Cloud Operations Center

Service Overview

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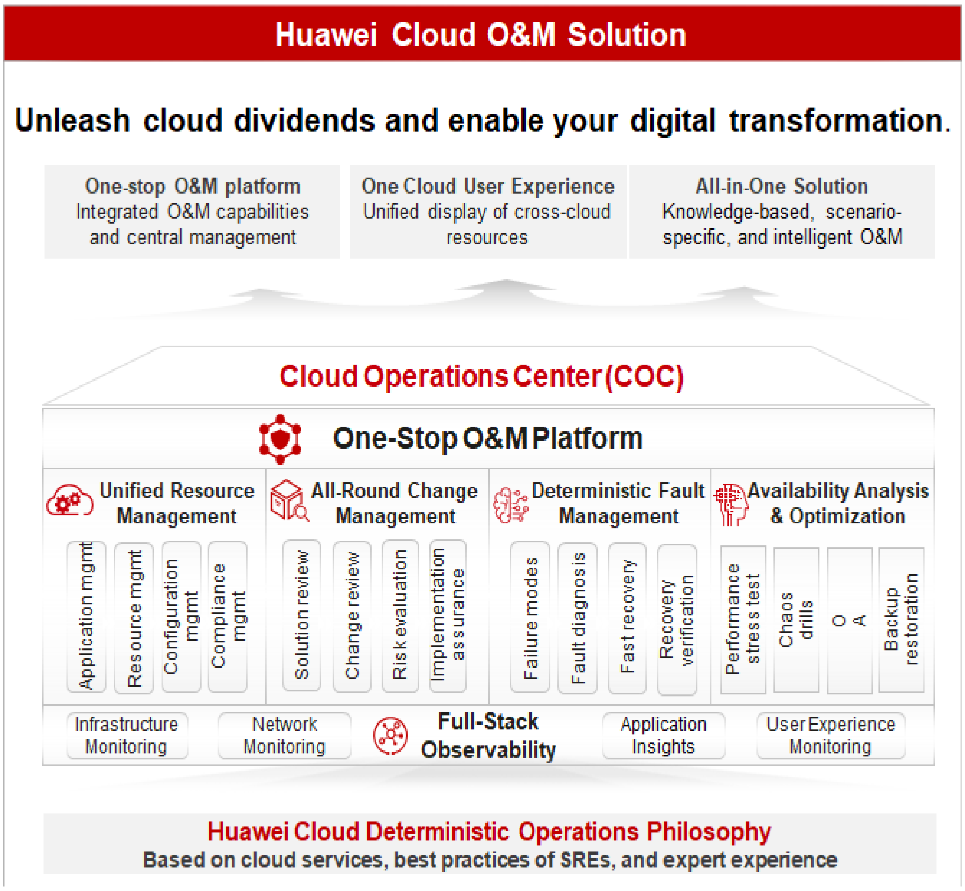
Contents

1 What Is COC?

Cloud Operations Center (COC) is a secure and efficient O&M platform, offering one-stop, AI-powered solutions for all your centralized O&M needs. It encompasses Huawei Cloud deterministic operations scenarios and features essential functionalities such as fault management, batch O&M, and chaos drills, to improve cloud O&M efficiency while ensuring security compliance.

Figure 1-1 COC service overview


Huawei Cloud O&M Solution
Unleash cloud dividends and enable your digital transformation.
One-stop O&M platform
Integrated O&M capabilities and central management
One Cloud User Experience
Unified display of cross-cloud resources
All-in-One Solution
Knowledge-based, scenario-specific, and intelligent O&M
Cloud Operations Center (COC)
One-Stop O&M Platform
Unified Resource Management
Application mgmt
Resource mgmt
Configuration mgmt
Compliance mgmt
All-Round Change Management
Solution review
Change review
Risk evaluation
Implementation assurance
Deterministic Fault Management
Failure modes
Fault diagnosis
Fast recovery
Recovery verification
Availability Analysis & Optimization
Performance stress test
Chaos drills
O A
Backup restoration
Infrastructure Monitoring
Network Monitoring
Full-Stack Observability
Application Insights
User Experience Monitoring
Huawei Cloud Deterministic Operations Philosophy
Based on cloud services, best practices of SREs, and expert experience

Unified Resource Management

- Application management: provides the capability of modeling the association between applications and resources to fulfill your requirements in centralized cloud resource management and cost reduction management.
- Resource management: synchronizes and manages the resource instances used on various cloud platforms to build a resource O&M capability foundation.
- Configuration management: manages applications and resources, and centrally monitors their parameter configurations throughout their lifecycles.
- Compliance management: provides batch patch scanning and repair capabilities for resource O&M, ensuring both security compliance and efficiency.

Comprehensive Change Management

- Solution review: enables Standard Operating Procedure (SOP) for change solutions, clarifying and electronizing change solutions and archiving them after review. Rules and processes can be decoupled to ensure that a change execution process is correct and that the change solution can be accumulated.
- Change review: reviews change tickets according to the preset review process to ensure the reliability, efficiency, and process compliance of change solutions.
- Risk assessment: manages changes based on scenario rules, process rules, and business rules to identify and prevent change risks in advance. The change calendar is used to identify change conflicts and reduce change risks caused by change dependencies between services.
- Assurance implementation: presets changes solutions, standardizes change steps, enables change operation observation, and ensures timely handling of change exceptions, delivering controllable, visible, and manageable change processes.

Deterministic Fault Management

- Unified incident center: provides an E2E and standard incident handling mechanism, covering incident discovery, incident handling, recovery verification, and continuous improvement.
- WarRoom and fault backtracking capabilities: triggers WarRoom requests intelligently for live-network incidents, shortening troubleshooting time. In addition, you can observe the troubleshooting progress in real time from the command center. Fault backtracking facilitates issue summary and experience accumulation, preventing issues from recurring and shortening the MTTR.
- Contingency plans: enables you to develop contingency plans for known faults and handle deterministic issues using the contingency plan automation mechanism.
- Failure modes: leverages professional risk analysis methods and expert knowledge bases to accumulate a failure mode base, helping you analyze potential risks of cloud applications and pass on O&M experience.

Resilience Center Optimization

- Full-lifecycle risk management: encompasses risk management in both application deployment and running scenarios throughout the lifecycles of applications and resources, serving you based on years of dynamic risk management experience accumulated on Huawei Cloud.
- Proactive O&M: promotes the quality and resilience of your key services through proactive O&M methods, including performance pressure tests, emergency drills/chaotic engineering, and resilience evaluation.
- Rich fault drill tools: uses over 50 built-in drill attack tools based on Huawei Cloud best practices, enabling you to simulate complex and diversified service exception scenarios and develop countermeasures.
- Application HA improvement: The Production Readiness Review (PRR) feature leverages the SREs' best practices on cloud application rollout review and provides online review e-flows and review items, enhancing application HA.

