HaydnCSF

Best Practices

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HUAWEI CLOUD COMPUTING TECHNOLOGIES CO., LTD.

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1 Certification Tests on HaydnCSF

1.1 Certification Notes

Before starting the certification test, fill in the **required material for product certification tests** based on the product solution and upload it as an attachment during solution registration. Fill in the **reliability checklist** and upload it as an attachment of the last reliability test case after the reliability test case is executed.

Huawei Cloud Certification Test and Requirements

This document describes the certification tests of joint operations products, partner-led, and advanced cloud software. Each test verifies the product functions, performance, security, reliability, and integration. For details, see the following table.

Table 1-1 Requirement description

Test Item		Test Requirement
Function	Service function	1) Test cases must cover all level-2 functions in the function list. 2) Operation steps are required for test cases. 3) End to end test cases are required for main scenarios. 4) If hardware products are involved, partners need to provide the product description, quality test report (third-party or self-test report), and function test report (if any).
	Service control	1) A notification is sent when the license is about to expire. 2) The system is unavailable when the license expires. 3) After the license is renewed, the system can be used normally and the original data is not deleted.

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Test Item		Test Requirement
	Maintainability	1) Centralized Event Management Platform Check 2) Log Management System Check 3) Product Monitoring and Alarm Management System Check 4) Certificate Expiration Alarm Check
Performance		1) Select three to five basic core functions, determine the pressure load (for example, 100 concurrent users) based on the currently used resource specifications, and perform continuous concurrency tests (5 to 10 minutes). 2) Select a hybrid service scenario with two to four system core functions and perform continuous concurrency tests (0.5 to 2 hours). 3) Select any scenario and perform a fatigue pressure test (4 to 6 hours). 4) If hardware products are involved, select three to four hardware service scenarios and perform continuous concurrency tests (0.5 to 2 hours) on the hardware product performance such as a camera's resolution and the number of simultaneous video streaming.
Security	Manual security test cases	1) Execute 34 manual security test cases. 2) API products use tokens or dynamic signatures for authentication. Session- and password-related test cases in manual test cases are not involved.
	Web scanning	1) The open-sourced tool OWASP Zed Attack Proxy (OWASP ZAP) is used for web scanning, and Huawei Cloud Host Security Service (HSS) is used for host scanning. 2) Rectify a fault based on the scan results and suggestions.
	Host scanning	
	Binary scanning	
Reliability		1) Deploy the HA test environment (data HA, application HA, and security services) based on the reliability checklist (**SaaS reliability requirements** and **License reliability requirements**). 2) Design test cases based on the reliability checklist and test services at each fault point. 3) The reliability requirements of the backend service corresponding to the API offering are the same as those of the SaaS.

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Test Item	Test Requirement
Integration	1) Based on the solution architecture diagram, test the connectivity of the integration path of Huawei Cloud services involved in the solution to ensure that the service flows and data flows in core service scenarios can be streamlined with the dependent Huawei Cloud services in an end-to-end manner. 2) If hardware products are involved, select three to six core business scenarios of the solution and perform connectivity tests on their service and data flows.

NOTE

- Function, performance, security, reliability, and integration tests have been released on **HaydnCSF Case Templates**. Select and modify a template by referring to **Designing Test Cases**.
- If hardware products are involved, pay attention to the requirements related to the function test, performance test, and integration test of hardware products in the preceding table.
- The certification test is completed on Haydn Cloud Solution Factory (HaydnCSF). Click **here** to access the HaydnCSF console using Chrome browser (recommended). HaydnCSF is a self-service tool platform that enables partners to quickly build and verify solutions. For details, see **What Is HaydnCSF?**

Reliability Requirements

Reliability requirements are classified into two levels based on the importance of software systems. You can determine and evaluate reliability levels based on the importance of application systems or the following table.

Table 1-2 Reliability requirement levels evaluation

Reliability Requirement Level	Recovery Time Objective (RTO)	Recovery Point Objective (RPO)
Medium	2 hours < RTO < 12 hours	RPO asynchronization in minutes
High	RTO < 2 hours	RPO synchronization in seconds
Description	Indicates the time required for recovering services after a service interruption. For example, if a disaster occurs at 14:00 and the RTO is 2 hours, the DR system must recover services to an acceptable service level before 16:00.	Indicates the amount of acceptable data loss. For example, if a disaster occurs at 14:00 and the RPO is 2 hours, only data loss within this period (between 12:00 and 14:00) is acceptable.

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Reliability requirements are classified into SaaS and license reliability requirements based on the deployment mode. See the following table.

1. **SaaS Reliability Requirements**

Table 1-3 SaaS reliability requirements

Reliability Requirement Item			Medium	High	Description
Data HA (mandatory)	Distributed			√	Database cluster or active/standby. Use the distributed or active/standby mode of the Huawei Cloud database service. You can also use an Elastic Cloud Server (ECS) to build a distributed or active/standby database. In the self-built architecture, the ECS icon must indicate the database to be deployed and the cluster or active/standby relationship.
	Active/standby		√		
	Data backup		√	√	If the automated backup policy is enabled for Huawei Cloud databases, the data backup storage location must be specified for self-built databases.
Application HA	Cluster	Single AZ	√		1. A CCE cluster or a self-built ECS cluster (more than two ECSs where the same application is deployed) is used. 2. Middleware (such as Redis) must be displayed in the architecture regardless of whether Huawei advanced services or self-built middleware is used. Middleware must be deployed in active/standby or cluster mode.
		Cross-AZ		√	
	Data backup		√	√	1. CCE/CCI container deployment + Cloud Backup and Recovery (CBR) 2. ECS + CBR
Security Service	Host security		√	√	Huawei Cloud Host Security Service (HSS), enterprise edition. One ECS for one HSS.
	Anti-DDoS		√	√	Huawei Cloud Anti-DDoS can be used in the test environment. Advanced Anti-DDoS-BGP Pro must be used in the production environment.

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Reliability Requirement Item		Medium	High	Description
	WAF	√	√	In the test environment, you can apply for resources of the basic edition for testing. The production and release requirements are as follows: Medium: WAF standard edition Advanced: WAF professional edition Note: APIs that released through API gateway are not involved.
	Bastion host	√	√	For Huawei Cloud Bastion Host (CBH), use the minimum specifications during the test: 10 hosts, which can be self-built.
System/Audit Log		√	√	Operation logs, security logs, system logs can be recorded and audited. 1. An operation log records operations performed by operators on the system, such as adding, deleting, and modifying resource information. 2. A security log records operations and running information related to system security, such as user login, normal user logout, user locking, user/role addition, deletion, and modification, and system security configuration modification. 3. A system log records operations performed by background services on user resources during system running, such as automatically locking users and periodically clearing user data by the system timer. 4. For the checks that are included in the test cases, Huawei Cloud services are not necessarily required.

2. **License Reliability Requirements**

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Table 1-4 License reliability requirements

Reliability Requirement Item			Medium	High	Description
Data HA (mandatory)	Distributed				Database cluster or active/standby. Use the distributed or active/standby mode of the Huawei Cloud database service. You can also use an ECS to build a distributed or active/standby database. In the self-built architecture, the ECS icon must indicate the database to be deployed and the cluster or active/standby relationship.
	Active/ standby		√	√	
	Data backup		√	√	If the automated backup policy is enabled for Huawei Cloud databases, the data backup storage location must be specified for self-built databases.
Application HA	Cluster	Single AZ		√	1. A CCE cluster or a self-built ECS cluster (more than two ECSs where the same application is deployed) is used. 2. Middleware (such as Redis) must be displayed in the architecture regardless of whether Huawei advanced services or self-built middleware is used. Middleware must be deployed in active/standby or cluster mode. 3. If the license reliability requirement level is medium, single-node deployment is allowed but the alarm monitoring service must be integrated. You can use Huawei Cloud Eye (CES), Application Operations Management (AOM), third-party, or self-built alarm monitoring services. 4. The license reliability level is high, and the application HA meets either the cluster or active/standby requirements.
		Cross-AZ			
	Active/ standby			√	
	Data backup		√	√	CCE/CCI container deployment + CBR Or ECS + CBR
Security Service	Host security		√	√	Huawei Cloud Host Security Service (HSS), enterprise edition. One ECS for one HSS.
	Anti-DDoS		√	√	Huawei Cloud Anti-DDoS

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Reliability Requirement Item		Medium	High	Description
	Bastion host	√	√	1. If resources belong to tenants, no bastion host is required. If resources are maintained by ISVs in a unified manner, configure bastion hosts. 2. For CBH, use the minimum specifications during the test: 10 hosts, which can be self-built.
System/Audit Log		√	√	Operation logs, security logs, and system logs are recorded. 1. An operation log records operations performed by operators on the system, such as adding, deleting, and modifying resource information. 2. A security log records operations and running information related to system security, such as user login, normal user logout, user locking, user/role addition, deletion, and modification, and system security configuration modification. 3. A system log records operations performed by background services on user resources during system running, such as automatically locking users and periodically clearing user data by the system timer. 4. For the checks that are included in the test cases, Huawei Cloud services are not necessarily required.

Example Work Plan for a Certification Test

To ensure that the certification test can be completed efficiently and quickly, arrange R&D personnel in advance to support the test and rectify faults. Understand the test process and make a proper plan before the certification test starts. The following test work plan is for reference only.

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Table 1-5 Example work plan

Test Phase	Content	Planned Start	Planned End	Workload Reference (Person-Day)	Description
Test Preparations	Register and design a solution.	October 19, 2022	October 19, 2022	1	
	Create test requirements, formulate test plans, and design test cases.	October 20, 2022	October 21, 2022	2	
	Deploy a test environment.	October 21, 2022	October 21, 2022	1	The test environment must meet reliability requirements. For details, see **Reliability Requirements**.

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Test Execution	Security test	Binary package scanning (independent of the deployment environment)	October 24, 2022	October 24, 2022	0.5	1. Different types of tests can be performed concurrently. 2. It takes a long time to fix security vulnerabilities. Therefore, use security tools (binary, web, and host scanning) to scan and report security vulnerabilities to R&D engineers for fixing first. 3. If a product has passed other types of Huawei Cloud tests, provide related test materials and evaluate the reuse test conclusion after confirming with the certification test team.
		Web scanning				
		Host scanning				
		Basic manual test cases	October 24, 2022	October 25, 2022	2	
	Reliability test (basic cases)		October 24, 2022	October 24, 2022	0.5	
	Performance test		October 24, 2022	October 24, 2022	1	
	Function test	Function	October 24, 2022	October 27, 2022	50 cases/person-day. Evaluate based on the actual situation.	
		Service control	October 24, 2022	October 27, 2022		
		Maintainability	October 24, 2022	October 27, 2022		
	Integration test		October 24, 2022	October 27, 2022		
Closure	Issue list closure		October 24, 2022	October 27, 2022	/	1. Evaluate based on the number and difficulty of problems found in the test. 2. Report the problems found during the test to the R&D engineers for rectification.

