Data Security Center

Service Overview

Issue 20

Date 2025-01-21

HUAWEI CLOUD COMPUTING TECHNOLOGIES CO., LTD.

Trademarks and Permissions


and other Huawei trademarks are the property of Huawei Technologies Co., Ltd.
All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei Cloud and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Huawei Cloud Computing Technologies Co., Ltd.

Address: Huawei Cloud Data Center Jiaoxinggong Road
Qianzhong Avenue
Gui'an New District
Gui Zhou 550029
People's Republic of China

Website: https://www.huaweicloud.com/intl/en-us/

Contents

1 What Is DSC?

The Data Security Center (DSC) is a next-generation, cloud-native data security management platform. It offers fundamental data security features, including data classification and grading, data masking, and data watermarking. The DSC visualizes the overall data security posture in the cloud via an asset map and facilitates comprehensive, one-stop data security operations.

Why DSC?

- One-stop data security center

  The product offers seven data security protection features: transmission encryption, personal data protection, privacy protection, data backup, data destruction, data masking, and data watermarking, eliminating the need for repeated installation of data security products.
- Full coverage of cloud scenarios
  - All service data assets: DSC covers all data assets on the cloud, including OBS, RDS, CSS, Hive, and HBase assets.
  - Data risks: The classification and grading results display the risk levels of data.
- Seamless interconnection with cloud native capabilities
  - AI-based sensitive data identification has an identification accuracy higher than 95%.
  - DSC securely and smoothly connects with the cloud native data environment, and shows data, egresses, and risks in a map.
  - DSC provides data encryption, classification, watermarking, and masking capabilities from the bottom layer.
- Integrated protection
  - Integrated protection capability: DSC integrates data security capabilities.
  - Security policy integration: DSC can use one policy can orchestrate different security atomic services.

For details about the advantages of DSC, see **Advantages**.

2 Specifications of Different DSC Editions

This section describes the specifications of different editions of DSC instances.

- DSC provides the **standard** and **professional** editions. **Table 2-1** describes the specifications of each edition.

  NOTE

  - If the number of databases and OBS capacity of the current version cannot meet your service requirements, you can **upgrade edition and specifications**.
  - The OBS capacity is the **used capacity** of the OBS bucket. On the OBS console, choose **Buckets** to view the **used capacity** of the bucket. Select an OBS volume that is greater than or equal to the **used capacity** of the OBS bucket.

Table 2-1 Specifications of different DSC editions

Edition	Database Quantity	OBS Capacity	API Calling Quota	Function
Standard	2	100	Not supported	• Asset Map • Sensitive Data Identification • Data Risk Detection
Professional	2	100	1,000,000 times	• Asset Map • Sensitive data identification • Risk detection • Data masking • Data watermark injection/ extraction • API calling

3 Functions and Features

DSC provides basic data security capabilities such as data classification and grading, data masking, and data watermarking. It also displays the overall security posture of data on the cloud through an asset map and implements one-stop data security operations.

Additionally, DSC is available in Standard and Professional editions to cater to various user needs:

- Standard Edition: Includes data risk detection and data asset classification and grading.
- Professional Edition: Supports static masking (via console) and dynamic masking (via API calls) on data assets post-classification and grading, and offers data watermark injection and extraction.

This section describes the functions supported by DSC and the function differences between different editions.

NOTE

The following symbols are used in this topic:

- √: indicates that the function is supported in the corresponding edition.
- ×: indicates that the function is not supported in the corresponding edition.

Table 3-1 DSC functions

Function	Description	Reference Document	Standard	Professional
Asset Map	You can view multiple aspects of your asset security, such as asset overview, categories and levels, permission configuration, data storage, and sensitive data. This helps you quickly detect risky assets and handle them. • **Asset visualization** – **Data service assets**: All data assets on the cloud, including OBS, RDS, CSS, Hive, and HBase assets are visualized. – **Data risks**: The categorization and leveling results display the risk levels of data. – **Region display**: The region where each asset is located is displayed based on the cloud resource VPC and associated with the service region. • **Egress visualization** – **Data egresses**: All data egresses on the cloud are identified, including EIP, NAT, API Gateway, and ROMA. – **Asset and egress association**: Cloud egresses are associated with data assets and data asset categorization and leveling results. – **Cascading association**: Egresses and the cascading egresses are displayed. • **Policy visualization** – **Data security policies**: All security policies of data assets are detected based on cloud native capabilities and policy risks are displayed. – **Policy recommendation**: Different security policy configurations are	Asset Map	√	√

Function	Description	Reference Document	Standard	Professional
	recommended based on the data asset level.			
Asset Management	• **Asset center**: You can manage data assets from OBS, databases, big data, Log Tank Service (LTS), and MRS. • **Asset catalog**: You can view statistics about your data from different domains or of different types. • **Data exploration**: You can view details about all the added data assets and add descriptions, tags, security levels, and classifications to databases, tables, and data views to manage data assets by level and classification. • **Metadata tasks**: You can create metadata tasks to collect data assets as metadata. In this way, you can manage data assets by level and classification. • **Asset group management**: Data can be managed by group.	**Asset Management**	√	√