Access Methods

You can access COC through the web-based management console or HTTPS-based application programming interfaces (APIs).

- Accessing COC Through APIs

  Use this method to access COC if you need to integrate COC into a third-party system for secondary development. For detailed operations, see the **Cloud Operations Center API Reference**.
- Accessing COC Through the Management Console

  Use the management console if you do not need to integrate COC with a third-party system.

  Ensure that you have registered on Huawei Cloud. For details about how to register an account, see **Registering a HUAWEI ID and Enabling HUAWEI CLOUD Services**. Then, log in to the management console and click **Cloud Operations Center**.

2 Benefits

One-Stop O&M Platform

- Centralized management and O&M
- Synergized ITSM, ITOM, and expert services
- Seamless operations without platform switching

All-in-One Solution

- Atomic O&M capabilities
- Tailored solutions based on the accumulated experience of Huawei Cloud O&M specialists
- Simplified O&M based on best practices derived from secure production, CloudOpsBrain, and fault management

"One Cloud" User Experience

- Full-spectrum resource management, covering Huawei Cloud and customer IDC scenarios
- Multi-perspective data displays for data value mining and informed decision-making
- Cloud-based O&M capabilities extend to customer IDCs and multi-cloud scenarios for high O&M efficiency

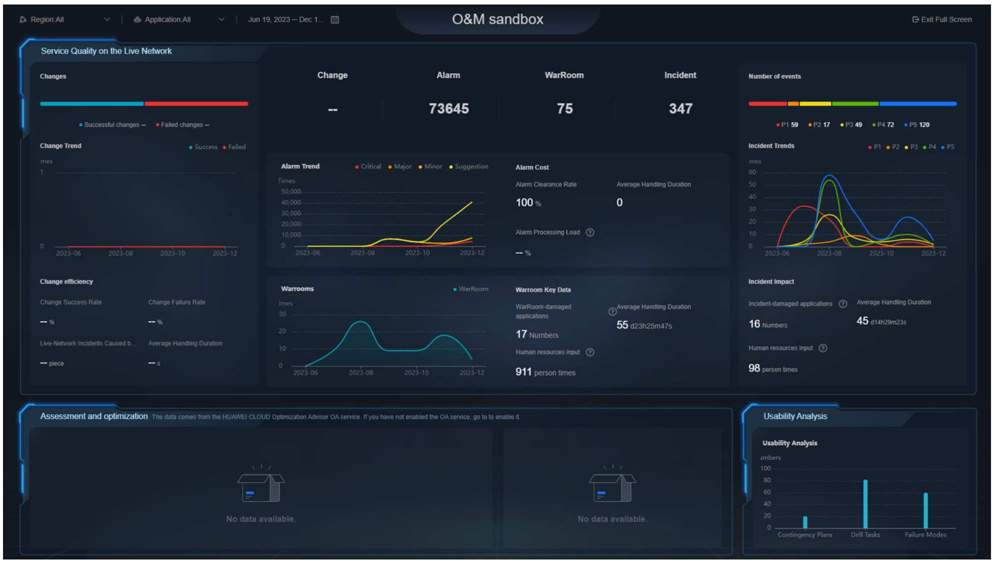
3 Application Scenarios

O&M Situation Awareness BI Dashboard

The dedicated O&M BI dashboard caters to various O&M roles, aiding in optimization, insight generation, and decision-making.

Rich metrics: COC provides 30+ preset O&M metrics, delivering insights into your cloud resources across seven perspective-based dashboards and a comprehensive enterprise-level O&M sandbox.

Figure 3-1 O&M sandbox



Assessment and optimization The data comes from the HUAWEI CLOUD Optimization Advisor OA service. If you have not enabled the OA service, go to to enable it.

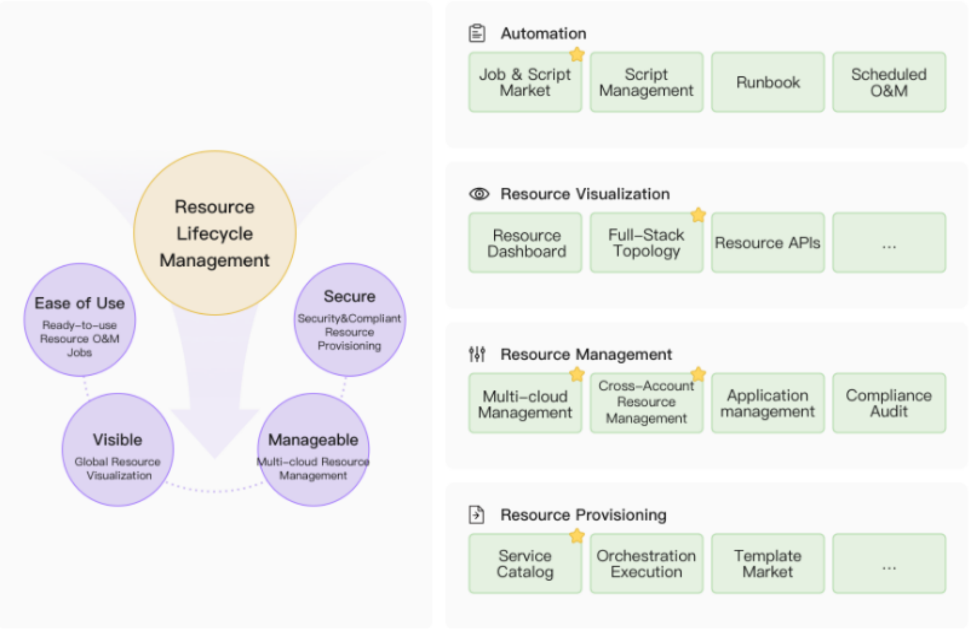
Full-Lifecycle Resource Management

Full-lifecycle resource management is available, and includes actions such as resource defining, requesting, provisioning, O&M, changing, configuration, renewal, and recycling; building a unified resource management center.

- Full-lifecycle management: eliminates breakpoints across the entire user resource management journey, ensuring smooth user resource management and efficient O&M.

- Resource management center: enables visualized management of your resources from a global perspective, and supports multi-cloud and cross-account centralized O&M.