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User Roles

- **Roles on HaydnCSF:**

  Enterprise administrators and **common users**

  - Enterprise administrator can use the Operations Center to manage the users of your enterprise, view reports of your enterprise, and analyze verification efficiency.
  - Common users are people in different positions of your enterprise, for example, project managers, architects, and test engineers.

- **Roles on HaydnCSF workspace**

  A user in a specific HaydnCSF workspace is isolated from each other. A user can have different roles in different workspaces.

  - Administrator: The administrator of a workspace. An administrator can manage users in the workspace.
  - Project manager: A project manager manages a workspace and the users in the workspace, makes test plans, and reviews solutions, requirements, test cases and reports.
  - Architect: An architect registers, designs, and reviews solutions, creates test requirements, and handles test issues on HaydnCSF.
  - Test engineer: A test engineer designs and performs test cases, creates test resources, handles test issues, and provides test reports.
  - Visitor: A visitor can only view a workspace. You can assign the role to a user when inviting them into the workspace.

For details about roles in HaydnCSF, see **HaydnCSF User Access Permission**. To add a user and set a role for the user, see **Setting an Enterprise Administrator**.

Preparations

Before certification, partners need to complete the following operations:

- **Register with HaydnCSF** by referring to **Accessing HaydnCSF** in the user guide.
- **Create a workspace** by referring to **Creating a Workspace**.
- **Add an enterprise user and assign a role to the user**.
- **Invite Huawei engineers to join the workspace**.

For details about how to add an enterprise user, assign a role to the user, and invite a Huawei engineer to join the space, see **Managing Workspace Members**

1.2 Certification Process and Instructions

1.2.1 Process Overview

Based on HaydnCSF, there are standard processes, quick processes, and customized processes. Standard processes are used for the certification of the joint operations product, partner-led products, and advanced cloud software. The responsibilities in the processes are as follows:

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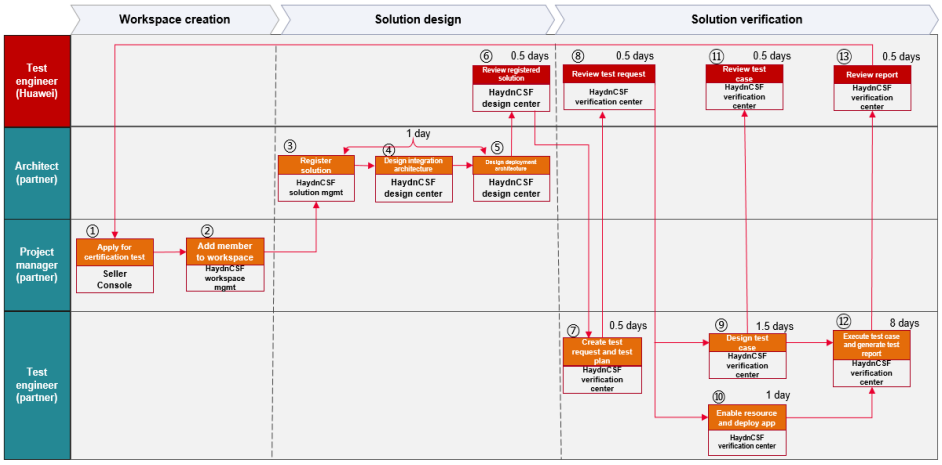
- Partners: create workspace, register and design solutions, create test requirements, design test cases, enable test resources, execute test cases, and generate test reports.
- Huawei: reviews the solutions, test requirements, test cases, and test reports.

Figure 1-1 Process overview



NOTE

1. This flowchart is based on role management. The administrator, architect, test engineer, and project manager of a partner enterprise can be the same person.
2. If a partner has not contacted the Huawei personnel responsible for releasing the product, contact the Huawei personnel to test the connection and read the operation guide in advance for preparation.

1.2.2 Registering Solutions

The partner architect registers a solution, selects the corresponding certification test process, and completes the solution architecture design.

NOTE

If a solution has been automatically created on the seller console, use the default solution directly.

Procedure

1. Log in to HaydnCSF as a partner architect, click the name of the created workspace, choose **Space Management** > **Solutions** > **Create**, and create a solution on the **Solution Management** page.

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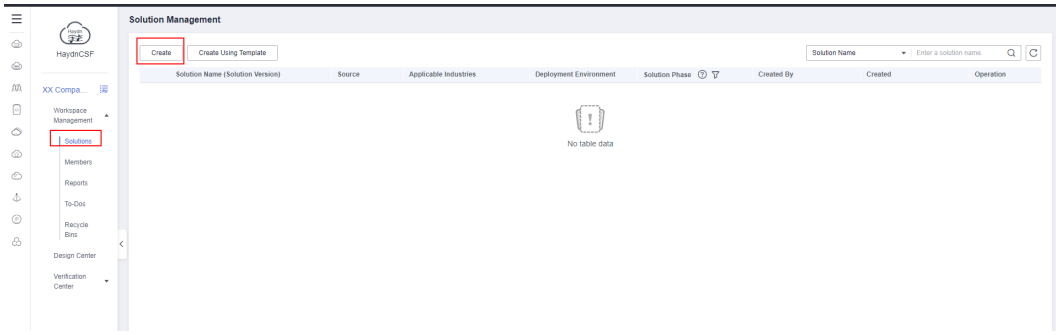
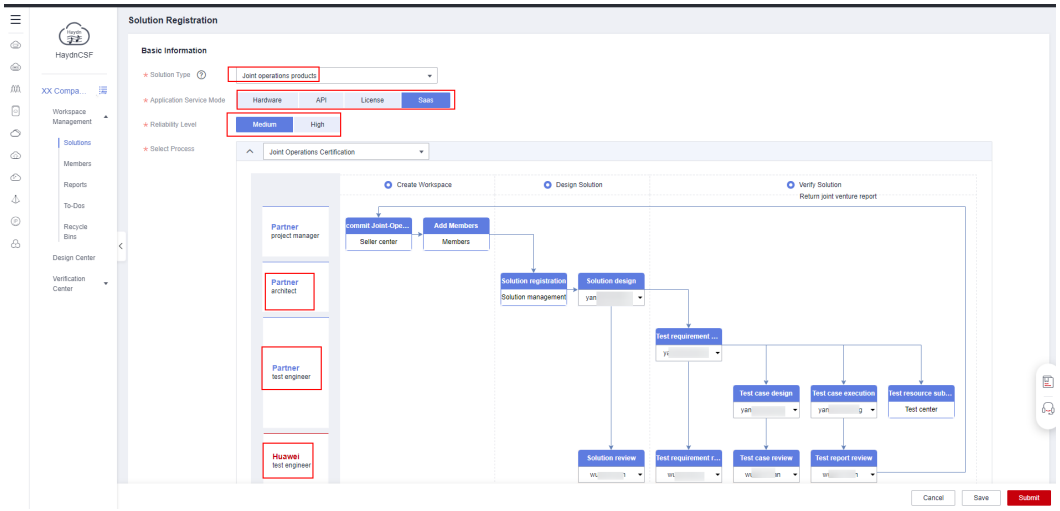
Figure 1-2 Creating a solution



2. Specify the solution details.
   - **Solution Type**: Select **Joint operations products**, **Partner-led**, or **Advanced cloud software** as required.
   - **Application Service Mode**: Select a mode based on the product delivery mode.
   - **Reliability Level**: Select **Medium** or **High** based on the **certification test reliability requirements** and service reliability requirements.
   - **Partner architect**: Select an architect for designing architectures from the drop-down list. If an architect cannot be selected, check whether the architect is a member of this workspace. Only members in this workspace can be selected.
   - **Partner test engineer**: Select a test engineer responsible for the certification from the drop-down list. If a test engineer cannot be selected, check whether the test engineer is a member of this workspace. Only members in this workspace can be selected.
   - **Huawei test engineer**: Huawei test contact person. Select a Huawei test engineer from the drop-down list. If a test engineer cannot be selected, check whether the test engineer is a member of this workspace. Only members in this workspace can be selected.

Figure 1-3 Specifying the solution details (1)



   - **Solution Name**: Enter the name of a released solution.

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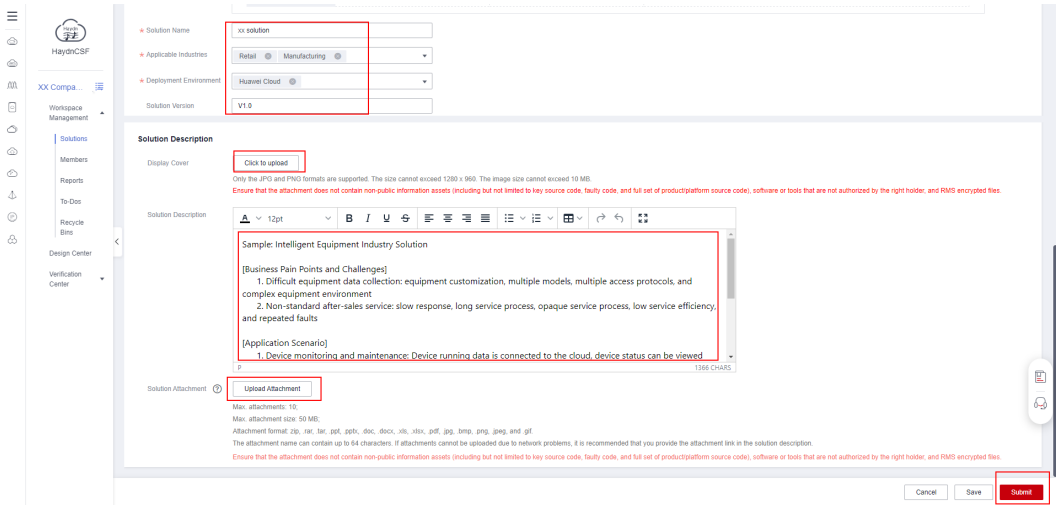
- **Applicable Industries**: Select one or multiple industries to which the product applies.
- **Deployment Environment**: **Huawei Cloud**, **Huawei Cloud Stack**, **Huawei Cloud Stack Online**, and **Intelligent EdgeSite (IES)** are available. If Huawei Cloud Stack deployment is required, evaluate it during architecture design.
- **Solution Version**: version number of the tested solution.
- **Display Cover**: Upload the service flowchart of the solution, which is displayed when the solution is exported.
- **Solution Description**: Introduce a product solution by referring to the example.
- **Solution Attachment**: Upload the *Test Required Materials* of the solution. To obtain the document, see **Certification Notes**.

Figure 1-4 Specifying the solution details (2)



3. Click **Submit**. You can view the new solution on the **Solution Management** page.

NOTE

- Some services of Huawei Cloud Stack are different from those of Huawei Cloud. To check if a deployment environment supports Huawei Cloud Stack, evaluate the deployment environment during design by referring to **Huawei Cloud Stack Product Documentation** and **Huawei Cloud Stack 8.2.1 Solution Description**.

1.2.3 Designing Architectures

In the architecture design phase, partner architects complete the integration architecture design and resource list configuration.

Designing an Integration Architecture

To design an integration architecture, see **Designing an Integration Architecture**.

Procedure

1. After logging in to the HaydnCSF console, partner architects can click **To-Dos** or **Solutions** to design solutions.