Function	Description	Reference Document	Standard	Professional
Sensitive Data Identification	• **Automatic data classification and grading**: DSC automatically discovers and analyzes sensitive data. Utilizing DSC's data identification engines, both structured data (RDS and DWS) and unstructured data (OBS) are scanned, classified, and graded. This process ensures continuous identification and analysis of sensitive data to enhance security. – **File types**: DSC can identify sensitive data from over 200 types of unstructured files. – **Data types**: DSC is able to identify dozens of personal privacy data types (Chinese or English). – **Image types**: DSC is able to identify sensitive words (Chinese and English) in eight types of images such as PNG, JPEG, x-portable-pixmap, TIFF, BMP, GIF, JPX, and JP2. • **Automatic identification of sensitive data** – Automatic identification of sensitive data and personal privacy data – Customized identification rules to meet various requirements of different industries – Visualized identification results which can be downloaded to the local PC The identification duration depends on the data volume, number of identification rules, and scan mode. For details, see **How Long Does It Take for DSC to Identify and Mask Sensitive Data?**	**Creating a Sensitive Data Identification Task**	√	√

Function	Description	Reference Document	Standard	Professional
Data Masking	Supports static data masking and dynamic data masking. Data masking has the following features: • **Zero impact**: DSC reads data from original databases, statically masks sensitive data using precise masking engines, and saves the masked data separately without affecting your data assets. • **Various data sources**: Data of various sources on the cloud, such as RDS, self-built databases on ECSs, or big data, can be masked to meet security requirements. • **Custom data masking policies**: DSC provides you with over 20 preset data masking rules. You can use the default masking rules or customize the masking rules to mask sensitive data in the specified database table. For details about the data masking algorithms supported by DSC, see **Data Masking Algorithms**. • **Easy and quick masking rule configuration for security compliance**: Easy and quick data masking rule configuration can be achieved based on data scanning results. In addition, DSC provides APIs for dynamic data masking. For details, see **Dynamic Data Masking**. DSC uses preset and customized masking algorithms to mask sensitive data stored in RDS, Elasticsearch, MRS, Hive, HBase, DLI, and OBS. For details about the masking duration, see **How Long Does It Take for DSC to Identify and Mask Sensitive Data?**	**Configuring a Data Masking Rule**	×	√

Function	Description	Reference Document	Standard	Professional
Data Watermarking	Provides the functions of adding and extracting watermarks for databases and documents. • **Copyright proof**: The owner information is added to the assets to specify the ownership, achieving copyright protection. • **Automated monitoring**: The user information is added to the assets for tracing data leak. DSC provides APIs for dynamically adding data watermarks and extracting watermarks from data. For details, see **DSC API Reference**.	**Watermark Injection**	×	√
Policy Center	• **Policy baseline**: The policy baseline is a structured set of data security policies, encompassing data security management regulations, data classification and grading requirements, cross-border data transfer management regulations, and requirements for important and core data. DSC provides preset policy templates based on Huawei Cloud's data security governance experience and supports policy addition, deletion, modification, query, structured display, filtering, and querying. • **Log collection**: DSC collects logs from applications (including DBSS) to assist in tracking data flow and promptly identifying exceptions and risks. • **Policy management**: The administrator creates policies for database audit, watermarking, and static masking on the policy management page of the policy center, and then deploys these policies to the relevant services or instances.	**Policy Center**	√	√

Function	Description	Reference Document	Standard	Professional
Dashboard	By default, DSC provides an integrated situational awareness dashboard that presents a thorough analysis of risky assets, identification, masking, and watermarking tasks, as well as events and alarms in the cloud. This dashboard facilitates swift recognition and response to the overall status of assets, including addressing risky assets and urgent alarms.	**Large Screen**	√	√
Alarms	When a system or service risk alarm is generated for DBSS, the alarm event is sent to DSC. You can view the alarm event on the DSC console.	**Alarm Management**	√	√
Events	DSC integrates with key security components, including Database Audit, and Cloud Bastion Host, enabling centralized event management and real-time event delivery to DSC. This allows users to promptly verify and handle events. You can also convert alarms on the **Alarm Management** page to events.	**Event Management**	√	√
OBS Usage Audit	DSC detects OBS buckets based on sensitive data identification rules and monitors identified sensitive data. After abnormal operations of the sensitive data are detected, DSC allows you to view the monitoring result and handle the abnormal events as required.	**OBS Usage Audit**	√	√

Function	Description	Reference Document	Standard	Professional
Data Transfer Details	• **Call chain data collection**: DSC collects log data of each application. • **Call chain data storage and query**: DSC stores the massive collected data and provides quick query capabilities. • **Call chain data generation**: DSC performs data link transfer analysis on the collected and reported logs, and generates a transfer diagram. • **Metric calculation, storage, and query**: DSC calculates various metrics based on the collected log data, and stores the calculation results.	**Data Transfer Details**	√	√
Multi-Account Management	After the multi-account management function is enabled, the security administrator can protect the data of all member accounts without logging in to them.	**Multi-Account Management**	√	√
Alarm Notifications	Sends notifications through the notification method configured by users when sensitive data identification is completed or abnormal events are detected.	**Alarm Notifications**	√	√

4 Advantages

Actionable Insights into Data Security

DSC displays security status in data collection, transmission, storage, exchange, usage and deletion. You can efficiently locate the risks and take immediate actions to ensure data security.