Figure 3-2 Full-lifecycle resource management

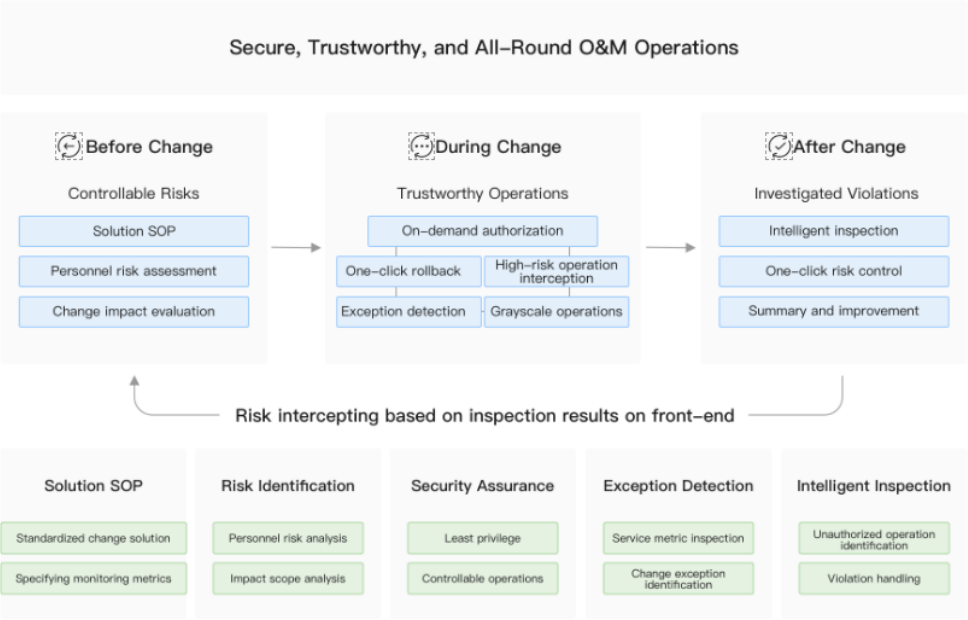


Change Risk Control and Operations Trustworthiness

Management and control models that integrate Huawei SRE best practices in secure production provide you with trustworthy, stable, and reliable O&M capabilities.

- All-round operations trustworthiness ensures operational security before, during, and after changes, is supported by personnel risk assessment capabilities, and offers high-risk command alerts, and automated inspection.
- AI-powered risk assessment: The intelligent interception algorithm for high-risk commands is used to mitigate operation risks.

Figure 3-3 Change risk control and operations trustworthiness

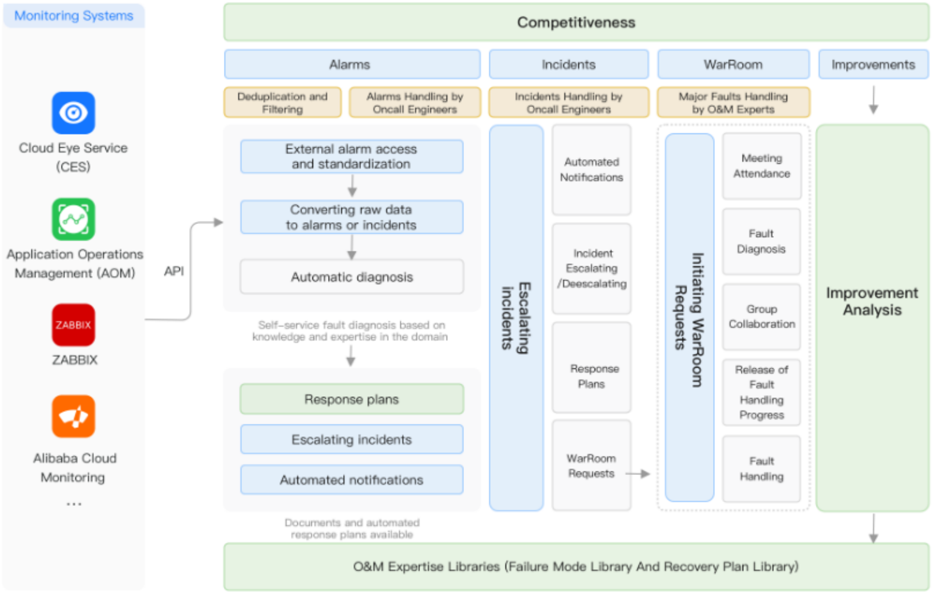


Standardized Fault Management

The standardized fault management process and WarRoom facilitate efficient fault synergy and rapid fault recovery.

- Standard process: provides a standardized troubleshooting process on Huawei Cloud. Bolstered by contingency plans and the WarRoom-based synergy of O&M engineers, R&D teams, and other personnel, this standardized process helps you handle faults encountered with ease.
- O&M knowledge base: enables the swift handling of faults. A rich repository of O&M knowledge, derived from handling historical faults and the accumulation of experience in handling unknown faults, increases efficiency during fault handling process.