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Figure 1-5 Clicking To-Dos

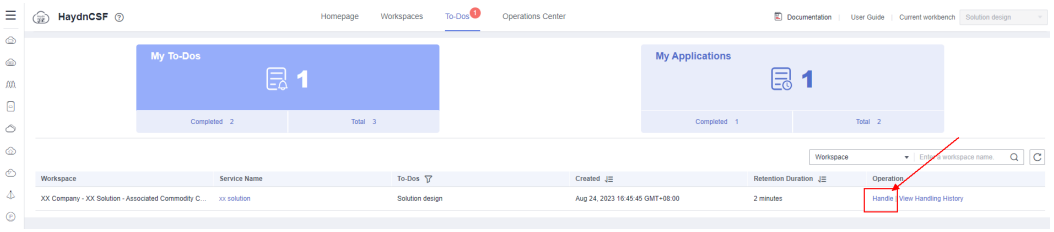


Figure 1-6 Clicking Solutions

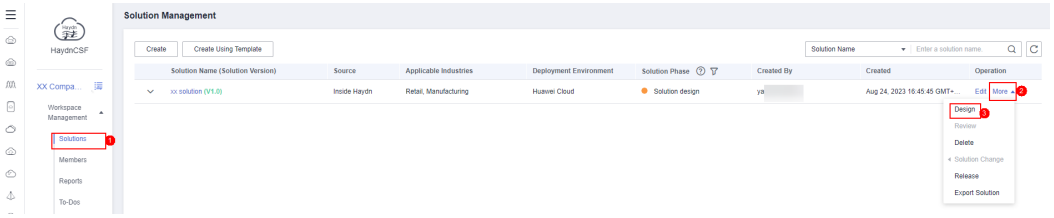
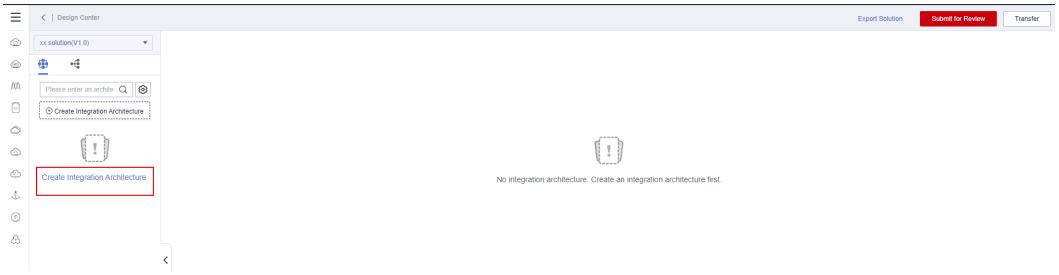


Figure 1-7 Solution architecture designing page



2. Click **Create Integration Architecture** and complete the configuration.
   - **Architecture Name**: The system automatically uses the solution name and version number entered during solution registration as the architecture name.
   - **Architecture Template**: Generally, select **No template** and select components to customize the architecture design.
     i. **No template**: No template is used.
     ii. **Architecture template for solution acceleration field**: provides reference architecture templates for secondary editing, accelerating architecture design. For example, you can search for a template by keyword **I want to find a template for the supply chain collaboration scenario in the manufacturing industry**.
     iii. **Existing architecture**: If another workspace has been created before this workspace and the architecture diagram have been drawn, you can copy the architecture diagram to this workspace. The deployment architecture will be copied synchronously.
   - **Deployment Environment**: indicates the environment to be deployed in this solution. Only the deployment environment specified during solution creation can be selected. In the following figure, **Huawei Cloud** is selected during solution design. Therefore, only **Huawei Cloud** can be selected.
   - **Architecture Description**: You can describe the architecture diagram.

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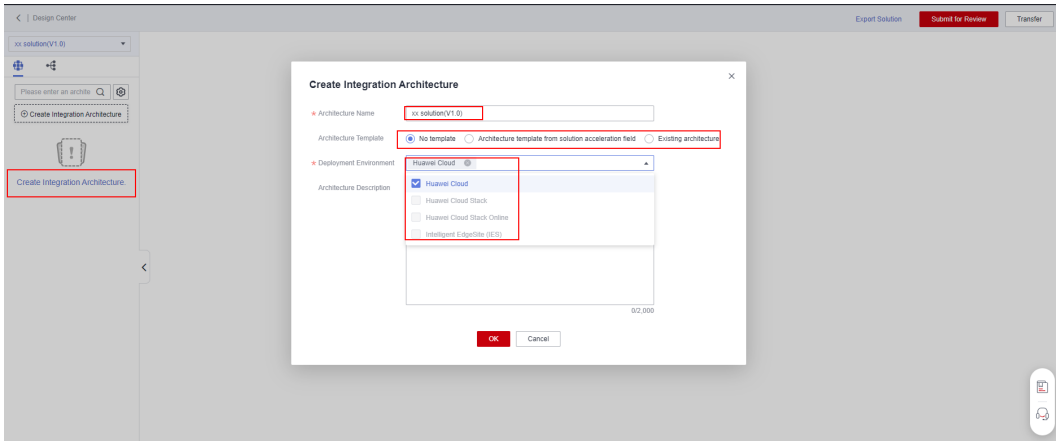
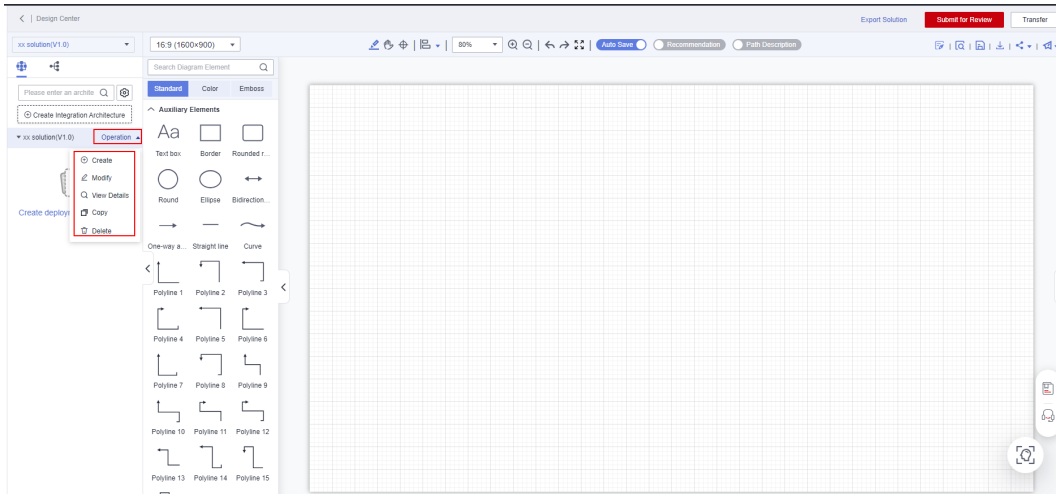
Figure 1-8 Creating an integration architecture 1



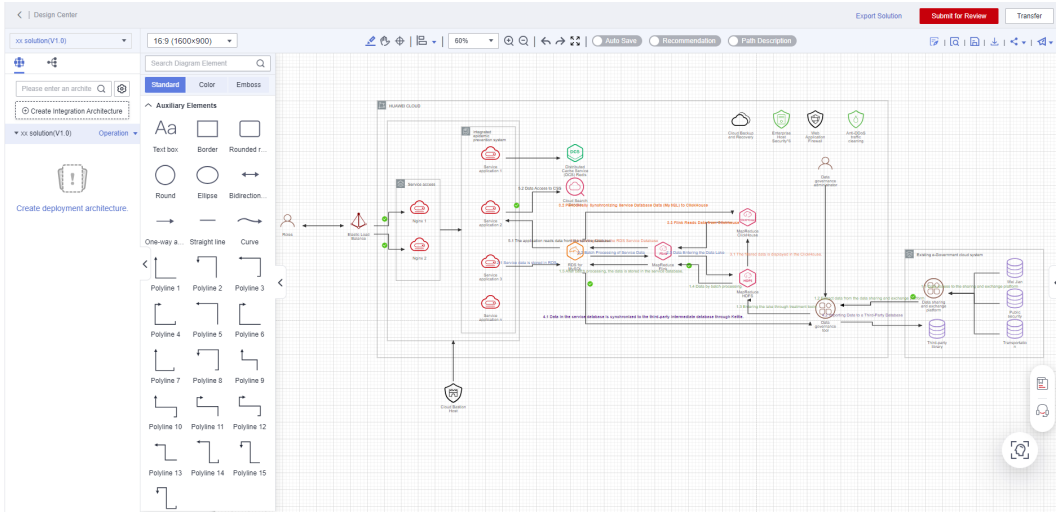
3. Click **OK**. You can click **Operation** to modify or perform other operations on the integration architecture information.

Figure 1-9 Creating an integration architecture 2



4. Complete the architecture design based on the certification test requirements.

Figure 1-10 Creating an integration architecture 3



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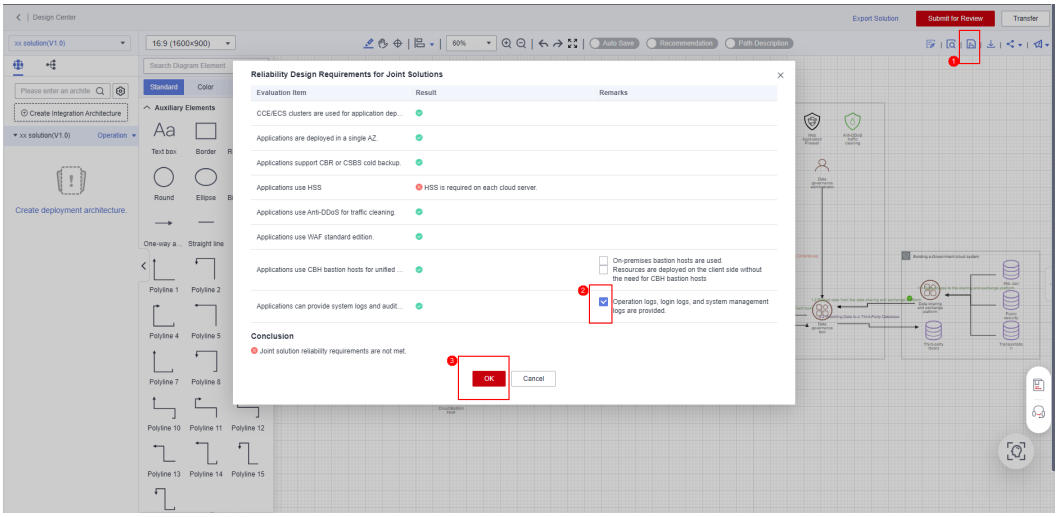
5. Click the save icon in the upper right corner and select items from **Remarks** as required.

   Figure 1-11 Completing the reliability requirement configuration of the integration architecture

6. Create a deployment architecture in the integration architecture and complete the configurations.

NOTE

The solution acceleration field of HaydnCSF provides a large number of **architecture templates** for architecture design reference and secondary editing. For details, see **Architecture Templates**.

