Data Security Center

Best Practices

Issue 06

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1 How Do I Prevent Personal Sensitive Data From Being Disclosed During Development and Testing?

Sensitive data refers to information that, if accessed, disclosed, or misused by unauthorized persons, may pose serious risks to individuals or organizations.

- For individuals, this includes personal information such as ID card numbers, home addresses, employers, and bank card numbers.
- For enterprises or organizations, sensitive data encompasses core information such as customer data, financial details, technical information, and major decisions.

Huawei Cloud Data Security Center (DSC) can perform static data masking on a large amount of data in one operation based on anonymization rules. Static anonymization is usually used when sensitive data in the production environment needs to be transferred to the development, test, or outside environment. It is applicable to scenarios such as development and test, data sharing, and data research.

Common Causes of Data Breaches

- Insider leakage
  - Laptops or mobile devices are lost or stolen.
  - Sensitive data or storage is accessed by unauthorized personal
  - Sensitive data is sent, printed, and copied by employees.
  - Sensitive data is accidentally transmitted out.
- Leakage caused by external attacks
  - Data access is uncontrollable, or there are security vulnerabilities in the data storage system.
  - Improper configurations allow external attacks.
  - Sensitive data or storage is accessed by unauthorized personal

Scenario

Assume that the **dsc_bank** table in the **rsd-dsc-test** database stores the information of the following bank employees:

Figure 1-1 Bank employee information

Name	Birthday	Email	address
San Zhang	1999-06-03 10:10:00	13577[redacted]@163.com	Chengdu, Sichuan
Si Li	1990-08-03 05:05:00	552[redacted]@qq.com	Beijing

To identify and mask sensitive data in the table, you need to first identify the sensitive data and generate an identification result report, then mask the identified sensitive data using the **Hash masking** algorithm SHA256.

Step 1: Purchasing a DSC Professional Edition Instance

Step 1 **Log in to the management console**.

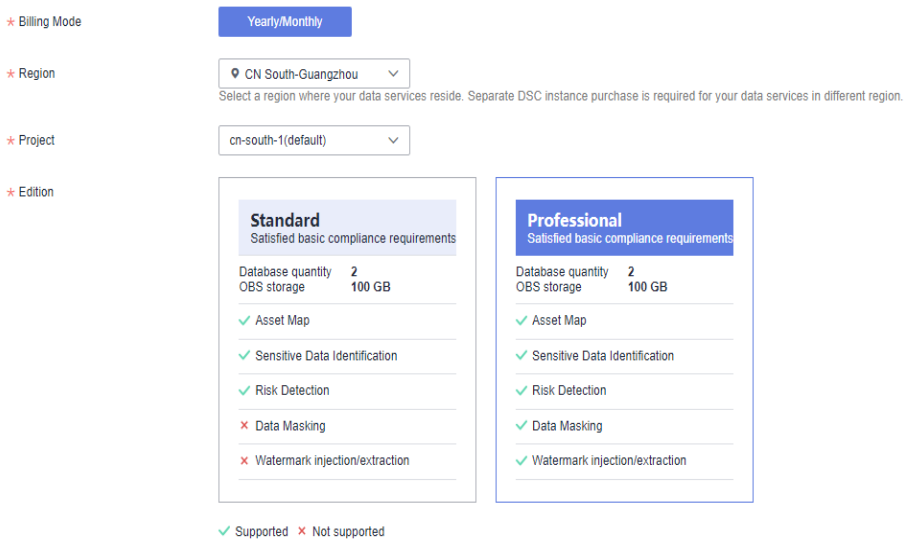
Step 2 Click  in the upper left corner and select a region or project.

Step 3 In the navigation tree on the left, click  . Choose **Security & Compliance** > **Data Security Center** .

Step 4 If you are a first-time user, click **Buy DSC**.

Step 5 On the **Buy DSC** page, select a **Region**.