Extensive Range of Data Sources

DSC provides one-stop protection for both structured and unstructured data from a wide range of sources, such as Object Storage Service, databases (self-built databases on ECSs), and big data sources.

Efficient Identification

DSC efficiently identifies sensitive data sources based on expert knowledge bases and Natural Language Processing (NLP).

Flexible Data Masking

DSC leverages preset and user-defined masking algorithms to limit exposure of sensitive data, preventing unauthorized access to sensitive data.

5 DSC Application Scenarios

Data Asset Stocktaking

DSC seamlessly integrates with the cloud-native data environment and automatically discovers data assets on the cloud. Users can view asset security status across multiple dimensions, including asset overview, classification and grading, permission configuration, and data egress analysis.

Data Classification and Grading

DSC automatically identifies sensitive data and analyzes the usage of such data. With data identification engines, DSC scans and classifies structured data and unstructured data in RDS and OBS. It then automatically identifies sensitive data and analyzes the usage of such data for further ensuring security.

Data Masking

DSC builds a data masking engine by leveraging multiple preset and customized masking algorithms. It then masks structured and unstructured data for storage.

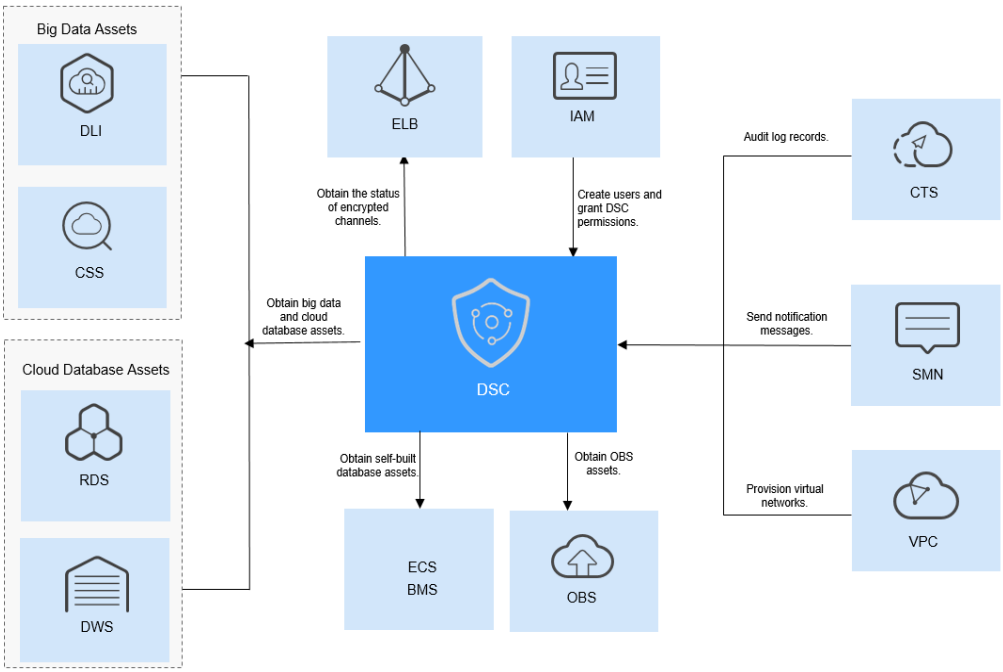
Secure Data Exchange

Data exchange is secured and data leakage sources can be traced through **Data Watermarking**.

6 DSC and Related Services

Figure 6-1 shows the relationships between DSC and related services.

Figure 6-1 DSC and related services



OBS

Object Storage Service (OBS) is a stable, secure, efficient, and easy-to-use cloud storage service that can store any amount and form of unstructured data. After OBS access permissions are granted, DSC is allowed to automatically identify and classify sensitive data, analyze abnormal user behaviors, and protect data stored in OBS.

RDS

Relational Database Service (RDS) is a cloud-based web service that is reliable, scalable, easy to manage, and immediately ready for use. After RDS access

permissions are granted, DSC is allowed to automatically identify and classify sensitive data and protect data stored in RDS instances.

DWS

Data Warehouse Service (DWS) is an online data processing database that uses the cloud infrastructure to provide scalable, fully-managed, and immediately read for use database services. After DWS access permissions are granted, DSC is allowed to automatically identify and classify sensitive data and protect data stored in DWS.

DDS

Document Database Service (DDS) is a database service compatible with the MongoDB protocol and is secure, highly available, reliable, scalable, and easy to use. It provides DB instance creation, scaling, redundancy, backup, restoration, monitoring, and alarm reporting functions with just a few clicks on the DDS console. After DDS access permissions are granted, DSC is allowed to automatically identify and classify sensitive data and protect data stored in DDS.

ECS

Elastic Cloud Server (ECS) is a cloud server that provides scalable, on-demand computing resources. After ECS access permissions are granted, DSC is allowed to automatically identify and classify sensitive data and protect data stored in self-built databases on ECSs.

Bare Metal Server (BMS)

Bare Metal Server (BMS) features both the scalability of VMs and high performance of physical servers. After BMS access permissions are granted, DSC is allowed to automatically identify and classify sensitive data and protect data stored in self-built databases on BMSs.