Designing an Architecture and Configuring Cloud Resources

1. Click **Create deployment architecture** and specify the deployment architecture information.
   - **Architecture Name**: By default, this value is automatically generated in the format of Solution name + Version number.
   - **Architecture Type**: **Manual deployment** and **Manual deployment (graphical mode)** are available.
     i. **Manual deployment**: You need to manually create and search for cloud services in the architecture diagram to configure specifications.
     ii. **Manual deployment (graphical mode)** (recommended): Click the cloud icon on the architecture to select the required cloud service specifications.
   - **Deployment Environment**: You can select only the deployment environment specified in the solution creation phase.
   - **Architecture Description**: You can describe the deployment architecture. This parameter is optional.

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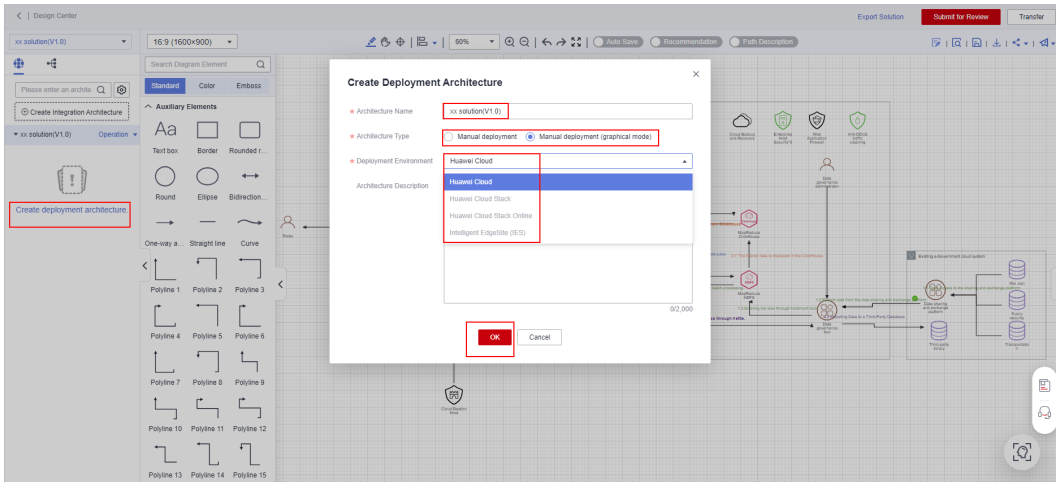
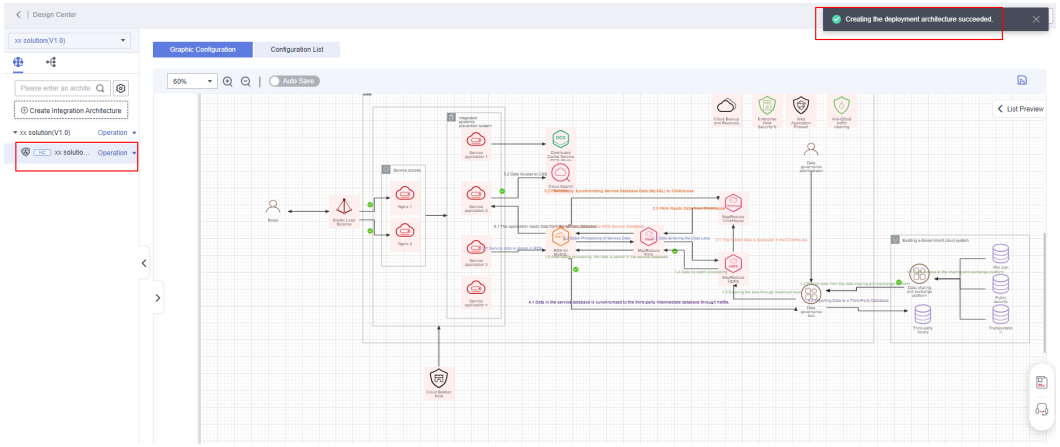
Figure 1-12 Creating a deployment architecture 1



2. After specifying the information, click **OK**.

Figure 1-13 Creating a deployment architecture 2



3. Click **Graphic Configuration**. In the configuration diagram, click the cloud service to be configured and select the specifications of the cloud service.

NOTE

Icons of cloud services whose specifications have not been configured are highlighted in pink.

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Figure 1-14 Configuring the cloud service specifications 1

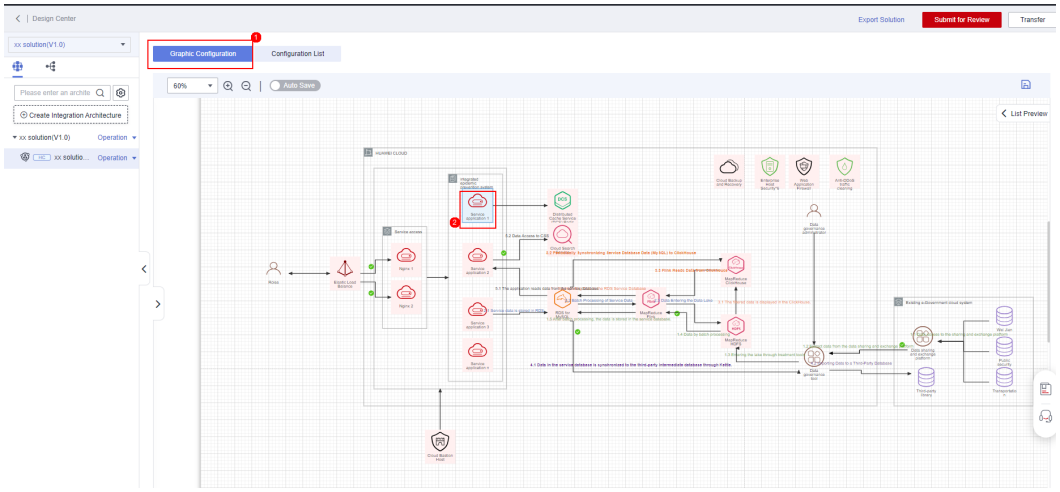
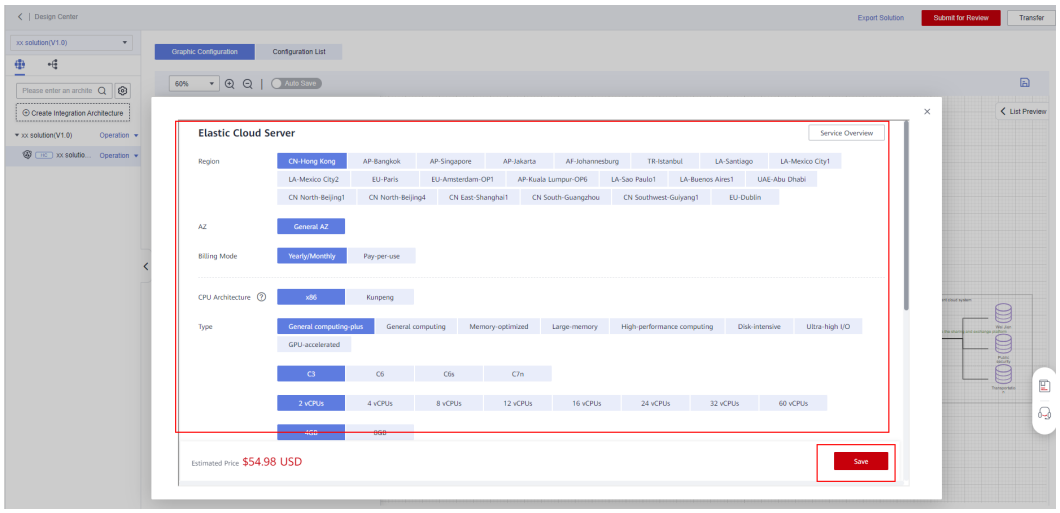


Figure 1-15 Configuring the cloud service specifications 2



4. After all cloud services are configured, the background color of all icons in the architecture diagram changes to white. Save the settings to synchronize them to the configuration list of the deployment architecture.

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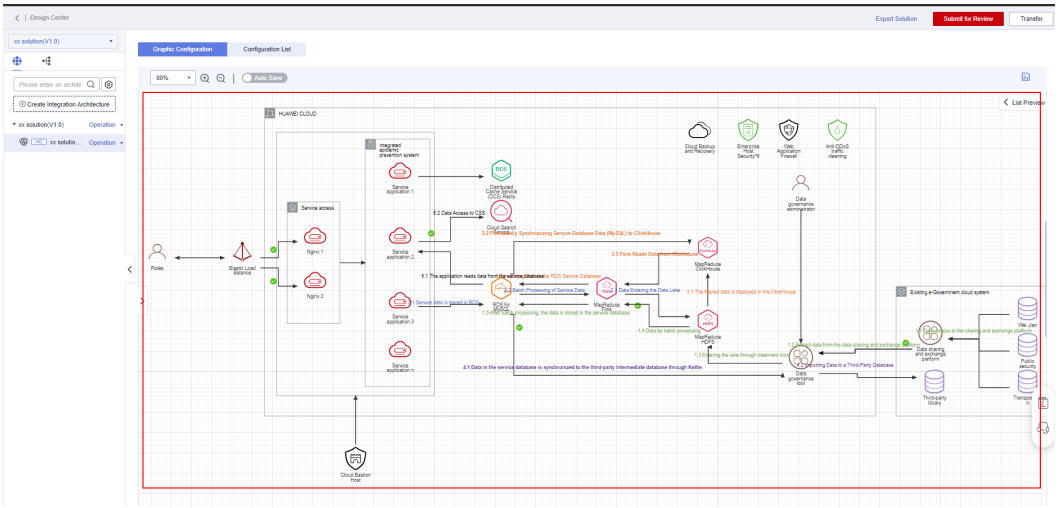
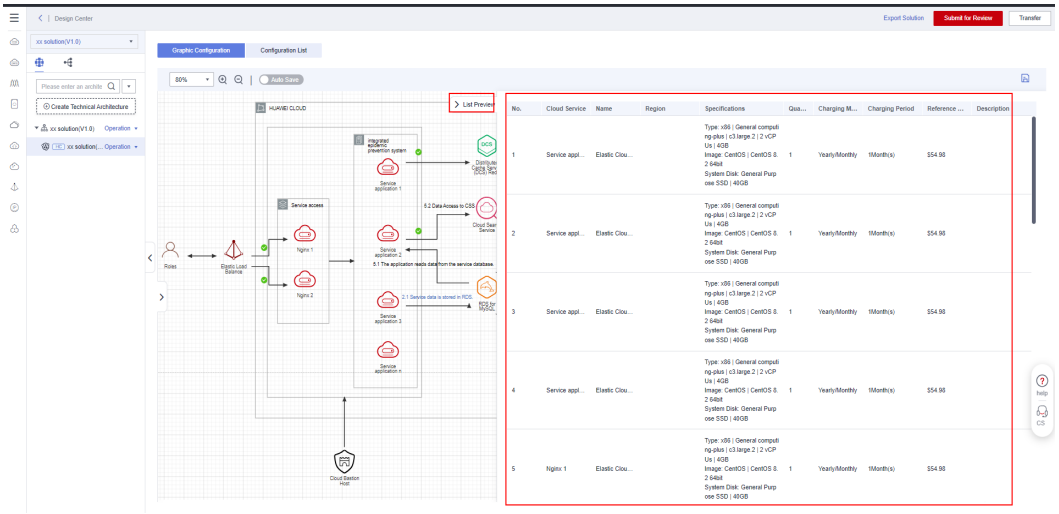
Figure 1-16 Completing the cloud service specifications



