a cloud data source](#), [Create a user-created data source](#), and [Upload local files to a personal workspace](#).

After you create a dataset, you can create a dashboard to visualize data. For information about how to create a dashboard, see [Create a dashboard](#).

On the edit page of a dataset, you can analyze, edit, and rename the dataset.

The following figure shows the sections on the edit page of a dataset.

□

On the edit page of a dataset, you can perform the following operations on the dataset.

- [Edit dimensions and measures](#).
- [Change field types](#).
- [Add a grouping field](#).
- [Join data tables](#).
- [Enable table scan](#).

3.2. Create a dataset

When datasets are created, data tables in data sources or user-created SQL statements for ad hoc analysis are added to Quick BI. Datasets are the basis for visualized data analysis. You can create a dataset based on a data source table or by using an SQL statement for ad hoc analysis.

Create a dataset based on a data source table

1. Log on to the Quick BI console.
2. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
3. On the **Data Sources** page, click the required data source in the **My Data Sources** list. You can upload local files only to MySQL, SQL Server, MaxCompute, and Oracle databases. In this example, **mysql** is selected.
4. Click the **Tables** or **Uploaded Files** tab based on your business requirements.
 - If you want to create a dataset from a data table in the database, click the **Tables** tab.
 - If you want to create a dataset from an uploaded file, click the **Upload Files** tab.

You can upload local files only to MySQL, SQL Server, MaxCompute, and Oracle databases.
5. Find the required table and click the icon in the **Actions** column.
6. In the **Create Dataset** dialog box, specify the dataset name and save path, and click **OK**.

After the dataset is created, you are redirected to the **Datasets** page. The new dataset is marked as **NEW**.



Create a dataset by using an SQL statement for an ad hoc query

This topic describes how to create a dataset by using an SQL statement for ad hoc query to implement some complex logic for data modeling. Ad hoc queries support dynamic parameter passing to SQL statements. Modeling analysis based on dynamic parameter passing to SQL statements meets the requirements for complex data analysis.

1. Log on to the Quick BI console.
2. Click the **Workspace** tab. In the left-side navigation pane, click **Data Sources**.
3. On the **Data Sources** page, click the required data source in the **My Data Sources** list.
4. In the right section of the page, click **Ad Hoc Query**.



5. On the **Ad Hoc Query** page, perform the following steps:
 - Use an SQL statement to retrieve a table from a specified data source.
 - a. On the **Ad Hoc Query** page, specify a data source.
 -
 - b. Enter an SQL statement in the SQL statement input box.

Sample SQL statement:

```
SELECT *
from company_sales_record
```

- c. Click **Run** to execute the SQL statement.
- d. View the execution result on the **Result** tab.

Click **Create Dataset**. In the **Save Custom SQL** dialog box, specify the dataset name and save path, and click **OK**. After the dataset is created, you are redirected to the **Datasets** page. The new dataset is marked as "NEW".

- Execute an SQL statement to add parameters to a table in the data source.
 - a. On the **Ad Hoc Query** page, specify a data source.
 -

- b. Enter an SQL statement in the SQL statement input box.

Sample SQL statement:

```
SELECT report_date,  
       order_level,  
       shipping_type,  
       area,  
       price,  
       order_number  
from   company_sales_record  
where  ${report_date :report_date}  
and    ${order_level :order_level}  
and    ${order_number :order_number}
```

- c. Click Run to execute the SQL statement.

d. View the execution results.


View the execution results on the Result tab.

a. Click the Result tab.


□

b. Click the History tab to view the SQL statement for the ad hoc query and its execution time and execution duration.

□

- You can click Copy in the Actions column to copy the SQL statement to the SQL statement input box.
- You can click Create Dataset in the Actions column to use this statement to create a dataset.
- You can click the  icon to hide the execution result.

SQL statements for ad hoc queries support dynamic parameter passing. When you use SQL statements for data modeling, you can append parameters to the WHERE clause of an SQL statement in the format of `${Physical field name:Parameter alias}`. The parameters can be referenced by the query control widget.