Figure 3-4 Standardized fault management

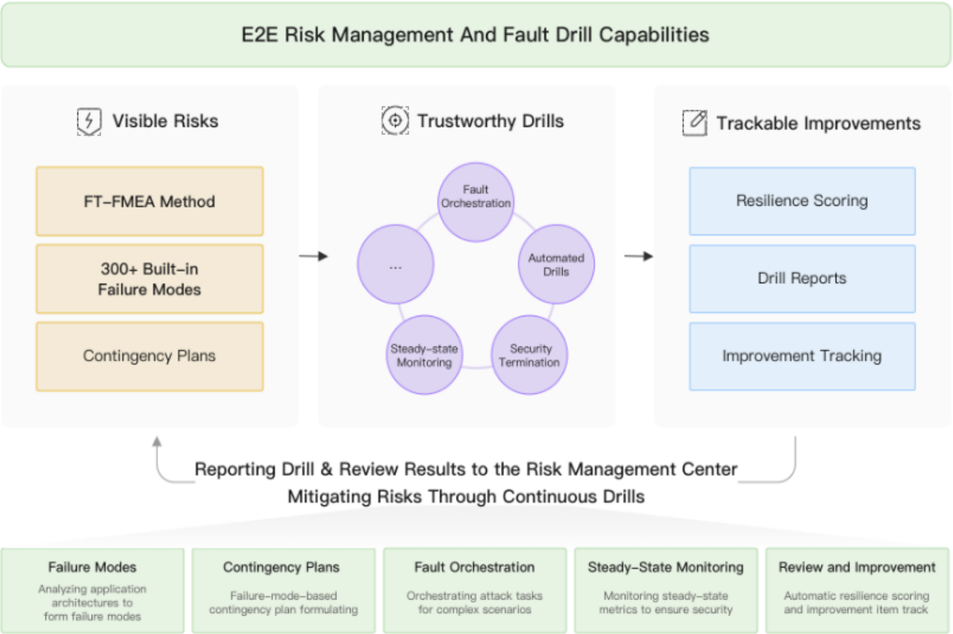

Monitoring Systems
Cloud Eye Service (CES)
Application Operations Management (AOM)
ZABBIX
ZABBIX
Alibaba Cloud Monitoring
...
API
Competitiveness
Alarms
Incidents
WarRoom
Improvements
Deduplication and Filtering
Alarms Handling by Oncall Engineers
Incidents Handling by Oncall Engineers
Major Faults Handling by O&M Experts
External alarm access and standardization
Converting raw data to alarms or incidents
Automatic diagnosis
Self-service fault diagnosis based on knowledge and expertise in the domain
Response plans
Escalating incidents
Automated notifications
Documents and automated response plans available
Escalating incidents
Automated Notifications
Incident Escalating /Deescalating
Response Plans
WarRoom Requests
Initiating WarRoom Requests
Meeting Attendance
Fault Diagnosis
Group Collaboration
Release of Fault Handling Progress
Fault Handling
Improvement Analysis
O&M Expertise Libraries (Failure Mode Library And Recovery Plan Library)

Intelligent Chaos Drills

Full-stack chaos engineering solutions enable you to quickly evaluate the potential resilience risks of applications and continuously monitor application architectures.

- E2E chaos engineering solutions: provide E2E chaos drill capabilities based on your service scenarios from four dimensions: risk analysis, contingency plans, drill execution, and drill review.
- Failure mode library: introduces the methodology of analyzing fault scenarios from the perspective of fault tolerance, and leverages Huawei Cloud SREs' years of accumulated experience in fault handling through the failure mode library.

Figure 3-5 Intelligent chaos drills


E2E Risk Management And Fault Drill Capabilities
Visible Risks
FT–FMEA Method
300+ Built–in Failure Modes
Contingency Plans
Trustworthy Drills
Fault Orchestration
Automated Drills
Security Termination
Steady–state Monitoring
...
Trackable Improvements
Resilience Scoring
Drill Reports
Improvement Tracking
Reporting Drill & Review Results to the Risk Management Center
Mitigating Risks Through Continuous Drills
Failure Modes
Analyzing application architectures to form failure modes
Contingency Plans
Failure–mode–based contingency plan formulating
Fault Orchestration
Orchestrating attack tasks for complex scenarios
Steady–State Monitoring
Monitoring steady–state metrics to ensure security
Review and Improvement
Automatic resilience scoring and improvement item track

4 Features

Table 4-1 describes the commonly used features of COC.

Table 4-1 COC features

Feature	Description	Region Availability
Overview	The following feature modules are available on the COC overview page: resource overview, resource monitoring, application monitoring, security overview, quick entries, and more. You can view and perform operations on work items with ease on the overview page, enjoying simplified and highly efficient O&M.	Global
Resource management	COC provides a resource management view that is bolstered by management capabilities for various resources. By using this feature, you can create resource topologies, aggregate resources by resource type, query resources from the resource list by resource tag, and install the UniAgent components.	Global
Application management	COC provides an application-centric resource management view that is bolstered by the capability of modeling the association between applications and resources. By using this feature, you can manage your resources by application, region, resource group, or resource model, query resources in a resource list by tag, and install the UniAgent components.	Global
Patch management	You can manage patches on ECS instances, scan OS compliance, and repair OSs whose patches are non-compliant.	Global
Batch operations on ECSs	You can batch manage ECSs, including batch starting, stopping, and restarting ECSs, and switching and reinstalling OSs for ECSs.	Global

Feature	Description	Region Availability
Batch operations on RDS instances	You can batch manage RDS DB instances, including starting, stopping, and restarting RDS DB instances in batches.	Global
Batch operations on FlexusL instances	You can manage FlexusL instances, including starting, stopping, and restarting instances, and reinstalling OSs in batches.	Global
Script management	You can create, modify, and delete scripts, and execute your own and public scripts on VMs (Script management is only allowed on ECSs currently.)	Global
Job management	You can create, modify, and delete jobs, and execute jobs on VMs (Job management is only allowed on ECSs currently.)	Global
Scheduled O&M	You can either select job or script execution tasks from existing tasks or create such tasks. There are two task execution methods available: one-time execution and periodic execution. Periodic task execution includes execution using Cron expressions and simple periodic execution.	Global
Parameter center	You can manage parameters throughout the whole service lifecycle in regions to continuously monitor parameter correctness and consistency. You can quickly reference O&M scenarios such as job orchestration.	Global
Incident center	You can check all incidents on the incident dashboard in the COC incident center. You can also manually handle incidents, associate incidents with jobs, escalate or deescalate incidents, forward incidents to their owners, check handling records of incidents, and initiate WarRoom requests with several clicks.	Global
Alarm center	You can clean original alarms based on alarm forwarding rules and then create alarms. Alarms can be allocated to O&M engineer shifts or individuals so that alarm owners are clear. You can manually clear alarms, convert alarms to incident tickets, or use the automated alarm handling feature.	Global
Warrooms	WarRoom requests can be initiated manually or automatically, and O&M groups for handling WarRoom requests can be quickly created based on the WarRoom initiating rules. Backed by the following features or platforms, this feature delivers powerful O&M capabilities: WarRoom management platform, key monitoring data dashboard, key change operations, and the fault recovery operation platform. In addition, linkage between internal and external WarRoom requests is enabled to ensure quick issue resolving.	Global

Feature	Description	Region Availability
Forwarding rules	Forwarding rules suppress, reduce noise, deduplicate, and distribute routes for all received original alarms. Vertical suppression and horizontal convergence of multiple monitoring sources are supported for multi-dimensional noise reduction. When configuring an incident forwarding rule, you can specify default objects for assigning incidents and configure notification policy for precise accurate notification.	Global
Data source integration	You can quickly integrate with existing or external monitoring systems with ease for centralized alarm management. Each monitoring system employs distinct integration access keys for seamless interconnectivity.	Global
Change management	The change center provides a unified platform for engineers to manage change tasks. With the change center, engineers can submit tickets to manage change requests, review, and execution.	Global
Chaos drills	You can configure fault drill templates and attack templates and perform fault drills on physical machines, VMs, or Cloud Container Engine (CCE) containers using the templates. You can also manage failure modes.	Global
To-do center	On the to-do task dashboard, you can view the handling status of to-do tasks, historical to-do task statistics, and overview of all to-do tasks. You can also manually create to-do tasks.	Global
Execution records	On the execution record page, you can query service ticket records of operations on patches, scripts, jobs, and ECSs, and view service ticket details.	Global
O&M engineer management	You can centrally manage O&M engineers on COC using this feature. You can manage users of the current tenant on the **O&M Engineer Management** page. The basic user data on the **O&M Engineer Management** page is synchronized from Identity and Access Management (IAM) and is used by multiple basic functional modules in creating to-do tasks, performing scheduled O&M, managing notifications, managing incidents, and more.	Global
Schedule management	You can manage O&M engineers centrally, from multiple dimensions, in different forms, or based on your other custom requirements. You can also create shift scheduling scenarios and roles and add members to the scenarios and roles as required.	Global