5. Click **List Preview** to view the configured resource list.

Figure 1-17 Viewing the configured resource list 1



6. Click **Configuration List** to view the configured cloud service resource list.

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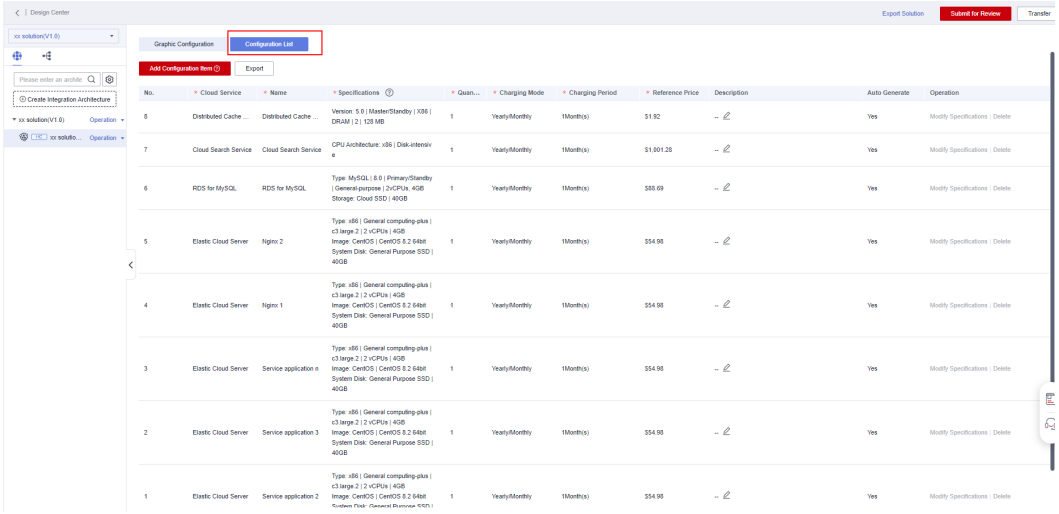
Figure 1-18 Viewing the configured resource list 2



NOTE

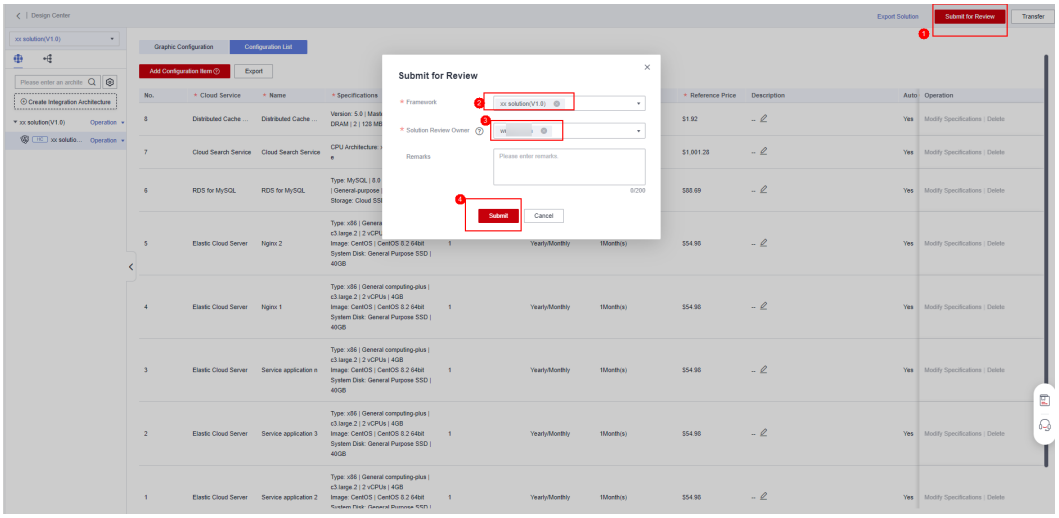
You can select cloud service specifications based on the graphical cloud service specification configuration diagram to ensure that the type, quantity, and specifications of the cloud services in the deployment architecture design are consistent with those of the cloud services used in the deployment environment on Huawei Cloud.

Submitting for Review

After the architecture design is complete, submit it for review.

1. **Submit for Review**: Submit the solution and design to Huawei test engineers.
   - **Framework**: Select the name of the target architecture.
   - **Solution Review Owner**: Generally, select Huawei test engineers.

Figure 1-19 Submitting the solution design for review



2. After the solution is submitted, Huawei test engineers review the solution. If the solution passes the review, the solution design is complete. Otherwise, modify the solution based on the review comments and submit it again.

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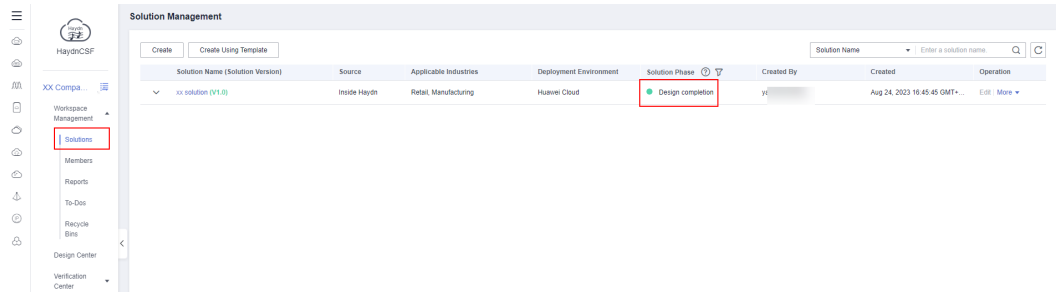
Figure 1-20 Completing the solution design



CAUTION

The review mainly checks whether the submitted materials meet the requirements, whether the integration architecture diagram is standard, and whether the deployment resource list is correct. To improve the review efficiency, perform self-check before submission.

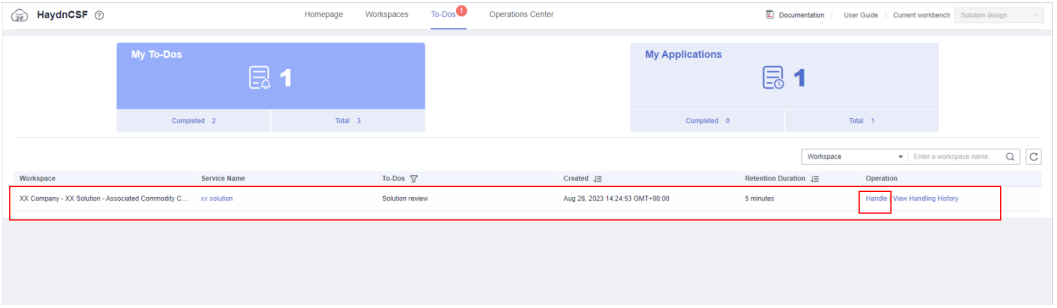
Reviewing a Registration Solution

Huawei Cloud test engineers go to the to-do list and review the solution and architecture submitted by the partner.

Procedure

1. Huawei test engineers log in to the HaydnCSF console, click **To-Dos**, find the corresponding solution, and click **Handle** to review the solution.

Figure 1-21 To-Dos page



2. If the Huawei test engineers want to transfer the solution to other personnel to review, select **Transfer**. If the materials submitted by the partner do not meet the requirements, the engineers reject the solution to the partner for modification.

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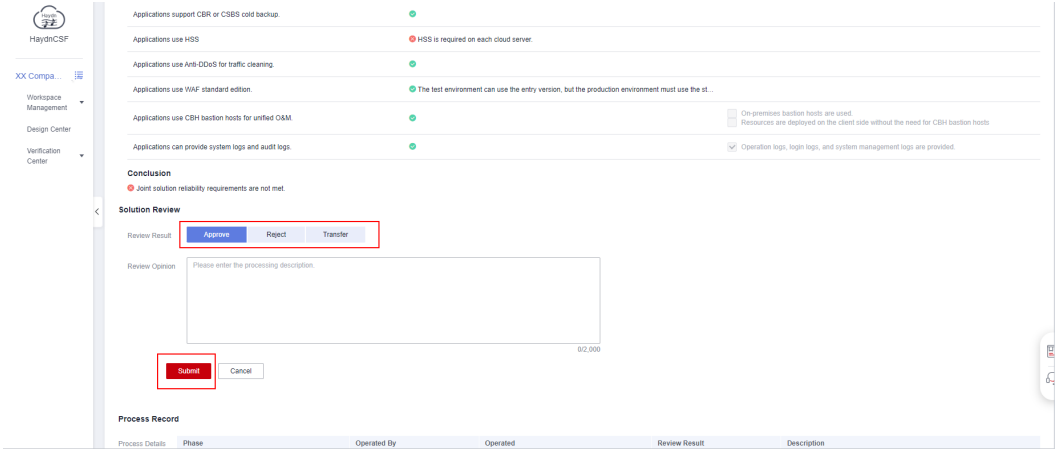
Figure 1-22 Solution review page



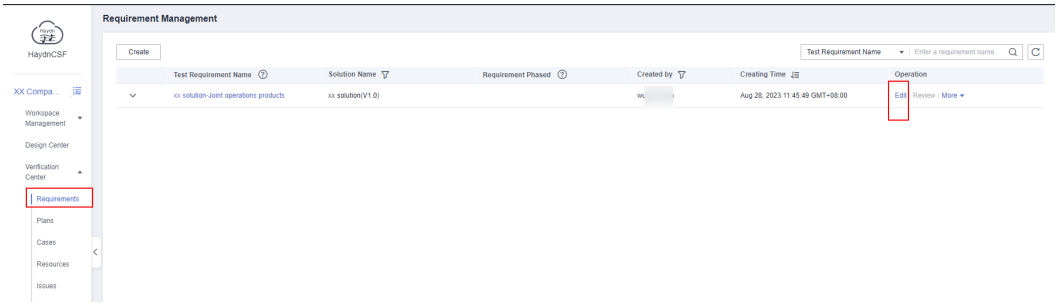
1.2.4 Creating Test Requirements

After a solution is approved, a requirement is automatically created on the **Requirement Management** page. A partner test engineer can go to the workspace and choose **Requirements** in the navigation pane to edit the requirement or create a requirement. Tests on the function, performance, security, reliability, and integration are required for the Huawei Cloud certification test. For details about test requirements, see **Huawei Cloud Certification Test and Requirements**.

Procedure

1. Go to the requirement management page.

Figure 1-23 Entry to the requirement management page



The following describes how to edit an automatically created requirement.

2. Edit the requirement information.
   - **Solution Name**: The name of the created solution is automatically associated.
   - **Verification Process**: Select a process based on the solution type.
   - Select the owner of the corresponding phase as shown in the following flowchart.