Figure 1-2 Selecting a region and edition

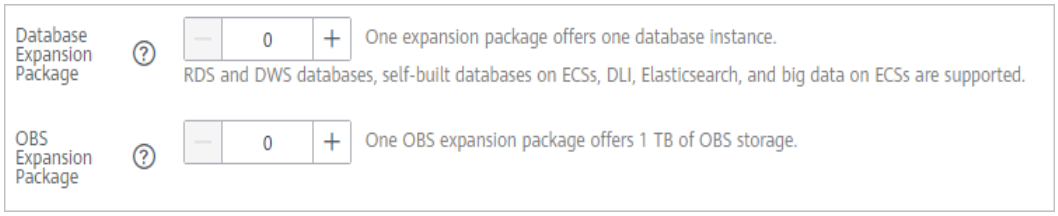


NOTE

To switch a region, select a region from the **Region** drop-down list. Only one DSC edition can be purchased in a region.

Step 6 Set **Database Expansion Package** and **OBS Expansion Package**.

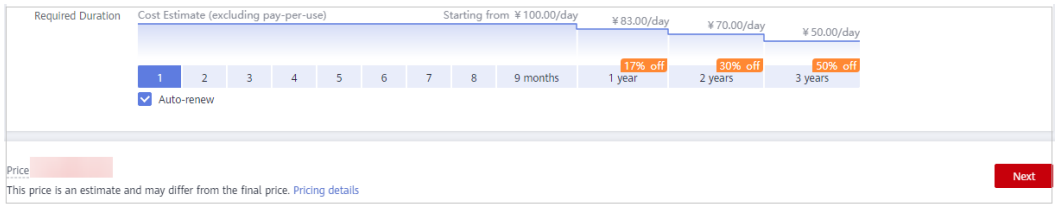
Figure 1-3 Selecting expansion packages



- One expansion package offers one database instance. RDS and DWS databases, self-built databases on ECSs, DLI, Elasticsearch, and big data on ECSs are supported.
- One OBS expansion package offers 1 TB (1024 GB) of OBS storage.

Step 7 Set **Required Duration**. Select the required duration from one month to three years.

Figure 1-4 Setting required duration



NOTE

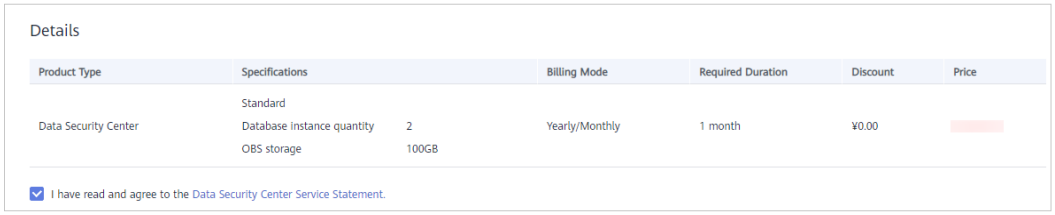
Select **Auto-renew** to enable the system to renew your service by the purchased period when the service is about to expire.

Step 8 Click **Next**.

If you have any questions about the pricing, click **Pricing details**.

Step 9 Confirm the order information and agree to the DSC disclaimer by selecting **I have read and agree to the Data Security Center Service Statement** and click **Pay Now**.

Figure 1-5 Viewing details



Step 10 Select a payment method to pay for your order on the displayed page.

----End

Step 2: Identifying Sensitive Data

Step 1 Log in to the **management console**.

Step 2 In the left navigation page, click , and choose **Security** > **Data Security Center**.

Step 3 In the left navigation pane, choose **Sensitive Data Identification** > **Identification Task**.

Step 4 Click **Create Task**. In the displayed dialog box, configure the basic parameters.

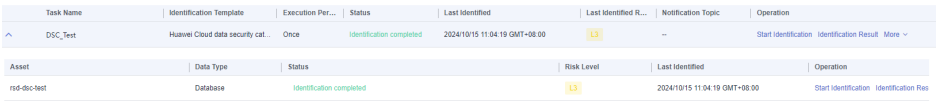
Table 1-1 Parameters for creating a sensitive data identification task