CSS

Cloud Search Service (CSS) is a fully managed, distributed search service. It is fully compatible with open-source Elasticsearch and provides functions including structured and unstructured data search, statistics, and reporting. The process of using CSS is similar to that of using a database. After CSS access permissions are granted, DSC is allowed to automatically identify and classify sensitive data and protect data stored in big data assets on CSS.

DLI

Data Lake Insight (DLI) is a Serverless big data compute and analysis service that is fully compatible with Apache Spark, Apache Flink, and openLooKeng (Apache Presto) ecosystems. With multi-model engines, enterprises can use SQL statements or programs to easily complete batch processing, stream processing, in-memory computing, and machine learning of heterogeneous data sources. After DLI access permissions are granted, DSC is allowed to automatically identify and classify sensitive data and protect data stored in big data assets on DLI.

MRS

MapReduce Service (MRS) provides enterprise-level big data clusters on the cloud. Tenants can fully control the clusters and run big data components such as Hadoop, Spark, HBase, Kafka, and Storm in the clusters. After MRS access permissions are granted, DSC is allowed to automatically identify and classify sensitive data and protect data stored in Hive on CSS.

ELB

DSC is bound to **Elastic Load Balance (ELB)** to query the encryption communications status.

SMN

Simple Message Notification (SMN) provides the message notification function. Once this function is enabled, DSC sends messages to you by email when sensitive data identification is complete or an abnormal event is detected.

Relationship with CTS

Cloud Trace Service (CTS) is used to record the operations you have performed using DSC for later querying, auditing, or backtracking.

Table 6-1 DSC operations supported by CTS

Operation	Resource Type	Trace Name
Assign or revoke permissions for DSC	dscGrant	grantOrRevokeTodsc
Add an OBS bucket	dscObsAsset	addBuckets
Delete an OBS bucket	dscObsAsset	deleteBucket
Add a database	dscDatabaseAsset	addDatabase
Modify a database	dscDatabaseAsset	updateDatabase
Delete a database	dscDatabaseAsset	deleteDatabase
Add a big data source	dscBigdataAsset	addBigdata
Modify a big data source	dscBigdataAsset	updateBigdata
Delete a big data source	dscBigdataAsset	deleteBigdata
Update the object name	dscAsset	updateAssetName

Operation	Resource Type	Trace Name
Download a template for batch import	dscBatchImportTemplate	downloadBatchImportTemplate
Add databases in batches	dscAsset	batchAddDatabase
Add assets in batches	dscAsset	batchAddAssets
Display abnormal events	dscExceptionEvent	listExceptionEventInfo
Obtain the abnormal event details	dscExceptionEvent	getExceptionEventDetail
Add alarm configurations	dscAlarmConfig	addAlarmConfig
Change alarm configurations	dscAlarmConfig	updateAlarmConfig
Download a report	dscReport	downloadReport
Delete a report	dscReport	deleteReport
Add a scan rule	dscRule	addRule
Modify a scan rule	dscRule	editRule
Delete a scan rule	dscRule	deleteRule
Add a scan rule group	dscRuleGroup	addRuleGroup
Modify a scan rule group	dscRuleGroup	editRuleGroup
Delete a scan rule group	dscRuleGroup	deleteRuleGroup
Add a scan task	dscScanTask	addScanJob
Modify a scan task	dscScanTask	updateScanJob
Delete a scan subtask	dscScanTask	deleteScanTask
Delete a scan task	dscScanTask	deleteScanJob
Start a scan task	dscScanTask	startJob
Stop a scan task	dscScanTask	stopJob

Operation	Resource Type	Trace Name
Start a scan subtask	dscScanTask	startTask
Stop a scan subtask	dscScanTask	stopTask
Enable/disable data masking for Elasticsearch	dscBigDataMaskSwitch	switchBigDataMaskStatus
Obtain the Elasticsearch field	dscBigDataMetaData	getESField
Add an Elasticsearch data masking template	dscBigDataMaskTem-plate	addBigDataTemplate
Modify an Elasticsearch data masking template	dscBigDataMaskTem-plate	editBigDataTemplate
Delete an Elasticsearch data masking template	dscBigDataMaskTem-plate	deleteBigDataTemplate
Query the Elasticsearch data masking template list	dscBigDataMaskTem-plate	showBigDataTemplates
Enable or disable an Elasticsearch data masking template	dscBigDataMaskTem-plate	operateBigDataTemplate
Switch the status of an Elasticsearch data masking template	dscBigDataMaskTem-plate	switchBigDataTemplate
Enable or disable data masking for databases	dscDBMaskSwitch	switchDBMaskStatus
Obtain the database fields	dscDBMetaData	getColumn
Add a database masking template	dscDBMaskTemplate	addDBTemplate
Modify a database masking template	dscDBMaskTemplate	editDBTemplate

Operation	Resource Type	Trace Name
Delete a database masking template	dscDBMaskTemplate	deleteDBTemplate
Query the database masking template list	dscDBMaskTemplate	showDBTemplates
Start or stop a database data masking template	dscDBMaskTemplate	operateDBTemplate
Switch the status of a database data masking template	dscDBMaskTemplate	switchDBTemplate
Add a masking algorithm	dscMaskAlgorithm	addMaskAlgorithm
Edit a masking algorithm	dscMaskAlgorithm	editMaskAlgorithm
Delete a masking algorithm	dscMaskAlgorithm	deleteMaskAlgorithm
Test a masking algorithm	dscMaskAlgorithm	testMaskAlgorithm
Obtain the mapping between fields and masking algorithms	dscMaskAlgorithm	getFieldAlgorithms
Add encryption algorithm configurations	dscEncryptMaskConfig	addEncryptConfig
Modify encryption algorithm configurations	dscEncryptMaskConfig	editEncryptConfig
Delete encryption algorithm configurations	dscEncryptMaskConfig	deleteEncryptConfig

VPC

Virtual Private Cloud (VPC) enables you to provision logically isolated, configurable, and manageable virtual networks for cloud servers, cloud containers, and cloud databases, improving cloud service security and simplifying network deployment.