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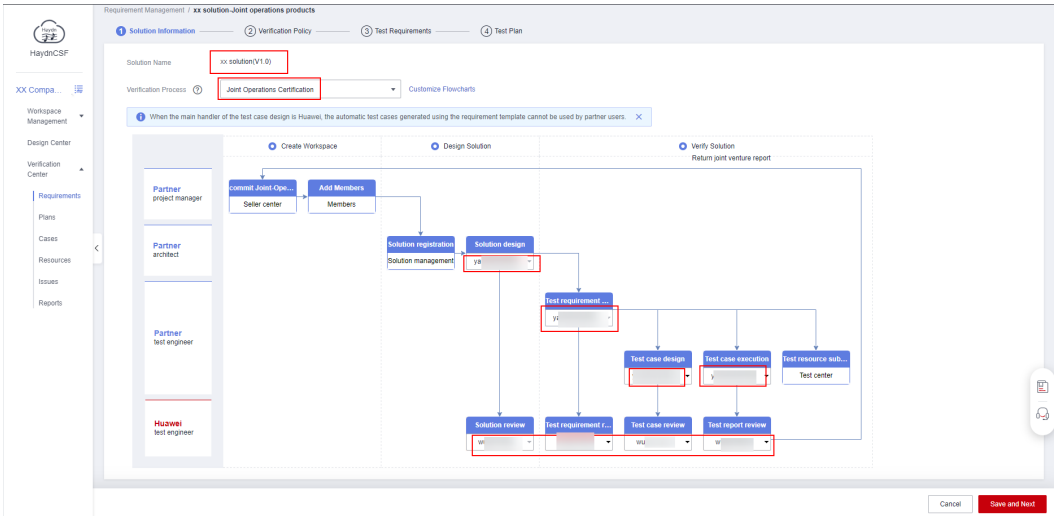
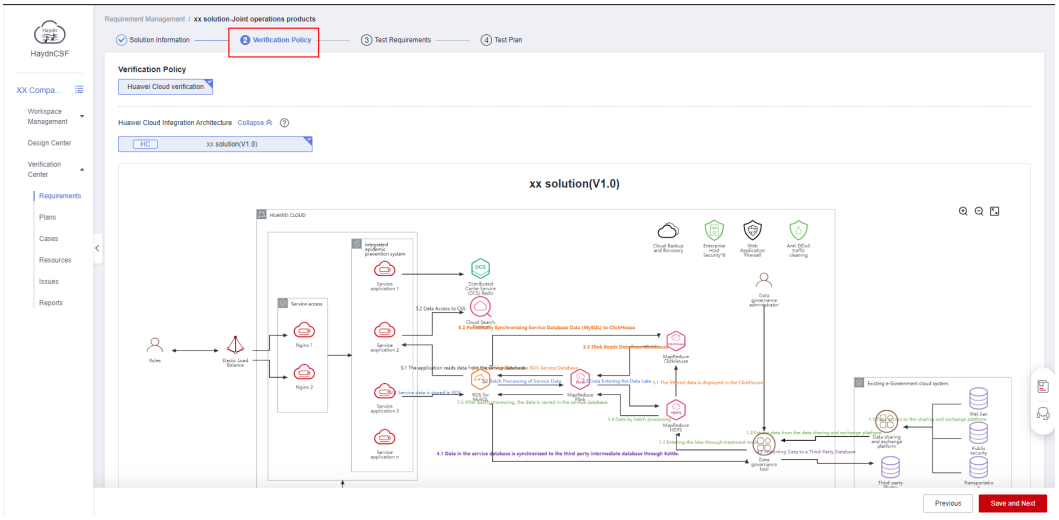
Figure 1-24 Solution information page



3. Click **Save and Next**.

Figure 1-25 Verifying the policy 1



4. Select the corresponding deployment architecture information and the account of the corresponding resource provisioning process.

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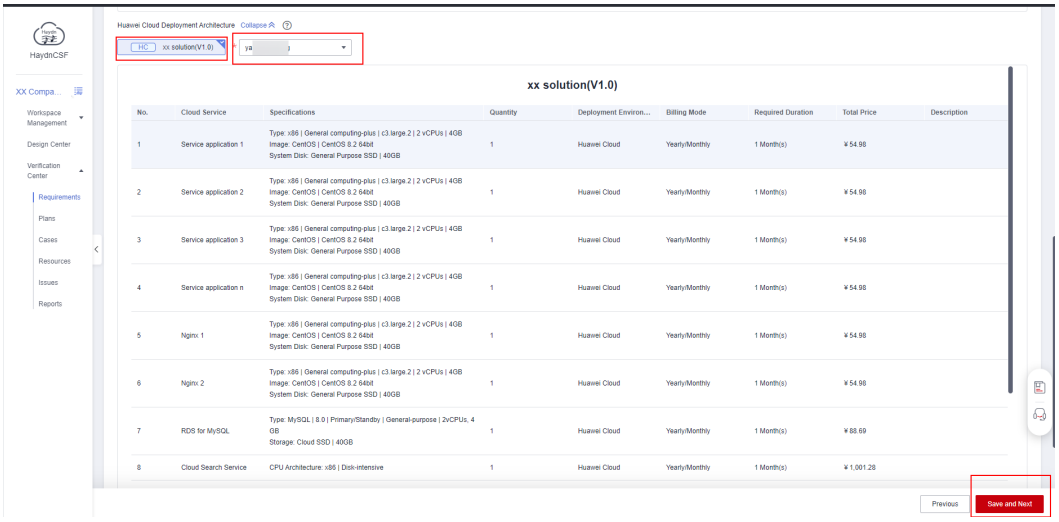
Figure 1-26 Verifying the policy 2

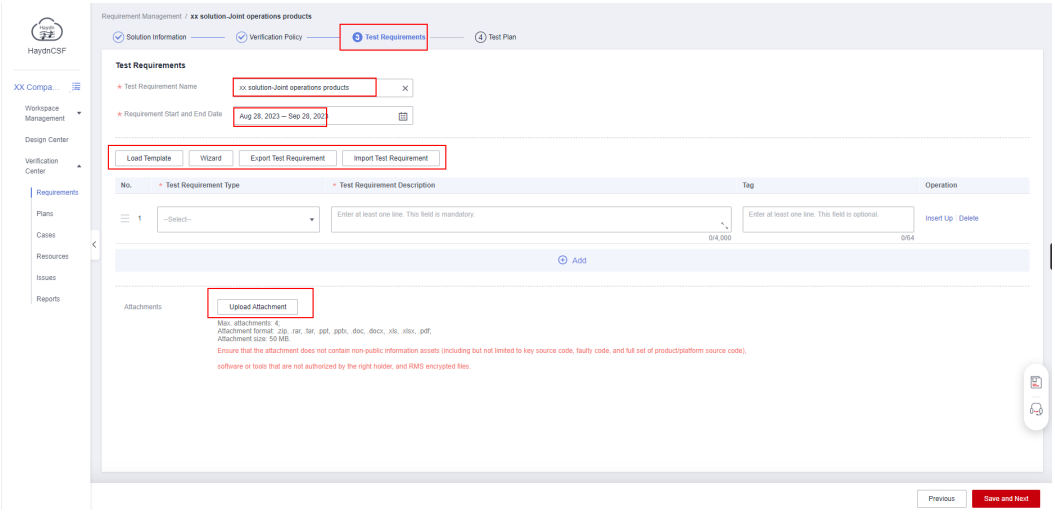


5. Click **Save and Next**.

   Specify the requirement name, start and end time, and test requirement type. The subsequent test cases will be classified based on the requirement type. Test requirements can be loaded from a template, imported, and exported, and requirements and cases can be generated in wizard mode.

   - **Test Requirement Name**: This value is user-defined.
   - **Requirement Start and End Date**: Specify the start and end date.
   - **Load Template**: Load a requirement template to generate test requirements in one-click.
   - **Wizard** (recommended): Quickly create requirements and generate corresponding function, integration, and reliability cases.

   Figure 1-27 Test requirements



Wizard

1. Click **Wizard** and click **Download Function Cases Template** in the displayed dialog box.

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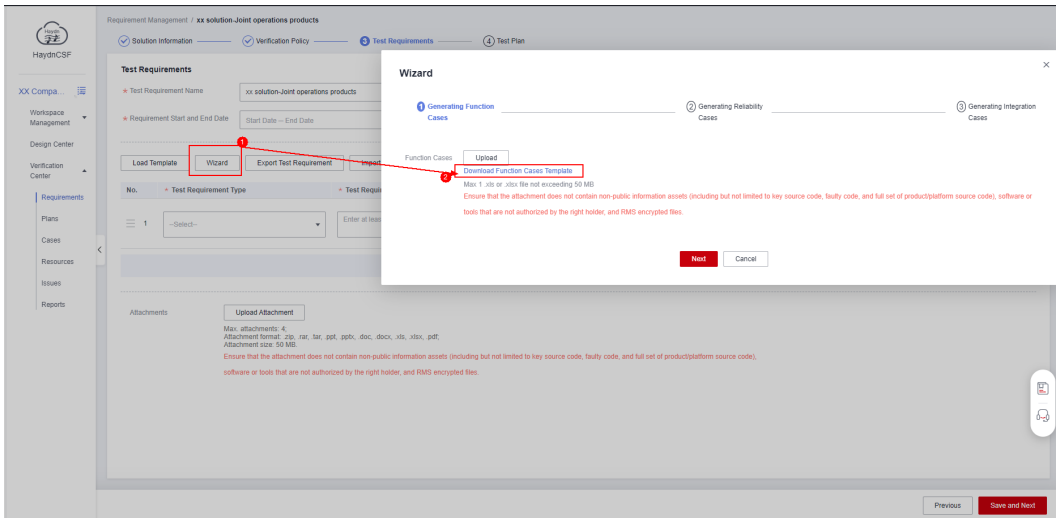
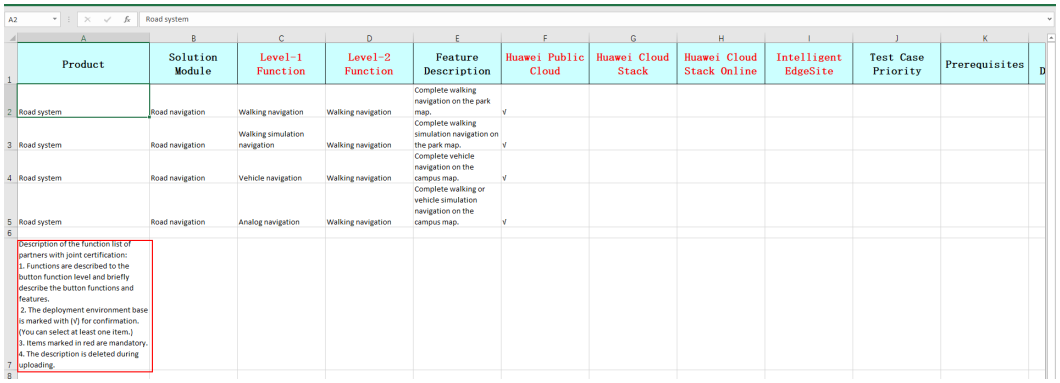
Figure 1-28 Wizard