Parameter	Description	Example Value
Task Name	You can customize the task name. The task name must: • Contain 4 to 255 characters. • Consist of letters, digits, underscores (_), and hyphens (-). • Start with a letter. • Be unique.	DSC_Test
Data Type	Type of data to be identified. You can select multiple types. • **OBS**: DSC is authorized to access your Huawei Cloud OBS assets and identify sensitive data in the assets. For details about how to add OBS assets, see **Adding OBS Assets**. • **Database**: DSC identifies sensitive data of authorized database assets. For details about how to authorize database assets, see **Authorizing Access to a Database Asset**. • **Big Data**: The DSC identifies sensitive data of authorized big data assets. For details about how to authorize big data source assets, see **Authorizing Access to Big Data Assets**. • **MRS**: DSC identifies sensitive data of authorized MRS assets. For details about authorized MRS assets, see **Authorizing Access to Big Data Assets**. • LTS: DSC will identify sensitive data of authorized LTS assets. For details about how to add a log stream, see **Adding a Log Stream**.	Database > **rsd-dsc-test**

Parameter	Description	Example Value
Identification Template	You can select a built-in or custom template. DSC displays data by level and category based on the template you select. For details about how to add a template, see **Adding an Identification Template**.	Huawei Cloud Data Security Classifying and Grading Template
Identification Period	Set the execution policy of the data identification task. • **Once**: The task will be executed once at a specified time. • **Daily**: The task is executed at a fixed time every day. • **Weekly**: The task is executed at a specified time every week. • **Monthly**: The task is executed at a specified time every month.	Once
When to Execute	This parameter is displayed when **Identification Period** is set to **Once**. • **Now**: Select the option and click **OK**, the system executes the data identification task immediately. • **As scheduled**: The task will be executed at a specified time.	Now

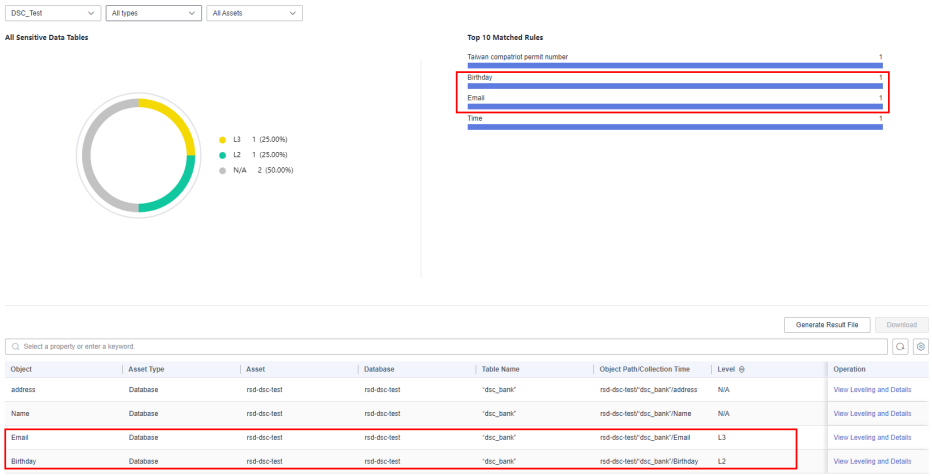
Step 5 Click **OK**. The sensitive data identification task list is displayed.

Figure 1-6 Sensitive data identification task list



Step 6 When the status of the identification task changes to **Identification completed**. Click **View Result** in the **Operation** column to go to the result details page.

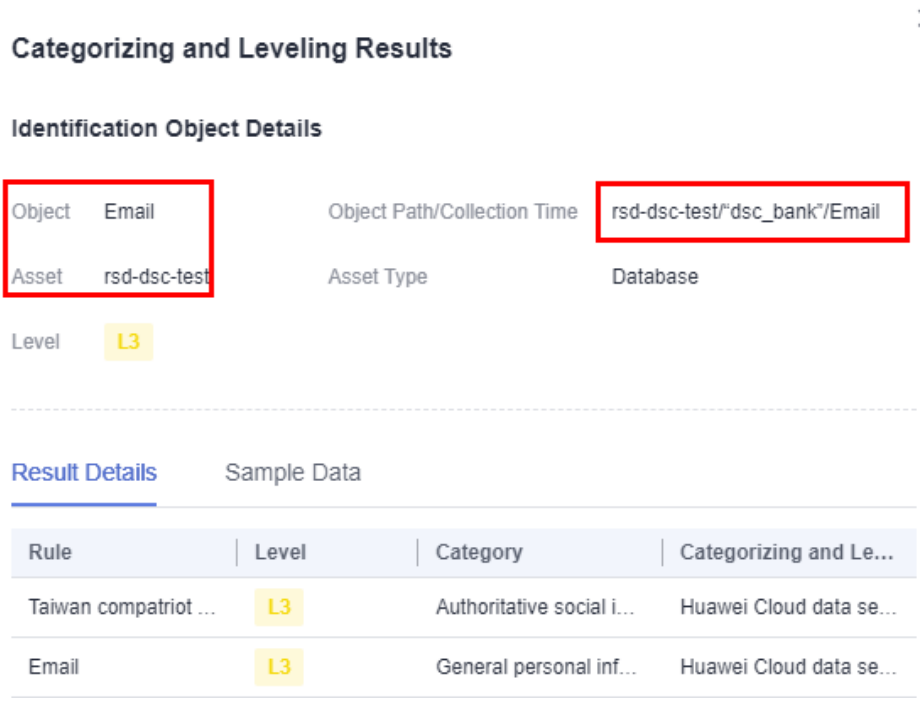
Figure 1-7 Identification result details