IAM

Identity and Access Management (IAM) provides you with permission management for DSC. Only users who have Tenant Administrator permissions can perform operations such as authorizing, managing, and detect cloud assets using DSC. To obtain the permissions, contact the users who have the Security Administrator permissions.

7 Security

7.1 Shared Responsibilities

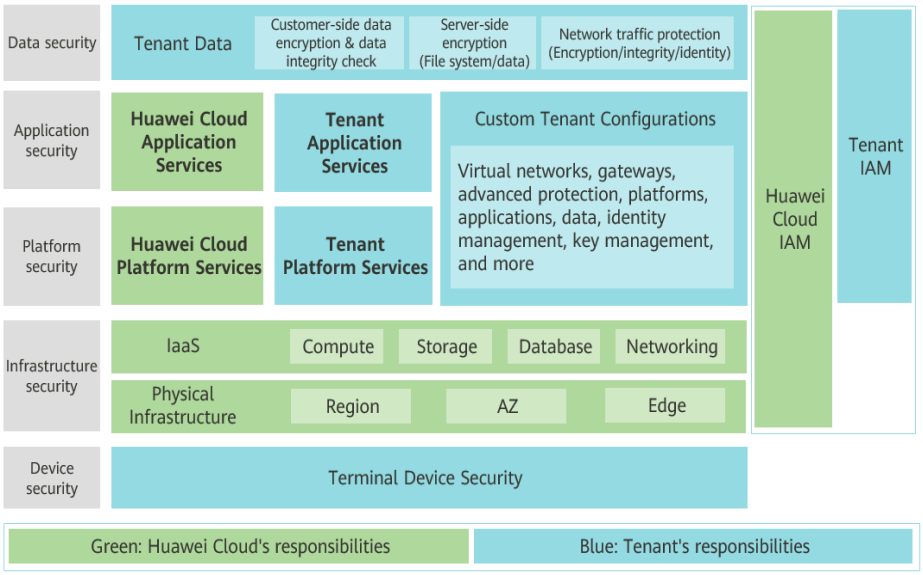
Huawei guarantees that its commitment to cyber security will never be outweighed by the consideration of commercial interests. To cope with emerging cloud security challenges and pervasive cloud security threats and attacks, Huawei Cloud builds a comprehensive cloud service security assurance system for different regions and industries based on Huawei's unique software and hardware advantages, laws, regulations, industry standards, and security ecosystem.

Figure 7-1 illustrates the responsibilities shared by Huawei Cloud and users.

- **Huawei Cloud**: Ensure the security of cloud services and provide secure clouds. Huawei Cloud's security responsibilities include ensuring the security of our IaaS, PaaS, and SaaS services, as well as the physical environments of the Huawei Cloud data centers where our IaaS, PaaS, and SaaS services operate. Huawei Cloud is responsible for not only the security functions and performance of our infrastructure, cloud services, and technologies, but also for the overall cloud O&M security and, in the broader sense, the security and compliance of our infrastructure and services.
- **Tenant**: Use the cloud securely. Tenants of Huawei Cloud are responsible for the secure and effective management of the tenant-customized configurations of cloud services including IaaS, PaaS, and SaaS. This includes but is not limited to virtual networks, the OS of virtual machine hosts and guests, virtual firewalls, API Gateway, advanced security services, all types of cloud services, tenant data, identity accounts, and key management.

Huawei Cloud Security White Paper elaborates on the ideas and measures for building Huawei Cloud security, including cloud security strategies, the shared responsibility model, compliance and privacy, security organizations and personnel, infrastructure security, tenant service and security, engineering security, O&M security, and ecosystem security.

Figure 7-1 Huawei Cloud shared security responsibility model



7.2 Identity Authentication and Access Control

7.2.1 Service Access Control

- Identity authentication

  You can access DSC through the DSC console, APIs, or SDK. Regardless of the access method, requests are sent through the REST APIs provided by the DSC.

  DSC APIs can be accessed only after requests are authenticated. DSC supports two authentication modes:

  - Token-based authentication: Requests are authenticated using tokens. By default, token authentication is required to access the DSC console.
  - AK/SK authentication: Requests are encrypted using AK/SK pairs. This method is recommended because it provides higher security than token-based authentication.

    For details about authentication and authorization, see **Authentication**.

- Access control

  DSC supports access control through IAM permissions.