 **Note** The parameters are not displayed in datasets but are displayed in the query control widget.

Sample SQL statement:

```
SELECT report_date,
       order_level,
       shipping_type,
       area,
       price,
       order_number
from   company_sales_record
where  ${report_date :report_date}
and    ${order_level :order_level}
and    ${order_number :order_number}
```

e. Configure parameters.

You can click **Parameter Settings** in the upper-right corner to add variables and change variable types. The following variable types are supported: String, Number, Date - Year Month Date, Date - Year Month, Date - Year and Week, Date - Year, and YYYYMMDD HH:MM:SS.

- You can click **Add Variable** in the **Parameter Settings** dialog box, and specify variable names and types. The variable name must be added to the **WHERE** clause of an SQL statement in the format of `${Physical field name:Variable name}` .
- You can click **Extract Variable** to obtain the variable aliases in the SQL statement. The default variable type is String, which can be changed.


- You can click **Format** to format SQL statements.

Click **Create Dataset**. In the **Save Custom SQL** dialog box, specify the dataset name and save path, and click **OK**. After the dataset is created, you are redirected to the **Datasets** page. The new dataset is marked as "NEW".

f. Use SQL parameters in the query control widget.

- On the **Datasets** page, find the required dataset and click the


icon in the **Actions** column.

 **Note** If you are using Quick BI Enterprise Standard, select **Standard** or **Full Screen** as the dashboard type. In this example, **Standard** is selected.

- Click the icon.


- Click the **New filter** icon in the middle of the query control or in the upper-right corner of the query control.

- In the **Set Query Conditions** dialog box, specify the name of a query condition and select the datasets that contain the SQL parameters to associate with the query control. The drop-down list of the filter field contains the dimensions, measures, and SQL statements of the datasets. The SQL parameters are displayed in orange.

 **Note** If you select an SQL parameter of the **STRING** type as the associated field and set **Display Mode** to **Drop-Down List** (Former "By Value"), we recommend that you do not set **Source** to **Auto Parsing**. If you set **Source** to **Auto Parsing**, the query control does not return query results.

For information about how to query data based on a date field, a numeric field, and a text field, see [Query data based on a date field](#), [Query data based on a numeric field](#), and [Query data based on a text field](#).

- To modify the SQL statement for an ad hoc query, perform the following steps:

- i. On the Datasets page, find the required dataset, click the  icon in the **Actions** column, and select **Modify SQL**. You can also right-click the dataset and select **Modify SQL**.
- ii. On the SQL statement edit page, modify and execute the SQL statement, and click **Save**.

3.3. Join data tables

If you have multiple tables based on the same data source, you can use the **Table Join** function to join multiple tables by using the snowflake model. For example, when you join Table A with Table B and join Table B with Table C, Quick BI automatically adds join fields involved in hierarchies to the dimension and measure lists of Table A.

Description of joined data tables

Note

- You cannot associate multiple datasets with charts in Quick BI Basic and Quick BI Pro.
- You can associate multiple datasets with charts in Quick BI Enterprise Standard. Now, this feature is only available when the data source type is MaxCompute, MySQL, and Oracle.
- The associated data table can only be the original table in the database. Currently, it cannot be associated with created datasets.

Currently, you can use the following three joins in Quick BI:


- Inner join
- Left outer join
- Full join

 **Note** You cannot use a full join on a MySQL data source.

Example of joining data tables

1. Click the **Join** icon to enter the **Table Join** page as the following figure shows.
 -
2. Click the **+** icon to add a table that you want to join.
3. Click the drop-down arrow for **Dataset Field** to select a field as the following figure shows.
 - _____
4. Click the drop-down arrow for **Join Type** to select a type as the following figure shows.
 - _____
5. Click the drop-down arrow for **Associate Table** to select a table as the following figure shows.
 - _____
6. Click the drop-down arrow for **Join On** to select a field.
7. Click **OK** to add a join table.
 - _____
 - Click the **+** icon at position 1 to join the third table with the second table.