The birthday dates and email addresses are identified as sensitive data, as shown in **Figure 1-7**.

Step 7 Click **View Leveling and Details** to view the result details.

Figure 1-8 Categorizing and leveling results



Perform operations described in **Step 3: Performing Static Data Masking** to mask the sensitive data in the **Birthday** and **Email** columns of the **dsc_bank** table in the **rsd-dsc-test** database.

----End

Step 3: Performing Static Data Masking

DSC allows you to create masking tasks for various data sources such as databases, Elasticsearch, MRS, and Hive. This section describes how to create a static masking task for a database. For details about other masking methods, see the following:

- **Creating and Running an Elasticsearch Data Masking Task**
- **Creating and Running an MRS Data Masking Task**.
- **Creating and Running a Hive Masking Task**.
- **Creating and Running an HBase Masking Task**.
- **Creating a DLI Masking Task**.
- **Creating an OBS Masking Task**.

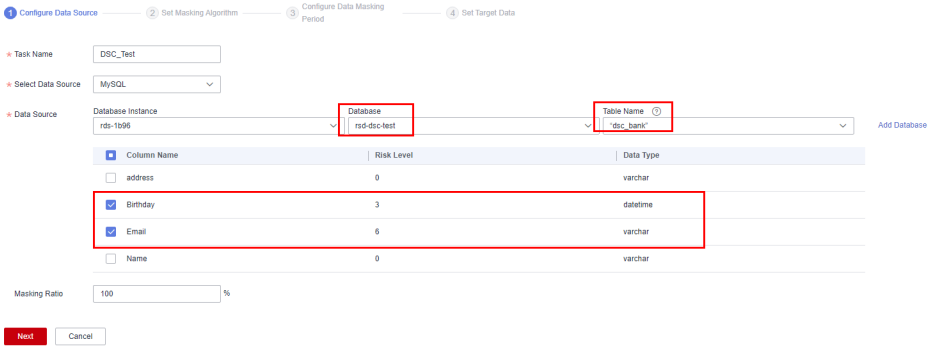
Step 1 In the left navigation pane, choose **Data Asset Protection** > **Static Data Masking**. The **Data Masking** page is displayed.

Step 2 Set **Mask Sensitive RDS Data** to  .

Step 3 Click **Create Task** to configure the data source.

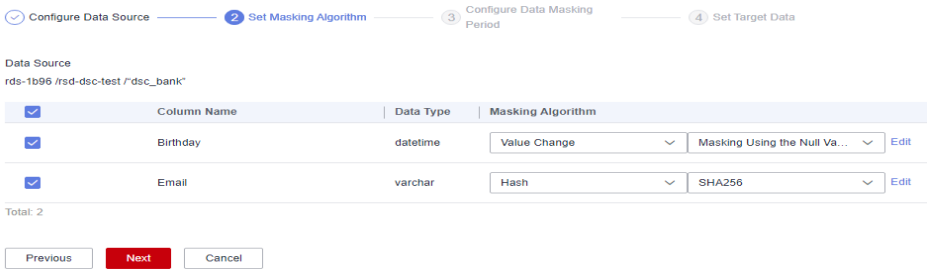
Select all data types if you want a complete table that contains all types of data after the data masking is completed.