Table 7-1 DSC access control methods

Access Control Method		Description	Reference
Permissions management	IAM permission	IAM permissions define which actions on your cloud resources are allowed and which actions are denied, to control access to your resources. After creating an IAM user, the administrator adds the user to one or more groups, and assign permissions policies or roles to these groups. The user will inherit permissions from the group to which it is added.	**IAM Service Overview** **Permission Management** **Permissions Management**

7.3 Data Protection Technologies

DSC takes different measures to keep data secure and reliable.

Table 7-2 DSC data protection methods and features

Method	Description	Reference
Transmission encryption (HTTPS)	DSC supports HTTP and HTTPS, but HTTPS is recommended to enhance the security of data transmission.	**Making an API Request**
Personal data protection	DSC controls access to the data and records logs for operations performed on the data.	**Personal Data Protection**
Privacy protection	• DSC encrypts sensitive data such as database account information of users before storing it, supports encryption key rotation. • During user data detection, data is not spilled to disks and is processed only in the memory. After the processing, the original data is deleted in a timely manner.	-
Data backup	The DSC supports user data backup.	-
Data destruction	If a user deletes service data or is deregistered, the DSC will physically delete all the service data and user data.	-

Method	Description	Reference
Data masking	DSC can mask sensitive data without affecting the original user data. The masking methods include static masking and dynamic masking.	**Configuring a Data Masking Rule**
Data watermarking	DSC can watermark user data in PDF, PPT, Word, and Excel formats, ensuring users' ownership on their data assets.	**Watermark Injection**

7.4 Audit Logs

- Key DSC Operations

  Cloud Trace Service (CTS) records operations on the cloud resources in your account. You can use the logs generated by CTS to perform security analysis, track resource changes, audit compliance, and locate faults.

  After you enable CTS and configure a tracker, CTS can record management and data traces of DSC for auditing.

  For details about how to enable and configure CTS, see **Getting Started**.

  For details about DSC operations that can be tracked by CTS, see **DSC Actions Supported by CTS**.
- Logs

  After you enable CTS, the system starts recording operations on DSC. Operation records generated during the last seven days can be viewed on the CTS console.

  For details, see **Viewing Audit Logs**.

7.5 Fault Recovery

- DSC fault recovery:
  - DSC provides multiple physically independent and isolated AZs that are connected through networks with low latency, high throughput, and high redundancy.
  - With AZs, DSC can automatically migrate faulty applications and databases between AZs without interrupting services.
  - Compared with traditional single or multiple data center infrastructures, AZs provide higher availability, fault tolerance, and scalability.

7.6 Update Management

DSC supports periodic update or patching of OSs, signature databases, certificates, vulnerabilities, and system configurations.

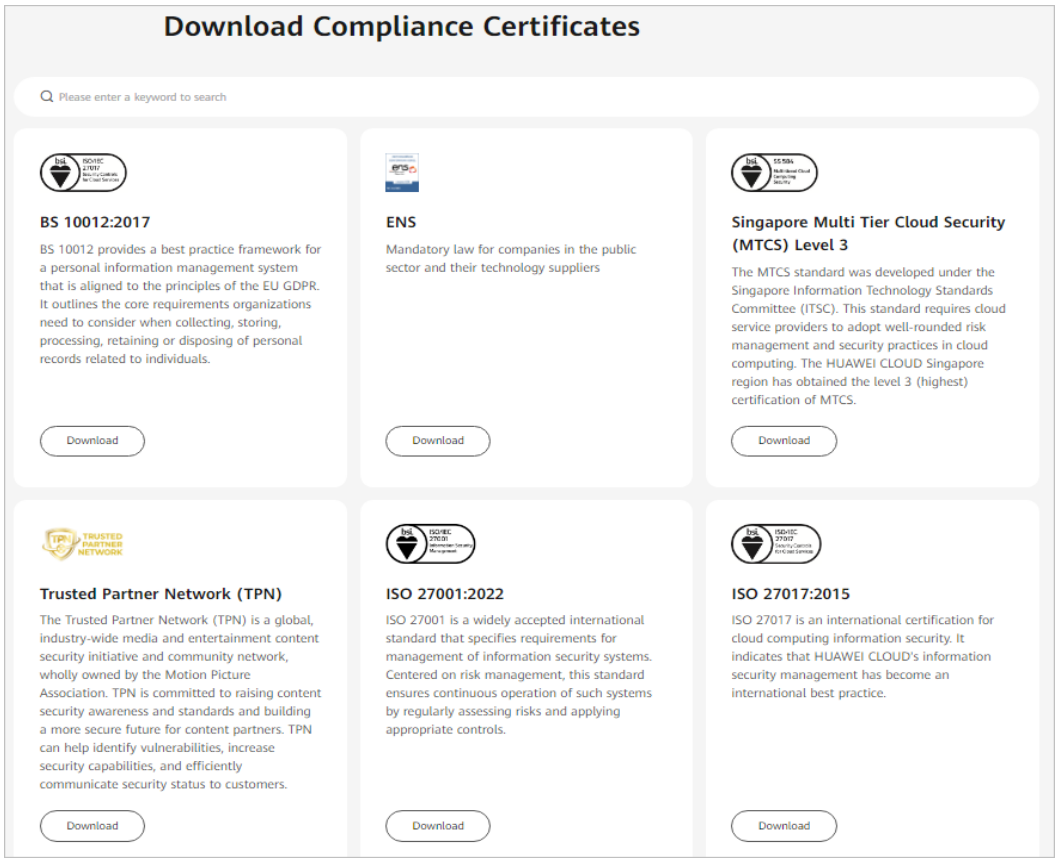
DSC interconnects with CCMS to manage service credentials, ensuring that plaintext credentials are not spilled to disks and are rotated periodically.