Feature	Description	Region Availability
Notification management	The notification management module allows you to create notification subscription instances that contain notification scenarios and matching rules. When a change ticket is generated, the notification module first matches the ticket with notification rules and scenarios, then parses the O&M engineers to be notified, the notification content, and notification method, and finally sends the notification messages.	Global
Mobile application management	You can bind or modify mobile apps. (Currently, only WeCom is supported.)	Global
SLA management	Service Level Agreement (SLA) provides ticket timeliness management for you. When a ticket triggers a rule, the SLA notifies you to follow up and handle the ticket in a timely manner, and it records details about the ticket SLA triggering. In SLA management, you can use public SLA rules or user-defined rules, and can configure notifications for SLA violation and warning.	Global
Account management	Allows you to manage and host ECS accounts and periodically change passwords of ECS accounts.	Global

5 Permissions Management

If you need to assign different permissions to employees in your enterprise to access your resources purchased on Huawei Cloud, Identity and Access Management (IAM) is a good choice for fine-grained permissions management. IAM provides identity authentication, permissions management, and access control, helping you to securely access your Huawei Cloud resources. If your HUAWEI ID does not require IAM for permissions management, you can skip this section.

IAM can be used on Huawei Cloud for free. You pay only for the resources purchased using your account.

With IAM, you can control access to specific Huawei Cloud resources. For example, you can create IAM users for software developers and grant them the permissions required for using COC resources but not the permissions needed for performing any other operations.

You can grant permissions using roles and policies.

- Roles: A coarse-grained authorization method where you assign permissions based on user responsibilities. Only a limited number of service-level roles are available for authorization. Cloud Services depend on each other. When you grant permissions using roles, you also need to attach dependent roles. However, roles are not an ideal choice for fine-grained authorization and secure access control.
- Policies: A fine-grained authorization strategy that defines permissions required to perform operations on specific cloud resources under certain conditions. This type of authorization is more flexible and is ideal for least secure access control. For example, you can grant users only permissions to manage ECSs of a certain type.

IAM supports both role-based access control (RBAC) and attribute-based access control (ABAC).

RBAC is a role-based authorization model. By default, a new principal does not have any permissions. You need to assign a system-defined role, system-defined policy, or custom policy to the principal and select the authorization scope so that the principal can have the specified permissions.

The other is a new model based on ABAC, which is also called policy authorization. An administrator can tailor access control policies based on service requirements and then attach or grant the policies to a principal so that the principal can have the specified permissions. The principal can then perform operations on specified cloud services.

The following table describes the differences between the two authorization models.

Table 5-1 Differences between RBAC and ABAC

Authorization Model	Core Relationship	Permission	Authorization Method	Application Scenario
RBAC	Roles	• System-defined roles • System-defined policies • Custom policies	Granting roles or policies to principals	It offers a simple approach to access management but is not always flexible enough. For more granular permissions control, administrators need to constantly add more roles, which may lead to role explosion. This model can work well for small- and medium-sized enterprises where there is not too much work involved in maintaining roles and permissions.
ABAC	Policies	• System-defined policies • Custom policies	• Granting policies to principals • Attaching policies to principals	It gives you more granular, more flexible control of your resources. There is no need to modify existing rules to accommodate new users. All administrators need to do is assign relevant attributes to the new users. However, the construction of a policy-based authorization model is more complex and has higher requirements on the professional capabilities. Therefore, this model is more suitable for medium- and large-sized enterprises.

COC supports only RBAC. For details about supported system-defined permissions, see **System-defined Permissions in RBAC**.

For more information about IAM, see **What Is IAM?**

System-defined Permissions in RBAC

COC supports RBAC. By default, new IAM users do not have any permissions assigned. You need to add them to one or more groups and attach policies or roles to these groups. The users then inherit permissions from the groups and can perform specified operations on cloud services based on the permissions they have been assigned.

COC is a global service deployed and accessed without specifying any physical region. When you set the authorization scope to **Global services**, users have permission to access COC resources in all regions.

Table 5-2 lists all the system-defined permissions for COC. System-defined policies in RBAC and ABAC are not interoperable.

Table 5-2 COC system-defined permissions

System-defined Role/ Policy Name	Description	Type	Dependency
COC ReadOnlyAccess	Read-only permissions of COC	System-defined policies	None
COC FullAccess	Administrator permissions of COC	System-defined policies	None

Table 5-3 lists the common operations supported by system-defined permissions for COC.

Table 5-3 Common operations supported by each system-defined policy

Operation	COC ReadOnlyAccess	COC FullAccess
Viewing to-do tasks	√	√
Creating and handling to-do tasks	x	√
Viewing the resource list	√	√
Managing resources	x	√
Viewing the script list	√	√
Adding, deleting, modifying, and executing scripts	x	√

Operation	COC ReadOnlyAccess	COC FullAccess
Viewing the job list	√	√
Adding, deleting, modifying, and executing jobs	x	√
Performing operations on ECSs	x	√
Viewing scheduled O&M tasks	√	√
Adding, deleting, modifying, and executing scheduled O&M tasks	x	√
Viewing the parameter center	√	√
Adding, deleting, and modifying parameters	x	√
Viewing incident tickets	√	√
Creating and handling incidents	x	√
Viewing alarm records	√	√
Handling alarms	x	√
View chaos drill plans	√	√
Executing drill tasks	x	√
Viewing shift schedules	√	√
Creating a shift schedule	x	√
Viewing account baselines	√	√
Creating account baselines	x	√

System-defined Permissions in ABAC

COC supports ABAC. Table 5-4 lists all the system-defined policies for COC with ABAC System-defined policies in RBAC and ABAC are not interoperable.

Table 5-4 System-defined policies for COC

Policy	Description	Policy Type
COCReadOnlyPolicy	Read-only permissions of COC	System-defined policies
COCFullAccessPolicy	Administrator permissions of COC	System-defined policies

Table 5-5 lists the common operations supported by system-defined identity policies for COC.