Figure 1-9 Data source configuration



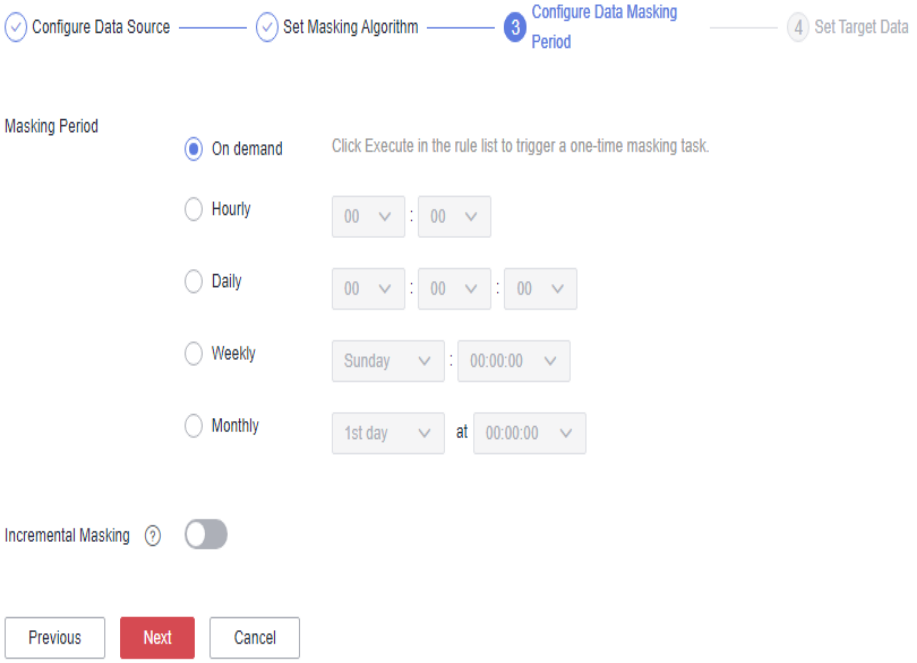
Step 4 Click **Next** to switch to **Set Masking Algorithm**.

Figure 1-10 Configuring the data masking algorithm



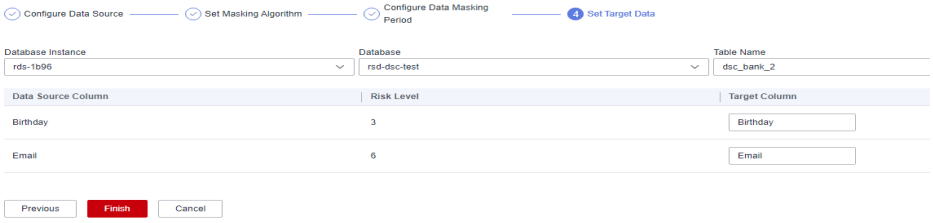
Step 5 Click **Next** to switch to the **Configure Data Masking Period** page and configure the data masking period.

Figure 1-11 Configuring the data masking period



Step 6 Click **Next** to the **Set Target Data** page and configure the storage location of the table generated after data masking.

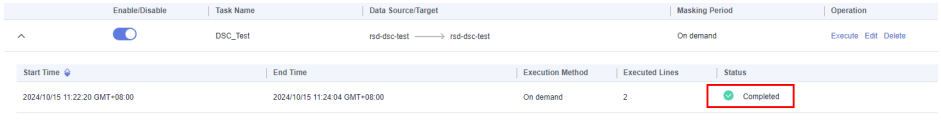
Figure 1-12 Configuring the storage location of the table generated after data masking



Step 7 Click **Finish** to return to the database data masking task list. Click  to enable the masking task and then **Execute** in the **Operation** column to execute the task.

If the status changes to **Completed**, the data masking task has been successfully executed.

Figure 1-13 Identification and masking completed



----End

Verifying the Result

Birthday	Email
(Null)	fb1d058a45cf4f67ac92c0142e60e3737a262f7aa860db40241c52f26e4773e2
(Null)	97dcf0644f0d5665e699d7a17e32dee325d67249f66afea58f09ab3f1a4c8f36

2 Best Practices of OBS Data Security Protection

This document describes how to use the Data Security Center (DSC) to identify, classify, and protect sensitive data stored in OBS.

Overview

Sensitive data includes personal privacy information, passwords, keys, sensitive images, and other high-value data. Such data is usually stored in your OBS bucket in different formats. Once the data is leaked, enterprises will suffer significant economic and reputation losses.