2. Open the downloaded function case template and complete the table information based on the template requirements.

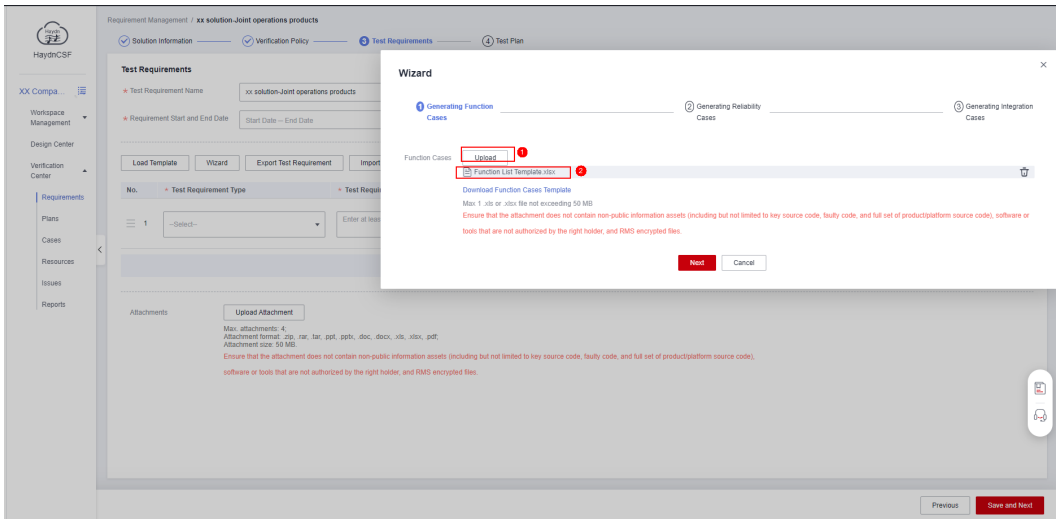
Figure 1-29 Function case template



Product	Solution Module	Level-1 Function	Level-2 Function	Feature Description	Huawei Public Cloud	Huawei Cloud Stack	Huawei Cloud Stack Online	Intelligent EdgeSite	Test Case Priority	Prerequisites
Road system	Road navigation	Walking navigation	Walking navigation	Complete walking navigation on the park map.	√					
Road system	Road navigation	Walking simulation navigation	Walking navigation	Complete walking simulation navigation on the park map.	√					
Road system	Road navigation	Vehicle navigation	Walking navigation	Complete vehicle navigation on the campus map.	√					
Road system	Road navigation	Analog navigation	Walking navigation	Complete walking or vehicle simulation navigation on the campus map.	√					
Description of the function list of partners with joint certification: 1. Functions are described to the button function level and briefly describe the button functions and features. 2. The deployment environment base is marked with (√) for confirmation. (You can select at least one item.) 3. Items marked in red are mandatory. 4. The description is deleted during uploading.										

3. After filling in the template, click **Upload** to upload the template and click **Next**.

Figure 1-30 Uploading the template file



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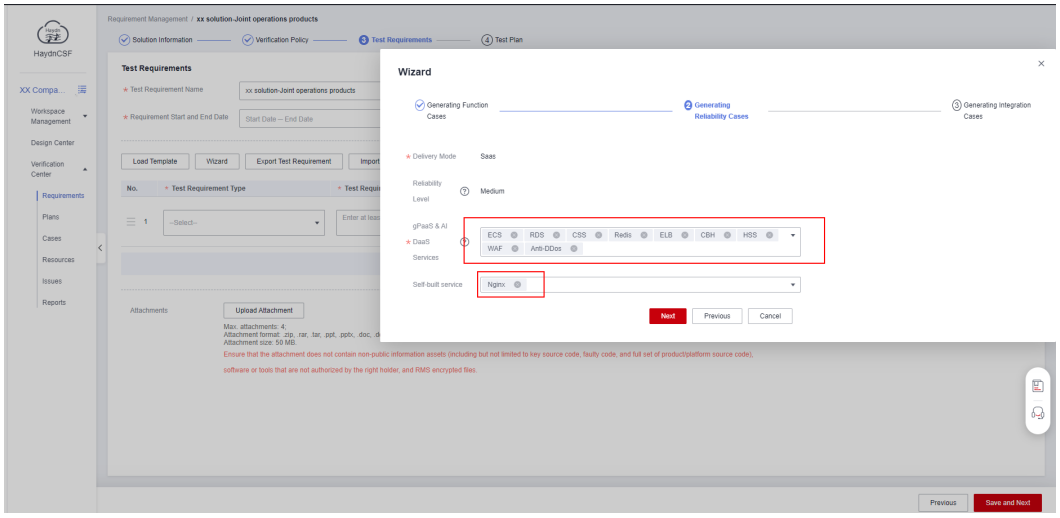
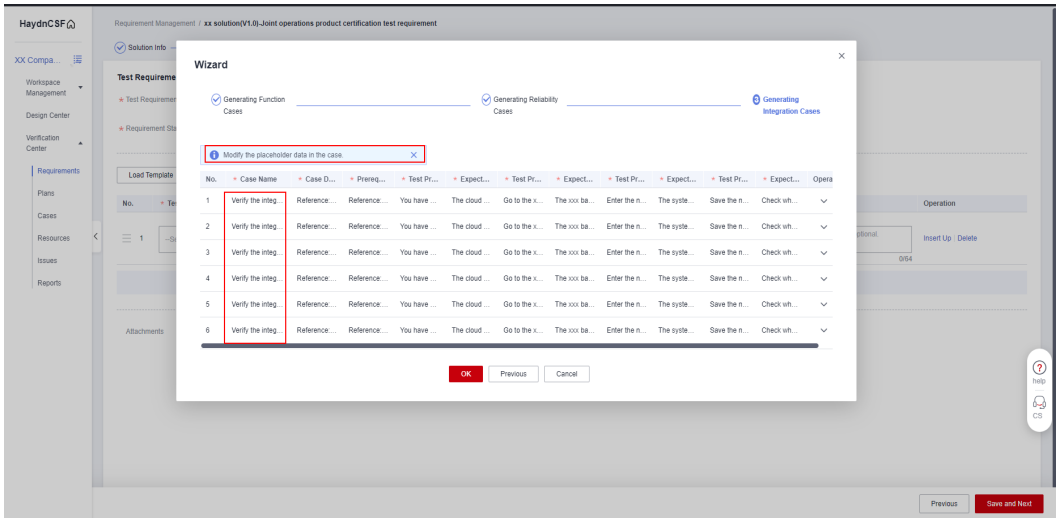
4. Confirm reliability-related cloud services.
   - **gPaaS & AI DaaS Services**: HaydnCSF automatically synchronizes the cloud service type used in the architecture diagram.
   - **Self-built service**: Select a self-built service. **Nginx** is used as an example.

Figure 1-31 Generating reliability cases



5. Click **Next**. HaydnCSF automatically generates integration test cases based on the used advanced cloud services.

Figure 1-32 Generating integration cases



6. Click the drop-down button in the **Operation** column, modify the placeholder content of the case content, and click **OK**.

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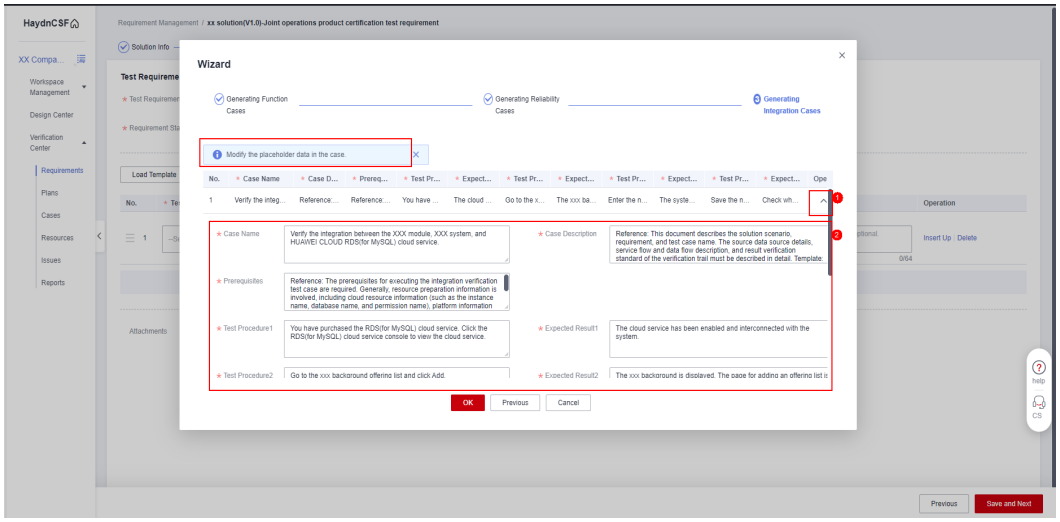
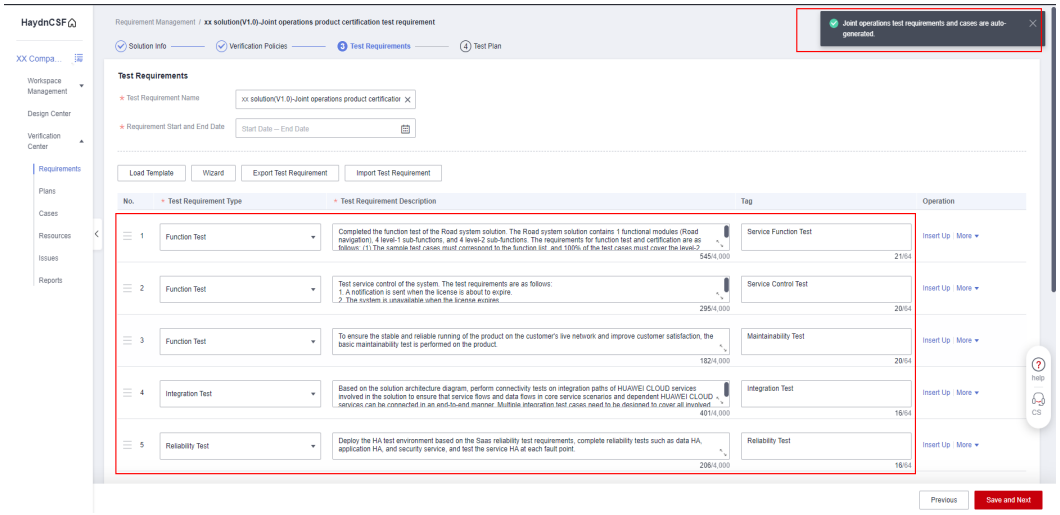
Figure 1-33 Editing integration cases



7. Requirements and test cases are successfully created using the wizard mode.

Figure 1-34 Loading requirements



8. After the test requirement phase is complete, click **Save and Next**.

   Click **Add** to complete the plan. You can also click **Load Template** or **Import Test Plan** to generate a test plan.