Table 5-5 Common operations supported by each system-defined policy

Operation	COCReadOnlyPolicy	COCFullAccessPolicy
Viewing to-do tasks	√	√
Creating and handling to-do tasks	x	√
Viewing the resource list	√	√
Managing resources	x	√
Viewing the script list	√	√
Adding, deleting, modifying, and executing scripts	x	√
Viewing the job list	√	√
Adding, deleting, modifying, and executing jobs	x	√
Performing operations on ECSs	x	√
Viewing scheduled O&M tasks	√	√

Operation	COCReadOnlyPolicy	COCFullAccessPolicy
Adding, deleting, modifying, and executing scheduled O&M jobs	x	√
Viewing the parameter center	√	√
Adding, deleting, and modifying parameters	x	√
Viewing incident tickets	√	√
Creating and handling incidents	x	√
Viewing alarm records	√	√
Handling alarms	x	√
Viewing chaos drill plans	√	√
Executing drill tasks	x	√
Viewing shift schedules	√	√
Creating a shift schedule	x	√
Viewing account baselines	√	√
Creating account baselines	x	√

Related Links

- **IAM Service Overview**

6 Constraints and Limitations

NOTE

Cloud Operations Center (COC) is universally applicable. However, it is not supported in some special areas (such as dedicated domains and HCS Online). If you have any requirements, contact COC service personnel.

When using COC, pay attention to the restrictions listed in **Table 6-1**.

Table 6-1 Restrictions on COC

Functional Module	Object	Restriction
Public	Managing patches, scripts, jobs, or ECSs	A maximum of 200 instances can be selected for a single operation task.
	Managing patches, scripts, jobs, or ECSs	The timeout interval for executing a service ticket must be less than or equal to 86,400 seconds (24 hours).

Functional Module	Object	Restriction
Resource management	Installing OSs supported by UniAgent	Currently, the following Linux OS versions are supported: ● EulerOS 2.2 (64-bit) for Tenant 20210227 ● EulerOS 2.3 (64-bit) ● EulerOS 2.5 (64-bit) for Tenant 20210229 ● CentOS 7.2 (64-bit) ● CentOS 7.3 (64-bit) ● CentOS 7.4 (64-bit) ● CentOS 7.5 (64-bit) ● CentOS 7.6 (64-bit) for Tenant 20200925 (for resource image creation) ● CentOS 7.6 (64-bit) for Tenant 20210227 ● CentOS 7.6 (64-bit) for Tenant 20210525
	UniAgent client	If the CPU usage is greater than 10% or the memory is greater than 200 MB, the UniAgent client automatically restarts.
	Installing a UniAgent	A maximum of 100 UniAgent hosts can be installed at a time.
Application management	Application	An application must be within 5 layers.
Patch management	Patch baseline	A tenant can create a maximum of 50 (public baselines excluded) patch baselines.
Script management	Script content	The content of a user-defined script cannot exceed 4096 bytes.
Job management	Global parameters	The number of global parameters of a user-defined job cannot exceed 30.
Warrooms	WarRoom initiation rules	A maximum of 50 WarRoom initiation rule can be created by a tenant.
Forwarding rules	Forwarding rules	A tenant can create a maximum of 50 incident forwarding rules.

Functional Module	Object	Restriction
Integration management	Data records	COC retains only the latest 10 records of integrated data source.
Personnel management	Number of engineers	The number of personnel created by a tenant cannot exceed 50.
Schedule management	Roles	A maximum of 10 roles are allowed in a single shift scheduling scenario.
Account management	Resource types	Type of resources that can be managed: Elastic Cloud Server (ECS) Currently, account hosting (account import) is supported for the following types of resources: Elastic Cloud Server (ECS), Distributed Cache Service (DCS), Relational Database Service (RDS), and Distributed Message Service (DMS)
	Account baselines	The number of baseline accounts is less than or equal to 30, and the number of components associated with the accounts is less than or equal to 100.

7 Billing

COC was put into commercial use on both the Huawei Cloud Chinese mainland and international websites on July 31, 2024. After that, the basic functions of COC are still free of charge. If some advanced product capabilities start to be charged in the future, a notification will be sent 30 days in advance.

COC may be used in combination with other cloud services to provide you with value-added services such as notifications. These value-added services may incur extra fees, which are settled by those services separately.

8 COC and Other Services

Figure 8-1 shows the relationships between COC and other services.

Figure 8-1 COC and other services

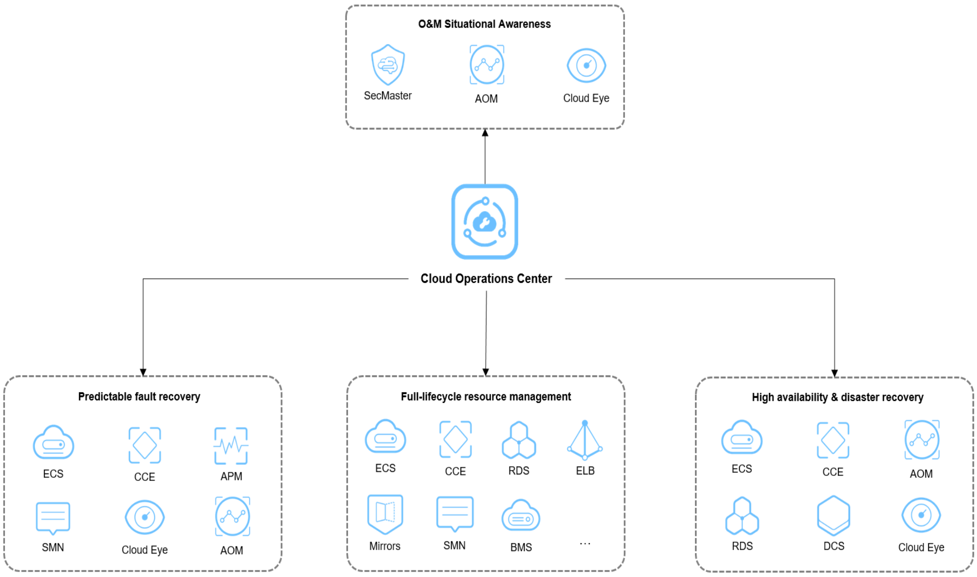

O&M Situational Awareness
SecMaster
AOM
Cloud Eye
Cloud Operations Center
Predictable fault recovery
ECS
CCE
APM
SMN
Cloud Eye
AOM
Full-lifecycle resource management
ECS
CCE
RDS
ELB
Mirrors
SMN
BMS
...
High availability & disaster recovery
ECS
CCE
AOM
RDS
DCS
Cloud Eye

Table 8-1 COC and other services

Service	Interaction with Other Services	Related Feature
SecMaster	Provides security monitoring information for users on the overview page. Presents a comprehensive security overview from three perspectives: security score, security monitoring data, and security trend. It also allows for the creation of personalized security monitoring dashboards.	**Viewing Security Overview**