After you authorize DSC to perform identification on the data source, DSC quickly identifies sensitive data from your massive data stored in OBS, classify the sensitive data and display it. DSC also traces the usage of sensitive data, and protects and audits data based on predefined security policies. In this way, DSC allows you to learn about the security status of your OBS data assets at any time.

Application Scenario

- Sensitive data identification

  OBS stores a large amount of data and files. However, it is difficult to have a clear knowledge of the sensitive information contained in OBS.

  You can use the built-in algorithm rules of DSC or customize industry rules to scan, classify, and grade data stored in OBS, and take further security protection measures based on the scanning results. For example, you can use the access control and encryption functions of OBS.

- Anomaly detection and audit

  The DSC can detect access, operation, and management anomalies related to sensitive data and send alarms to you for you to confirm and handle the anomalies. The following behaviors are regarded as anomalies:

  – Unauthorized users access and download sensitive data.
  – Authorized users access, download, and modify sensitive data, as well as change and delete permissions.
  – Authorized users change or delete permissions granted for buckets that contain sensitive data.

- Users who accessed sensitive files fail to log in to the device.

Procedure

Step 1 **Buy DSC**.

Step 2 Log in to the **management console**.

Step 3 Click ☰ and choose **Security** > **Data Security Center**.

Step 4 In the upper left corner of the **Asset Map** page, click **Modify**. The **Allow Access to Cloud Assets** page is displayed.

Step 5 Locate the row that contains the OBS asset, click  in the **Operation** column to enable authorization.

Step 6 For details about how to add OBS assets, see **Adding OBS Assets**.

Step 7 In the navigation tree on the left, choose **Sensitive Data Identification** > **Identification Task**. Click **Create Task** to configure a sensitive data scanning task.

Select **OBS** for **Data Type** and select the OBS asset added in section **Step 6**. For details about other configurations, see section **Creating a Task**.

Table 2-1 Parameters for creating a sensitive data identification task

Parameter	Description	Example Value
Task Name	You can customize the task name. The task name must: • Contain 4 to 255 characters. • Consist of letters, digits, underscores (_), and hyphens (-). • Start with a letter. • Be unique.	test

Parameter	Description	Example Value
Data Type	Type of data to be identified. You can select multiple types. • **OBS**: DSC is authorized to access your Huawei Cloud OBS assets and identify sensitive data in the assets. For details about how to add OBS assets, see **Adding OBS Assets**. • **Database**: DSC identifies sensitive data of authorized database assets. For details about how to authorize database assets, see **Authorizing Access to a Database Asset**. • **Big Data**: The DSC identifies sensitive data of authorized big data assets. For details about how to authorize big data source assets, see **Authorizing Access to Big Data Assets**. • **MRS**: DSC identifies sensitive data of authorized MRS assets. For details about authorized MRS assets, see **Authorizing Access to Big Data Assets**. • LTS: DSC will identify sensitive data of authorized LTS assets. For details about how to add a log stream, see **Adding a Log Stream**.	OBS
Identification Template	You can select a built-in or custom template. DSC displays data by level and category based on the template you select. For details about how to add a template, see **Adding an Identification Template**.	Huawei Cloud Data Security Classifying and Grading Template
Identification Period	Set the execution policy of the data identification task. • **Once**: The task will be executed once at a specified time. • **Daily**: The task is executed at a fixed time every day. • **Weekly**: The task is executed at a specified time every week. • **Monthly**: The task is executed at a specified time every month.	Once