- Click the + icon at position 2 to join the third table with the first table.
- 8. Click the Preview icon to switch to the preview mode as the following figure shows.
-
- 9. Click Save to save the dataset.

 **Note** Before saving the dataset, you can click **Set filter conditions** to filter the data in the current dataset to reduce searches for non-relevant data when using this dataset.

□

3.4. Create a report


3.4.1. Edit a dimension

This topic describes how to edit a dimension, such as a date or geo dimension.


Prerequisites

A dataset is created. For more information, see [Create a dataset](#).

Go to the dimension edit page

1. Log on to the Quick BI console.
2. Click the **Workspace** tab. In the left-side navigation pane, click **Datasets**.
3. On the **Datasets** page, click the name of the target dataset to go to the dataset edit page. You can also find the target dataset and click the  icon in the Actions column.




4. In the **Dimensions** list, find the target field and click the  icon next to the field to perform operations on the field as required. In this example, the target field is `order_level`.



Action	Description
Edit	Edit the name and description of the dimension.
Duplicate Dimension	Duplicate the dimension. The name of the duplicate dimension ends with Duplicate .
Hide When Analyze	Hide the dimension as required.
Show All	Show all dimensions.
Delete	Delete the dimension.
Create Calculated Field (Dimensions)	Create a dimension and customize its calculation method.

Action	Description
Move To	Move the dimension to an existing hierarchy for drilling.
Create Hierarchy	Add the dimension field to a new hierarchy.
Move Up/Move Down	Move the dimension. You can drag or right-click the dimension to move it.
Convert to Measure	Convert the dimension to a measure.
Change Dimension Type	Switch the dimension type among Date/Time (Source Format),Geo,String, and Number.

 **Note** You can duplicate, hide, and delete dimensions at different hierarchy levels.


Edit a date dimension

- You can specify the first day for a week field.

In some countries, Monday is not the first day of a week. You can customize the first day of a week as required.

Edit a geo dimension

If you want to create a map chart, such as a geo bubble map or a colored map, you must convert the type of dimensions that contain geographical information from String to Geo. Otherwise, the map chart fails to display. Such dimensions include area, province, and city.

 **Note** If a dimension has an identifier as shown in the red box of , the dimension type is geo.

- On the dataset edit page, find the target dimension from the Dimensions list and click the



icon.

- For the dimension area, choose **Change Dimension Type > Geo > Region**.

- For the dimension province, choose **Change Dimension Type > Geo > State/Province/Municipality**.

- For the dimension city, choose **Change Dimension Type > Geo > City**.

- (Optional)Create a hierarchy.You can create a hierarchy only when a hierarchical structure exists. Follow these steps:

- i. In the Dimensions list, find the target dimension, click the  icon, and select **Create Hierarchy**.
 - ii. In the **Create Hierarchy** dialog box, customize the hierarchical level name and click **OK**.
 - iii. Find the target field, click the  icon next to the field, and choose **Move To > area_Hierarchy**. Move other dimension fields to this hierarchy. in the same way
3. Click **Save** in the upper-right corner of the page.
 4. Click **Refresh Preview**. The dataset is refreshed.







3.4.2. Add a measure



This topic describes how to add a measure.

Prerequisites

A dataset is created. For more information, see [Create a dataset](#).



Procedure

1. Log on to the Quick BI console.
2. Click the **Workspace** tab. In the left-side navigation pane, click **Datasets**.
3. On the **Datasets** page, click the name of the target dataset to go to the dataset edit page. You can also find the target dataset and click the  icon in the Actions column.

4. In the **Measures** list, click the  icon next to a field and select **Create Calculated Field (Measures)**. You can also click the  icon next to **Measures**.

5. In the **Edit Calculated Field (Mea.)** dialog box, configure the calculated field. If you want to calculate the average order price within a specific period of time, you can add a field **Average_order_price** and configure a calculation function.