Service	Interaction with Other Services	Related Feature
Cloud Eye	Represents a resource monitoring data overview and also provides the resource alarm details. After Cloud Eye is integrated into COC, you can obtain and handle alarms generated on Cloud Eye in the fault management module of COC. You can also view metric data on Cloud Eye during chaos drills. To use these functions, enable Cloud Eye first.	**Viewing Resource Monitoring** **Integrating Cloud Eye** **Managing Drill Tasks**
Application Operations Management (AOM)	Provides application monitoring dashboards. The dashboards configured on AOM can be displayed in COC. After AOM is integrated into COC, you can obtain and handle alarms generated on AOM in the fault management module of COC. You can also view metric data on AOM during chaos drills.	**Viewing Application Monitoring** **Managing Drill Tasks**
Elastic Cloud Server (ECS)	Provides ECSs for your operations like batch ECS management, script execution, job execution, and scheduled task management. You can also execute chaos drill tasks on ECSs.	**Batch ECS Operations** **Chaos Drills**
Cloud Container Engine (CCE)	Provides CCE instances, so that you can execute chaos drills on these instances.	**Chaos Drills**
Application Performance Management (APM)	Enables you to obtain and handle alarms generated on APM, and transfer alarms to incidents as required in the fault management module of COC.	**Integrating APM**
Simple Message Notification (SMN)	Enables you to send notifications by SMS messages, emails, voice calls, WeCom, and DingTalk in scenarios like fault management and resource O&M in COC. To use these functions, enable the SMN service first.	**Notification Management**
RDS	Enables you to perform batch operations on RDS DB instances. You can also execute chaos drills on these RDS DB instances.	**Resource O&M** **Chaos Drills**
Bare Metal Server (BMS)	Provides BMSs for your operations like batch BMS management, script execution, job execution, and scheduled task management.	**Resource O&M**
Object Storage Service (OBS)	Enables you to distribute and upload files to ECSs during resource O&M. To use these functions, purchase buckets on OBS first.	**Executing Common Scripts**

Service	Interaction with Other Services	Related Feature
Data Encryption Workshop (DEW)	Enables you to create encrypted parameters during resource O&M. To use this function, purchase keys on DEW first. During account management, you can use keys to protect your account passwords.	**Encrypting Parameters** Account Management

9 Security

9.1 Shared Responsibilities

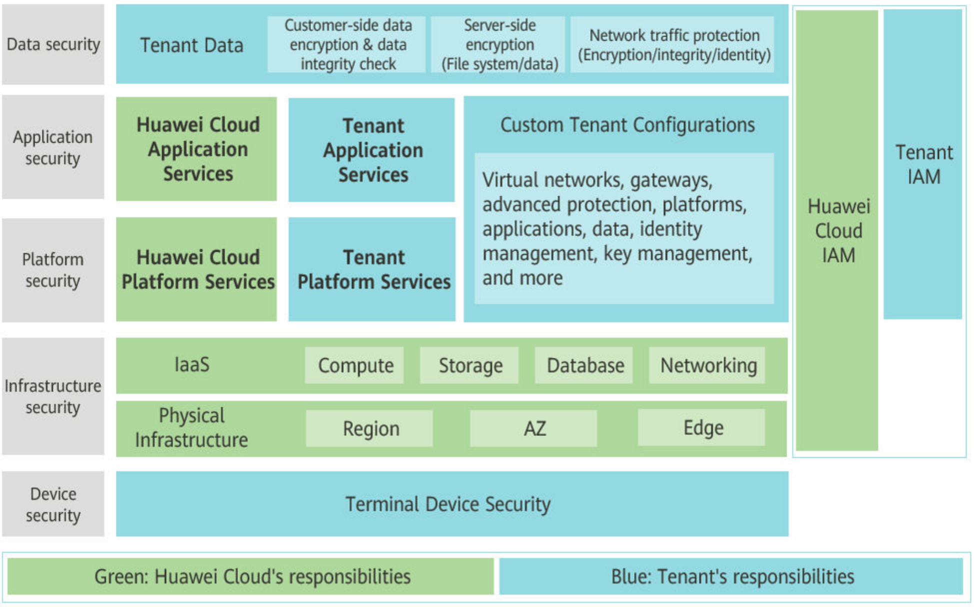
Huawei Cloud guarantees that its commitment to cyber security will never be outweighed by the consideration of commercial interests. To address emerging challenges to cloud security and pervasive cloud security threats and attacks, Huawei Cloud builds a comprehensive security system that is compliant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

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

- Huawei Cloud: ensures the security of cloud services and provides 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.
- Tenants: Ensure secure use of cloud services. 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 9-1 Shared responsibility model of Huawei Cloud


Data security
Tenant Data
Customer-side data encryption & data integrity check
Server-side encryption (File system/data)
Network traffic protection (Encryption/integrity/identity)
Application security
Huawei Cloud Application Services
Tenant Application Services
Custom Tenant Configurations
Virtual networks, gateways, advanced protection, platforms, applications, data, identity management, key management, and more
Platform security
Huawei Cloud Platform Services
Tenant Platform Services
Infrastructure security
IaaS
Compute
Storage
Database
Networking
Physical Infrastructure
Region
AZ
Edge
Device security
Terminal Device Security
Huawei Cloud IAM
Tenant IAM
Green: Huawei Cloud's responsibilities
Blue: Tenant's responsibilities

9.2 Identity Authentication and Access Control

Identity authentication

You can access COC through the COC console, application programming interfaces (APIs), and software development kits (SDKs). No matter which method you choose, you actually use REST APIs to access COC.

COC APIs can authenticate requests. An authenticated request must contain a signature value. The signature value is calculated based on the access key (AK/SK) of the requester and the specific information carried in the request body. COC supports authentication using an Access Key ID (AK)/Secret Access Key (SK) pair. This means it can use AK/SK-based encryption to authenticate a request sender. For more information about access keys and how to obtain them, see **Access Keys/Secret Keys**.

Access control

You can use IAM to securely control access to your COC resources. For more information about IAM and COC permissions management, see **Permissions Management**.

9.3 Auditing and Logging

Auditing

Cloud Trace Service (CTS) is a log audit service intended for Huawei Cloud security. It allows you to collect, store, and query cloud resource operation records. You can use these records to track resource changes, analyze security compliance, and locate faults.

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

If you want to enable and configure CTS, refer to **Enabling CTS**.

Logging

After you enable CTS and configure a tracker, CTS can record operations on your COC resources.

For more information, see **Viewing CTS Traces**.