7.7 Certificates

Compliance Certificates

Huawei Cloud services and platforms have obtained various security and compliance certifications from authoritative organizations, such as International Organization for Standardization (ISO). You can **download** them from the console.

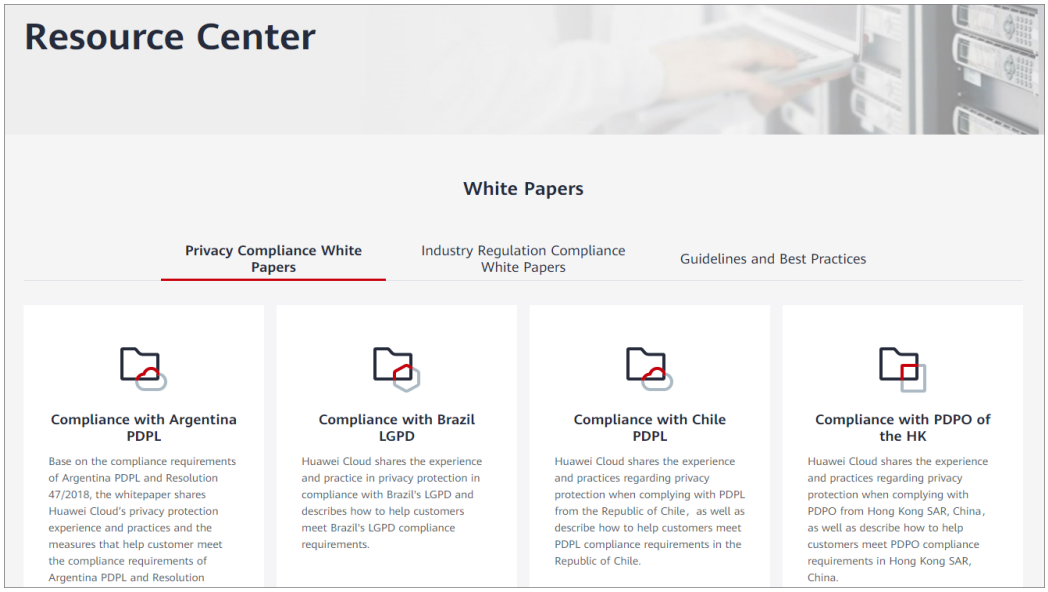
Figure 7-2 Downloading compliance certificates



Resource Center

Huawei Cloud also provides the following resources to help users meet compliance requirements. For details, see **Resource Center**.

Figure 7-3 Resource center



8 Limitations and Constraints

Supported Huawei Cloud Data Sources

- Relational Database Service (RDS)
- Object Storage Service (OBS)

  NOTE

  OBS supports only bucket lists and does not support parallel file systems.
- Data Warehouse Service (DWS)
- Document Database Service (DDS)
- MapReduce Service (MRS)
- Cloud Search Service (CSS)
- Data Lake Insight (DLI)
- GaussDB
- Self-built databases on Elastic Cloud Servers (ECSs). **Table 8-1** lists the supported self-built database versions.
- Databases on Bare Metal Servers (BMSs)
- Log Tank Service (LTS)

Supported Datasource Versions

Table 8-1 Supported datasource versions

Data Type	Data Source Type	Version
Database	MySQL	5.6, 5.7, 5.8, and 8.0
	SQL Server	2017_SE, 2017_EE, and 2017_WEB
		2016_SE, 2016_EE, and 2016_WEB
		2014_SE and 2014_EE
		2012_SE, 2012_EE, and 2012_WEB

Data Type	Data Source Type	Version
		2008_R2_EE and 2008_R2_WEB
	PostgreSQL	15, 14, 13, 12, 11, 10, 9.6, 9.5, 9.4, 9.1, and 1.0
	TDSQL	10.3.X
	Oracle	11, 12
	DDS	4.2, 4.0, and 3.4
	KingBase	V8
	GaussDB	1.3, 1.4, and 2.7
	DMDBMS	7 and 8
	DWS	8.1.X
Big Data	ElasticSearch	5.x, 6.x, and 7.x
	DLI	1.0
	Hive	1.0
	MRS-Hive	3.x
	Hbase	1.0
OBS	OBS	V3

Data Sources Supported by Sensitive Data Identification

Table 8-2 Data sources supported by sensitive data identification

Asset Type	Data Source Type
OBS	OBS bucket
Databases	RDS, DWS, DDS, GaussDB, and self-built databases (MySQL, TDSQL, KingBase, DMDBMS, PostgreSQL, SQLServer, and Oracle)
Big data	Elasticsearch, DLI, Hive, HBase
Logs	LTS

Data Sources Supported by Data Masking

Table 8-3 Data sources supported by data masking

Masking Type	Asset Type	Data Source
Data masking	Database	SQLServer, MySQL, TDSQL, PostgreSQL, KingBase, DMDBMS, GaussDB, Oracle, and DWS
Elasticsearch masking	Big data	Elasticsearch
Hive masking		Hive
HBase masking		HBase
DLI masking		DLI
MRS masking	MRS	MRS_HIVE
OBS masking	OBS	OBS bucket file