-  **Note** When you edit an expression, take note of the following points:
- After you enter a left bracket ([), a measure list appears for you to select the required measure.
 - The syntax of MySQL functions is used.
 - The brackets entered in the Expression field must be half-width brackets.
 - If the expression of the new field contains an aggregate function such as SUM, COUNT, AVG, COUNT DISTINCT, MAX, or MIN, the  icon appears as the field identifier.

- 6. After the configuration is completed, click **OK**.
- 7. Click **Save**.



 **Note** If aggregate functions, such as SUM, COUNT, AVG, COUNT DISTINCT, MAX, or MIN are used, the field is identified with the  icon. Such a field cannot be previewed in the dataset. After you create dashboards by using the dataset, this field can be previewed in the dashboards.


3.4.3. Edit a measure

This topic describes how to edit a measure.


Prerequisites

A dataset is created. For more information, see [Create a dataset](#).

Procedure

- 1. Log on to the Quick BI console.
- 2. Click the **Workspace** tab. In the left-side navigation pane, click **Datasets**.
- 3. On the **Datasets** page, click the name of the target dataset to go to the dataset edit page. You can also find the target dataset and click the  icon in the **Actions** column.



- 4. In the **Measures** list, find the target measure and click the  icon next to the measure to perform the following operations for the measure. In this example, the target measure is **order_number**.



Action	Description
Edit	Edit the measure name and description.
Duplicate Measure	Duplicate the measure. The name of the duplicate measure ends with Duplicate.
Hide When Analyze	Hide the measure as required.
Show All	Show all measures.
Delete	Delete the measure.
Create Calculated Field (Measures)	Create a measure and customize its calculation method.
Move To	Move the measure to an existing folder.

Action	Description
Move Down	Move the measure. You can drag or right-click the measure to move it.
Convert to Dimension	Convert the measure to a dimension.
Format	Set the display format for numbers.
Default Aggregates	Specify the aggregate function. Aggregate functions include SUM, MAX, and MIN.
Change Measure Type	Switch the measure type between String and Number.

3.5. Set dataset permissions

3.5.1. Authorization based on users or user groups

Row-level permission control of Quick BI allows you to perform authorization based on users/user groups or tags. Authorization based on users or user groups is suitable for scenarios that involve a small number of users. This topic describes how to grant permissions to users or user groups.

Prerequisites

A dataset is created. For more information, see [Create a dataset](#).

Context

Currently, only Quick BI Pro and Quick BI Enterprise Standard allow you to configure row-level permissions on a dataset in a group workspace.

Procedure

1. Log on to the Quick BI console.
2. Click the **Workspace** tab. In the left-side navigation pane, click **Datasets**.
3. Click the icon and select the target group workspace from the drop-down list.



4. On the **Datasets** page, find the target dataset, click the icon in the **Actions** column, and select **Grant Row-level Permissions**. You can also right-click the target dataset and select **Grant Row-level Permissions**.



5. In the **Grant Row-Level Permissions to Dataset XXX** (XXX indicates the dataset name) dialog box, select **Enable Row-level Access Control** and select **Users/User Groups** for **Authorize**.
6. Click the drop-down icon next to **Fields**. Select the fields based on which authorization is

performed, such as province and Measure Value.

Note The values of Measure Value are the measures in the dataset. You can grant row-level permissions based on Measure Value to allow different users to view different measures.

- In the **Permission To** section, click **province**. The **Select** section displays all provinces.
- Select a user or user group and configure permissions in the **Select** section. The following figure shows that the user is authorized to view data of Beijing and Anhui.

Note If row-level permission control is enabled for a field in a dataset, users must be granted permissions on this field to access the charts generated based on this dataset.

For information about how to create a user group, see [Create a user group](#).

- Click **Add**.

3.5.2. Authorization based on tags

Row-level permission control is performed on datasets. Row-level permission control of Quick BI allows you to perform authorization based on users/user groups or tags. If the number of members in an organization is large, we recommend that you use tag-based authorization. This way, you can authorize all users at a time, which reduces authorization costs and complexity and facilitates future management.

Prerequisites

A dataset is created. For more information, see [Create a dataset](#).

Context

Currently, only Quick BI Pro and Quick BI Enterprise Standard allow you to configure row-level permissions on a dataset in a group workspace.