9.4 Service Resilience

COC provides a three-level reliability architecture and uses intra-AZ instance disaster recovery (DR), dual-AZ DR, and periodic backups to ensure service durability and reliability.

Table 9-1 COC service reliability architecture

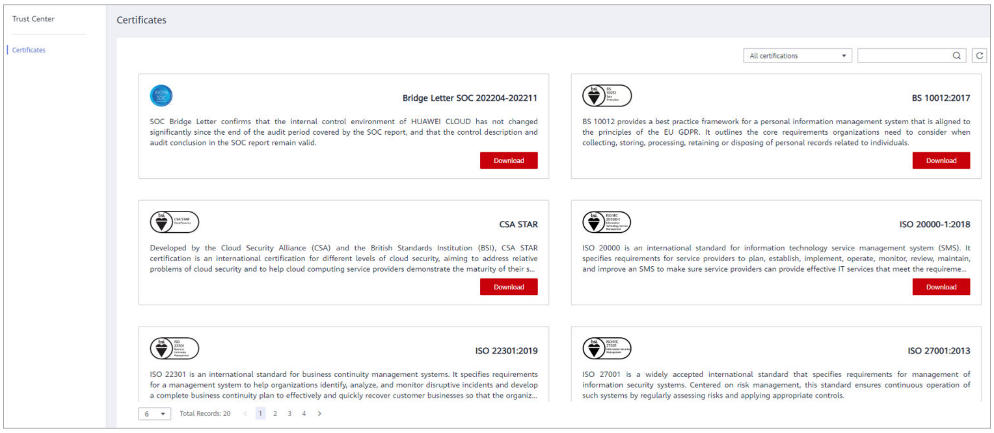
Reliability Solution	Brief
Intra-AZ instance DR	In a single AZ, COC implements instance DR in multi-instance mode and quickly rectifies faults to continuously provide services.
Multi-AZ DR	COC supports cross-AZ DR. If an AZ is faulty, COC services are not interrupted.
Data DR	Data is periodically backed up for data DR.

9.5 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), system and organization controls (SOC), and Payment card industry (PCI) compliance standards. You can **download** them from the console.

Figure 9-2 Downloading compliance certificates



Bridge Letter SOC 202204-202211

SOC Bridge Letter confirms that the internal control environment of HUAWEI CLOUD has not changed significantly since the end of the audit period covered by the SOC report, and that the control description and audit conclusion in the SOC report remain valid.

BS 10012:2017

BS 10012 provides a best practice framework for a personal information management system that is aligned to the principles of the EU GDPR. It outlines the core requirements organizations need to consider when collecting, storing, processing, retaining or disposing of personal records related to individuals.

CSA STAR

Developed by the Cloud Security Alliance (CSA) and the British Standards Institution (BSI), CSA STAR certification is an international certification for different levels of cloud security, aiming to address relative problems of cloud security and to help cloud computing service providers demonstrate the maturity of their s...

ISO 20000-1:2018

ISO 20000 is an international standard for information technology service management system (SMS). It specifies requirements for service providers to plan, establish, implement, operate, monitor, review, maintain, and improve an SMS to make sure service providers can provide effective IT services that meet the requireme...

ISO 22301:2019

ISO 22301 is an international standard for business continuity management systems. It specifies requirements for a management system to help organizations identify, analyze, and monitor disruptive incidents and develop a complete business continuity plan to effectively and quickly recover customer businesses so that the organiz...

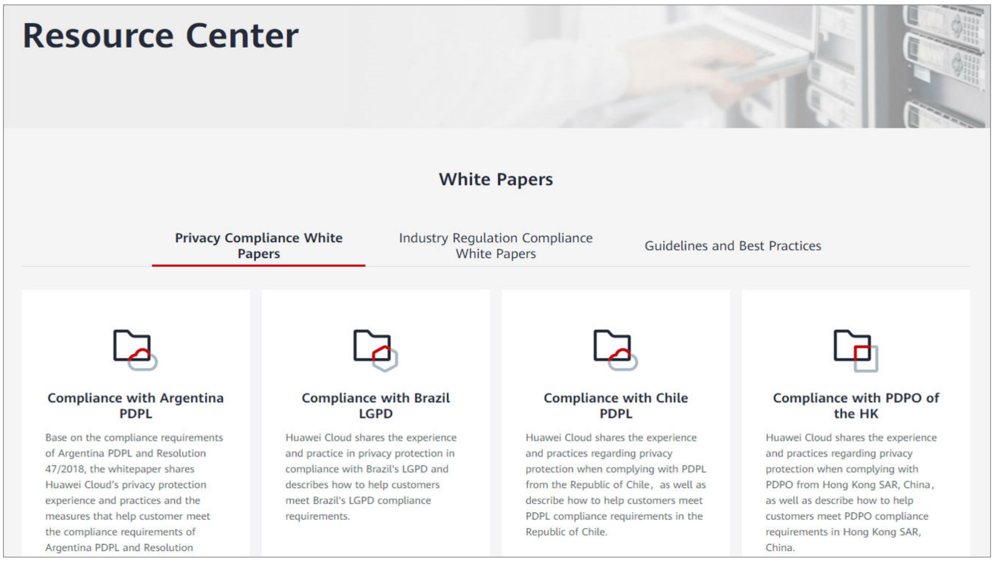
ISO 27001:2013

ISO 27001 is a widely accepted international standard that specifies requirements for management of information security systems. Centered on risk management, this standard ensures continuous operation of such systems by regularly assessing risks and applying appropriate controls.

Resource Center

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

Figure 9-3 Resource center



Resource Center

White Papers

Privacy Compliance White Papers
Industry Regulation Compliance White Papers
Guidelines and Best Practices

Compliance with Argentina PDPL

Base on the compliance requirements of Argentina PDPL and Resolution 47/2018, the whitepaper shares Huawei Cloud's privacy protection experience and practices and the measures that help customer meet the compliance requirements of Argentina PDPL and Resolution

Compliance with Brazil LGPD

Huawei Cloud shares the experience and practice in privacy protection in compliance with Brazil's LGPD and describes how to help customers meet Brazil's LGPD compliance requirements.

Compliance with Chile PDPL

Huawei Cloud shares the experience and practices regarding privacy protection when complying with PDPL from the Republic of Chile，as well as describe how to help customers meet PDPL compliance requirements in the Republic of Chile.

Compliance with PDPO of the HK

Huawei Cloud shares the experience and practices regarding privacy protection when complying with PDPO from Hong Kong SAR, China，as well as describe how to help customers meet PDPO compliance requirements in Hong Kong SAR, China.

10 Change History

Released On	Description
2023-11-30	This issue is the first official release.
2024-06-06	This issue is used for feature update.