Data Sources Supported by Data Watermarking

Table 8-4 Data source types supported by data watermarking

Watermarking Target	Watermark Type	Data Source
Databases	Lossy - column watermark	DWS and MRS_HIVE databases
	Lossless - pseudocolumn/pseudorow watermarking	DWS, PostgreSQL, and MySQL databases
Documents	-	OBS buckets and local files
Images	-	OBS buckets and local files

9 Personal Data Protection Mechanism

To ensure that your personal data, such as the username, password, and mobile phone number, will not be leaked or obtained by unauthorized or unauthenticated entities or people, DSC controls access to the data and records logs for operations performed on the data.

Personal Data

Table 9-1 lists the personal data generated or collected by DSC.

Table 9-1 Personal data

Type	Source	Modifiable	Mandatory
Tenant ID	• Tenant ID in the token used for authentication when an operation is performed on the console • Tenant ID in the token used for authentication when an API is called	No	Yes
Password	Entered by the tenant on the console	Yes	Yes. When scanning, desensitizing, and injecting watermarks to database data, DSC needs to use the database password to connect to the database and obtain data.

Storage Mode

- Tenant ID is not sensitive data and can be stored in plaintext.
- Database password: encrypted for storage.

Access Permission Control

Users can view only logs related to their own services.

Log Records

DSC records logs for all operations, such as modifying, querying, and deleting, performed on personal data. The logs are uploaded to Cloud Trace Service (CTS). You can view only the logs generated for operations you performed.

10 Permissions Management

If you want to assign different access permissions to employees in an enterprise for the DSC resources purchased on HUAWEI CLOUD, you can use Identity and Access Management (IAM) to perform refined permission management. IAM provides identity authentication, permissions management, and access control, helping you efficiently manage access to your DSC resources.

With IAM, you can create IAM users under your account for your employees, and assign permissions to these IAM users to control their access to DSC resources. For example, if you have software developers and you want to assign them the permission to access DSC but not to delete DSC or its resources, you can create an IAM policy to assign the developers the permission to access DSC but prevent them from deleting DSC data.

If your HUAWEI CLOUD account does not require individual IAM users for permissions management, skip this section.

IAM is free. You pay only for the resources in your account. For more information about IAM, see **What Is IAM?**

DSC Permissions

By default, new IAM users do not have any permissions. You need to add a user to one or more groups, and attach permission policies or roles to these groups. Users inherit permissions from their groups and can perform specified operations on cloud services based on the permissions.

DSC is a project-level service deployed and accessed in specific physical regions. To assign permissions to a user group, specify the scope as region-specific projects and select projects for the permissions to take effect. If **All projects** is selected, the permissions will take effect for the user group in all region-specific projects. To access DSC, the users need to switch to a region where they have been authorized to use cloud services.

You can grant users permissions by using roles and policies.

- Roles: A coarse-grained authorization mechanism provided by IAM to define permissions based on users' job responsibilities. This mechanism provides a limited number of service-level roles for authorization. You need to also assign other dependent roles for the permission control to take effect. Roles are not an ideal choice for fine-grained authorization and secure access control.

- Policies: A fine-grained authorization mechanism that defines permissions required to perform operations on specific cloud resources under certain conditions. This mechanism allows for more flexible policy-based authorization, meeting requirements for secure access control. For example, you can grant DSC users the permissions to manage only a certain type of resources.

Table 10-1 describes the system-defined policies of DSC.

Table 10-1 DSC system permissions

Policy	Description	Type	Dependency
DSC DashboardReadOnlyAccess	Read-only permissions for the overview page of DSC	System-defined policy	None
DSC FullAccess	All permissions for DSC	System-defined policy	To purchase a yearly/monthly RDS DB instance, you need to configure the following actions: bss:order:update bss:order:pay
DSC ReadOnlyAccess	Read-only permissions for Data Security Center	System-defined policy	None

NOTICE

Only users with the **Security Administrator** permission can perform **Allowing or Disallowing Access to Cloud Assets**.

Helpful Links

- **IAM Service Overview**
- **Creating a User and Assigning DSC Permissions**

11 Concepts

Self-built Bucket

Self-built buckets are those created by the current user, including public buckets and private buckets.

Public Bucket

If you set **Bucket Policy** to **Public Read** or **Public Write** when creating an OBS bucket, the bucket is a public bucket. Any user can read, write, or delete objects in the bucket.

Private Bucket

If you set **Bucket Policy** to **Private** when creating an OBS bucket, the bucket is a private bucket and only the current user can access it.

Other Buckets

Other buckets refer to the buckets that are created by other users and assigned the **Public** policy or the private buckets on which the current account has permissions.

Database Expansion Package

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.

OBS Expansion Package

One OBS expansion package offers 1 TB (1024 GB) of OBS storage.

Pseudo-line

Insert pseudo-line data in the original data format into the database. For details, see **Injecting Watermarks to Databases**.

Pseudo-column

Insert pseudo-column data generated based on the user-entered column information into the database. For details, see **Injecting Watermarks to Databases**.