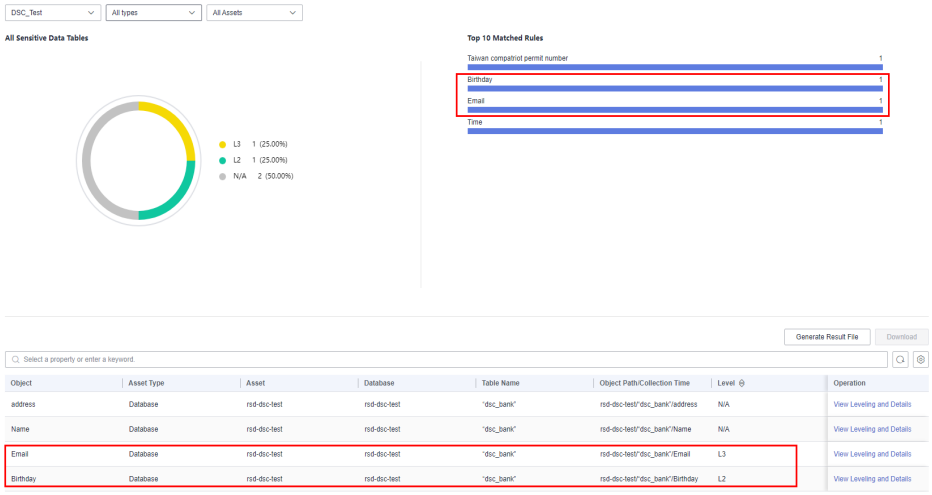
Parameter	Description	Example Value
When to Execute	This parameter is displayed when **Identification Period** is set to **Once**. • **Now**: Select the option and click **OK**, the system executes the data identification task immediately. • **As scheduled**: The task will be executed at a specified time.	Now

Step 8 In the navigation pane, choose **Sensitive Data Identification** > **Identification Task**.

Step 9 Click **Identification Result** in the **Operation** column to view the Identification result.

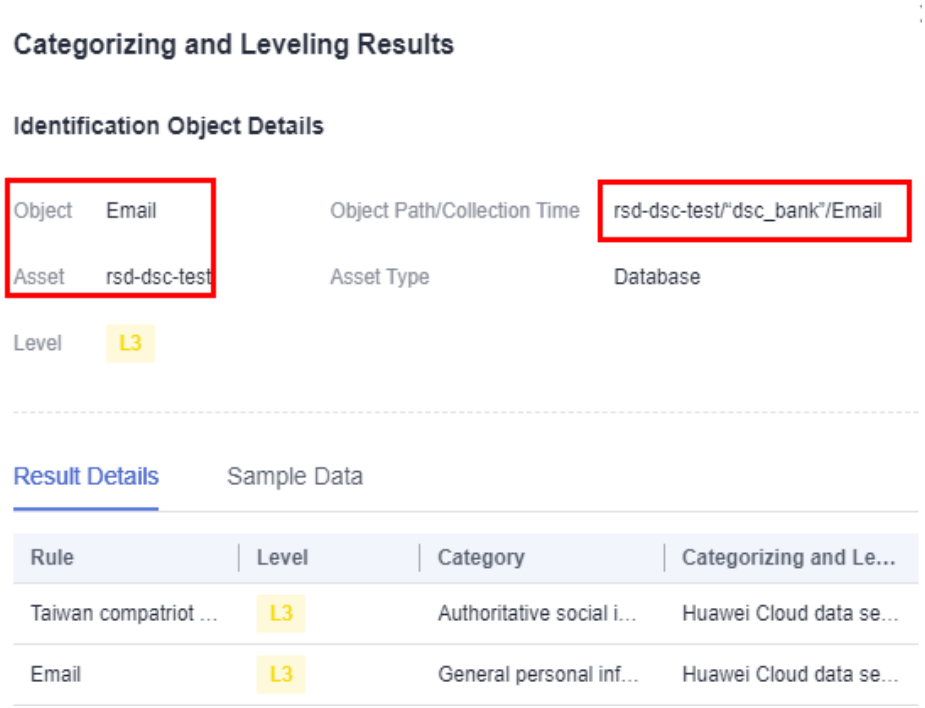
In the upper left corner of the page, set **Task Name** to **dsc-test**, **Data Type** to **OBS**, and **Asset types** to **All Assets** to filter the OBS sensitive data identification result, as shown in **Figure 2-1**.

Figure 2-1 Identification result details



Step 10 In the row containing the desired scan object, click **View Categorizing and Leveling Result Details** in the **Operation** column. The **Categorizing and Leveling Result Details** dialog box is displayed, as shown in **Figure 2-2**.

Figure 2-2 Categorizing and leveling results



1. In the alarm list, view anomalies based on the risk level and check whether there are high-risk events. For operation details, see **OBS Usage Auditing** .
2. On OBS Console, modify the read and write permissions of the risky buckets or files. For details, see **Bucket Policy**.

----End