Set member tags

The following example demonstrates how to allow users to view only the rows with `shipping_type` set to truck and air in the dataset `company_sales_record`.

- Log on to the Quick BI console.
- In the top navigation bar, click the icon.
- On the **Organization** page, click the **Members** tab, find the target member, and click **Edit Tags** in the **Actions** column.
 - For more information about how to manage tags, see [Tags](#).
- In the **Edit Tags** dialog box, set the value of the area tag to air, truck and click **OK**.

After you set the member tag, you must configure tag-based authorization in the Grant Row-Level Permissions to Dataset `company_sales_record` dialog box.

Configure tag-based authorization

1. Click the **Workspace** tab. In the left-side navigation pane, click **Datasets**.
2. On the Datasets page, find the dataset `company_sales_record`, click the  icon in the **Actions** column, and select **Grant Row-level Permissions**.

You can also right-click the dataset `company_sales_record` and select **Grant Row-level Permissions**.

3. In the Grant Row-Level Permissions to Dataset `company_sales_record` dialog box, select **Enable Row-level Access Control** and select **Tag for Authorize**.
4. Click the drop-down icon next to **Fields** and select `shipping_type`. Select `air` in the **Tag** column. Then, click **OK**.


□

After tag-based authorization is configured, the user can view only rows with `shipping_type` set to `air` and `truck`.

Example of tag-based authorization

1. Prepare the row-level permission matrix. For an organization, row-level permission control is closely related to the organizational structure. The organizational structure generally includes departments and positions. A position is a collection of responsibilities and permissions that are assigned by the organization to individuals. The row-level permissions of an employee are related to the department and position of the employee, but are not totally determined by them. For example, the manager of Branch Company A is also responsible for the business of Branch Company B. The manager has the permissions to access specific data of the two branch companies.

The row-level permission matrix is based on tag-based authorization and has the following features:

- **Permission scope:**
 - `example1` has the permissions to access all the data of the organization.
 - `example2` has the permissions to access data in Zhejiang province in East China.
 - `example3` has the permissions to access data in Hangzhou city in East China.
 - The tag fields can be customized. The fields start with `tag_`, such as `tag_area`, `tag_province`, and `tag_city`.
 - `$ALL_MEMBERS$` indicates the permissions to access all data.
 - If a tag corresponds to multiple permissions, separate the permissions with commas (,).
 - If a tag is empty, the user has no permission.
2. Import tags. In most cases, if tags are initialized or the organizational structure is changed greatly, you need to import tags. To import tags, follow these steps:
 - i. In the top navigation bar, click the  icon.
 - ii. On the **Organization** page, click the **Members** tab and then click **Import Members**.

- iii. In the **Import Organization Members** dialog box, click **Upload Excel** to upload the sorted-out permission matrix.
3. Change tag values. If permissions of some employees need to be changed, you need to change tag values.
 - i. On the **Members** tab of the **Organization** page, find the employee whose permissions need to be changed and click **Edit Tags** in the **Actions** column.
 - ii. In the **Edit Tags** dialog box, change the tag values and click **OK**.
4. Specify tags for fields based on which permission control is performed.
 - i. Click the **Workspace** tab. In the left-side navigation pane, click **Datasets**.
 - ii. On the **Dataset** page, right-click the target dataset and select **Grant Row-level Permissions**.
 - iii. In the **Grant Row-Level Permissions to Dataset XXX** (XXX indicates the dataset name) dialog box, select **Enable Row-level Access Control**.
 - iv. Select **Tag** for **Authorize**. Click the drop-down icon next to **Fields** and select tag parameters. Click **OK**.

Verify tag-based authorization

Before you enable row-level permission control, the order distribution chart displays the data of the whole country.

After you enable row-level permission control, the order distribution chart displays data of a specific area, such as Zhejiang province.

3.6. Optimize dataset performance

This topic describes how to optimize dataset performance by configuring the cache duration, using the built-in cache of a slow database, and enabling full table scan.

Prerequisites

A dataset is created. For more information, see [Create a dataset](#).

Configure the cache duration for a dataset

After caching is enabled, you can set the cache duration to 30 minutes or 1 hour.

- After the cache duration elapses, the cached data becomes invalid, and queries on the report page generate new cache. Subsequent SQL statements that are executed within the cache duration will obtain data from the new cache.
- Cache is cleared by dataset. When you manually trigger cache clearing or after the cache duration elapses, the cache of all charts generated based on the dataset is cleared.
 1. Log on to the Quick BI console.
 2. Click the **Workspace** tab. In the left-side navigation pane, click **Datasets**.
 3. On the **Datasets** page, find the target dataset, click the icon in the **Actions** column, and select **Cache Configuration**. You can also right-click the target dataset and select **Cache Configuration**.
 4. In the **Cache Configuration** dialog box, select **Enable Caching**, set **Cache Duration**, and click

OK.Enable Caching is selected by default.

Use the built-in cache of a slow database

For slow databases such as MaxCompute (formally ODPS) and Hive, a built-in cache is provided to optimize dataset performance.

Enable full table scan

We recommend that you enable full table scan to query data from datasets that are created based on a MaxCompute partitioned table.

1. Log on to the Quick BI console.
2. Click the **Workspace** tab. In the left-side navigation pane, click **Datasets**.
3. On the **Datasets** page, find the target dataset, click the icon in the **Actions** column, and select **Edit Properties**. You can also right-click the target dataset and select **Edit Properties**.
4. In the **Edit Properties** dialog box, select **Scan Full Table** to enable full table scan.
5. Click **Save**.
6. (Optional) If full table scan is slow, you can use **field-based filtering** or **SQL statement-based filtering** to speed up the scan.
 - **Field-based filtering**
 - a. On the **Datasets** page, find the target dataset and click the icon in the **Actions** column.
 - b. On the dataset edit page, click **Set Filter** in the top menu bar.
 - c. In the **Set Filter Fields** dialog box, add a filter field.
 - **SQL statement-based filtering**

3.7. Toolbar

You can save, refresh, synchronize, and enable the protected security level for a dataset by using the toolbar.

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- **Lock mechanism:** protects data when the protected security level is enabled.
 - **Sync Schema:** detects changes of fact tables such as field adding and the dataset is synchronized with the changes. Deleting or renaming fields does not cause deleting dimensions or measures of a dataset
 - **Refresh Preview:** refreshes a dataset and displays the data preview. Save before refreshing a dataset to view the latest data.
 - **Set Filter:** sets filters for a dataset to avoid full table scan.
 - **Save:** saves a dataset.
 - **Save as:** saves a copy of a dataset.

3.8. Search for and delete datasets

After you create a dataset, you can search for and delete the dataset.

Search for a dataset

1. Log on to the Quick BI console.
2. Click **Datasets** to go to the Datasets page.
3. In the search box, enter a dataset name or the creator's name.
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4. Click the search icon to search for the dataset.

Delete a dataset

1. Log on to the Quick BI console.
2. Click **Datasets** to go to the Datasets page.
3. Select a dataset. Click **More** in the Actions column or right-click the dataset.
4. Select **Delete** to delete the dataset.

3.9. Manage datasets

On the datasets page, you can create, rename, and delete dataset folders.

Create a dataset folder

1. Log on to the Quick BI console.
2. In the left-side navigation pane, select **Datasets**.
3. Click **Create Folder** and enter a folder name.
4. Click **OK**.
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Rename a dataset folder

1. Log on to the Quick BI console.
2. In the left-side navigation pane, select **Datasets**.
3. Select a dataset folder. Click the **Rename** icon, or right-click the folder and select **Rename**.
4. Enter a new folder name, and click **OK**.
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Delete a dataset folder

1. Log on to the Quick BI console.
2. In the left-side navigation pane, select **Datasets**.
3. Select a dataset folder. Click the **Delete** icon, or right-click the dataset folder and select **Delete**.
4. Click **OK** to delete the dataset folder.
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