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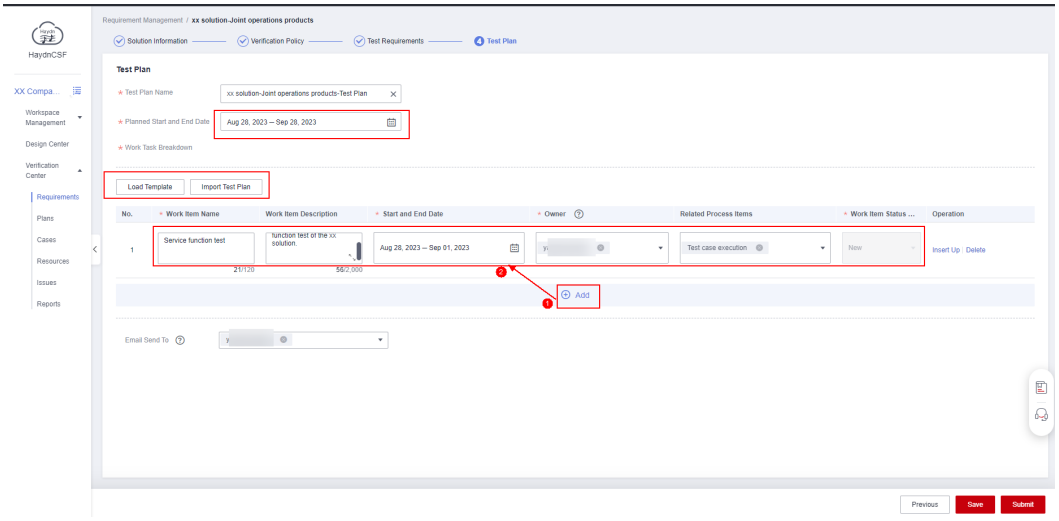
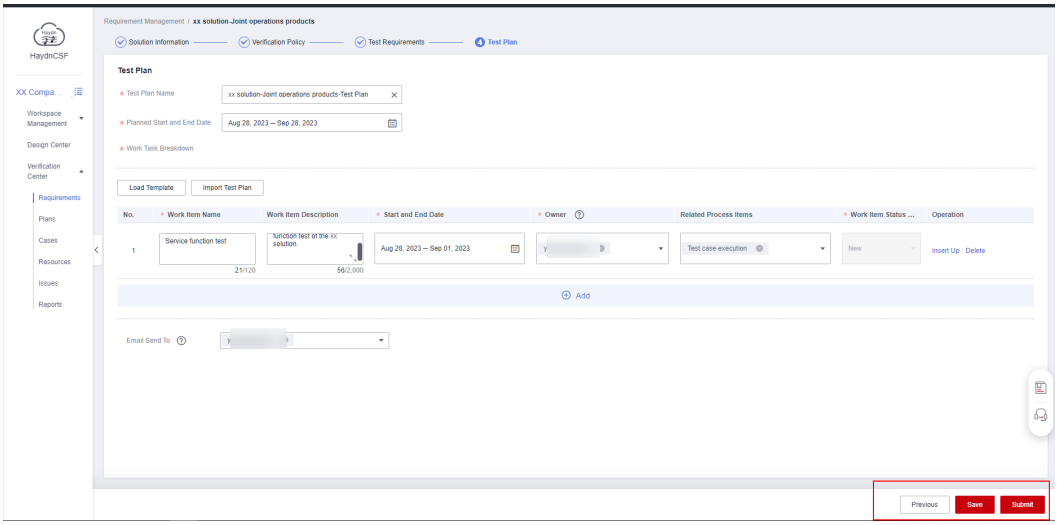
Figure 1-35 Generating test plans



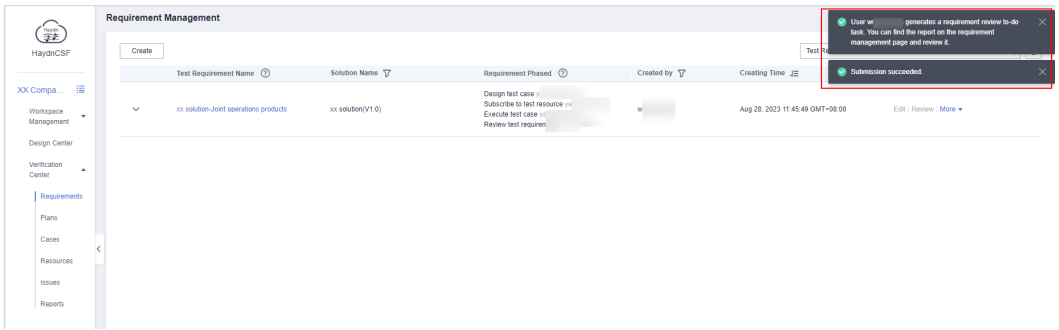
9. After a test plan is created, you can click **Previous** to edit the previous content. You can also click **Save** to archive the edited content for future editing.

Figure 1-36 Submitting the requirement for review



10. Click **Submit** to submit the requirement to Huawei test engineers for review.

Figure 1-37 Submitting the test requirement



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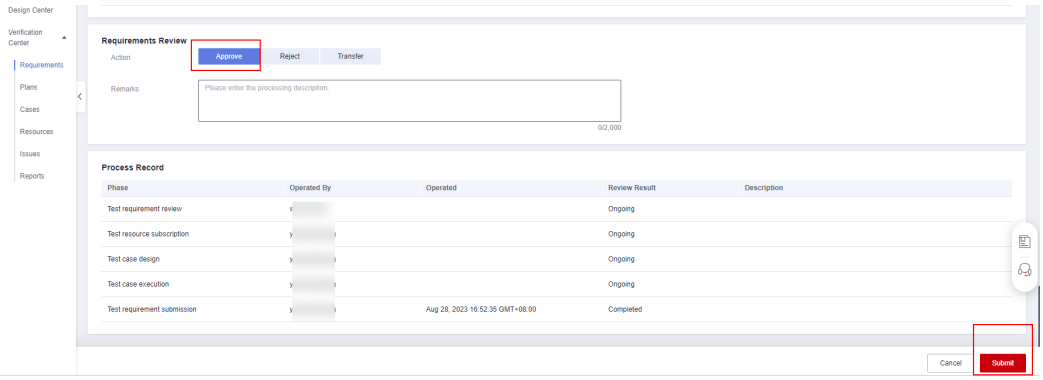
CAUTION

1. **Wizard**: allows you to quickly import function, reliability, and integration cases.
2. **Test Plan**: You need to clarify the plan time and owner of each phase and submit the plan to Huawei test engineers for review.

Reviewing Test Requirements

Huawei Cloud test engineers review test requirements submitted by partners and assign a partner test engineer as the case designer to import and edit test cases.

Figure 1-38 Reviewing test requirements



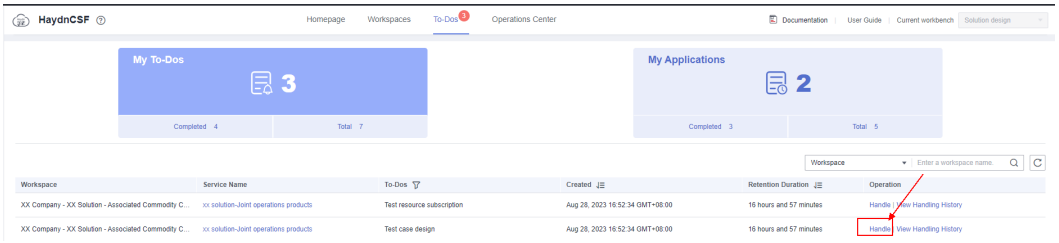
1.2.5 Designing Test Cases

A partner test engineer goes to the to-do list and handles the test case design items. Click the test case management module to create and import test cases. After the test cases are created, submit them to Huawei test engineers for review.

Procedure

1. Click **To-Dos** and click **Handle** in the row containing the target item.

   Figure 1-39 Handling a test case

2. Click **Function Test**. The test cases in the following figure are generated by using the **Wizard** mode.

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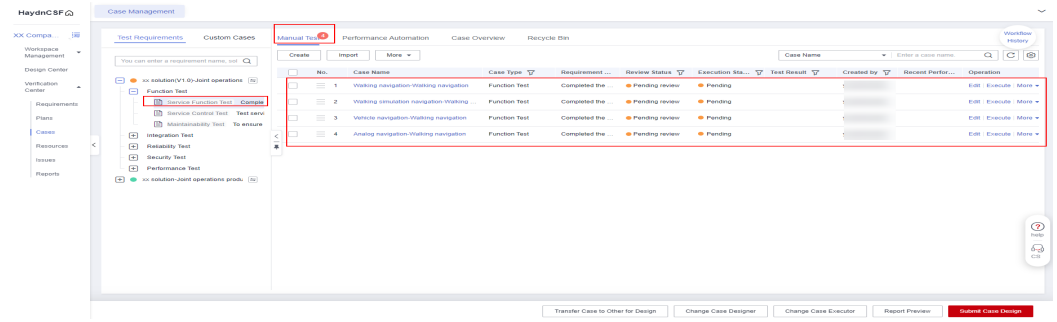
Figure 1-40 Case management page



NOTICE

To add a case designer, click **Change Case Designer** in the lower right corner of the case management page. (Prerequisite: The handler to be added must be in this workspace.)

In addition to the **Wizard** mode, you can also use either of the two methods to create cases.

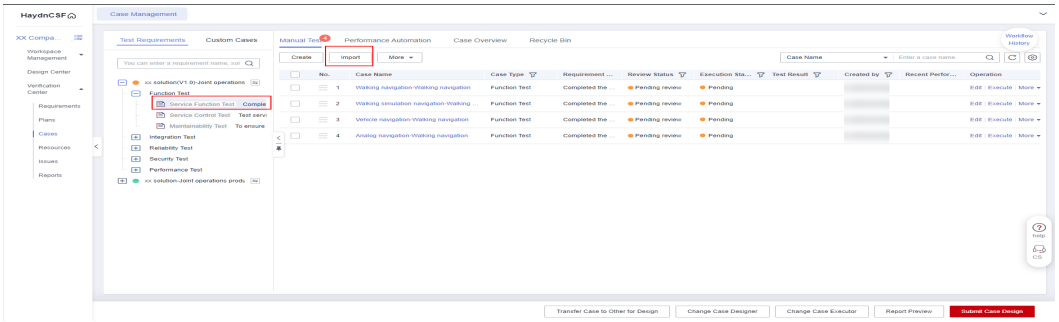
Method 1: Importing Cases Using a Template

Creating test cases by importing a test case template is mainly used for function test cases.

Procedure

1. Download a function test case template. Each test requirement requires a case template. The requirements and description of each test case must be the same as those automatically generated by the template.
2. Compile test cases in the test case template, and then click **Select File** to upload the test cases.
3. Click **Import** to import function test cases using the test case template.

Figure 1-41 Importing function cases 1



4. Click **Import**. The **Import Case** dialog box is displayed.
   - **Check for identical names**: The name of a test case must be unique. This option is selected by default.
   - **Download Case Template**: To import cases successfully, use the downloaded template.

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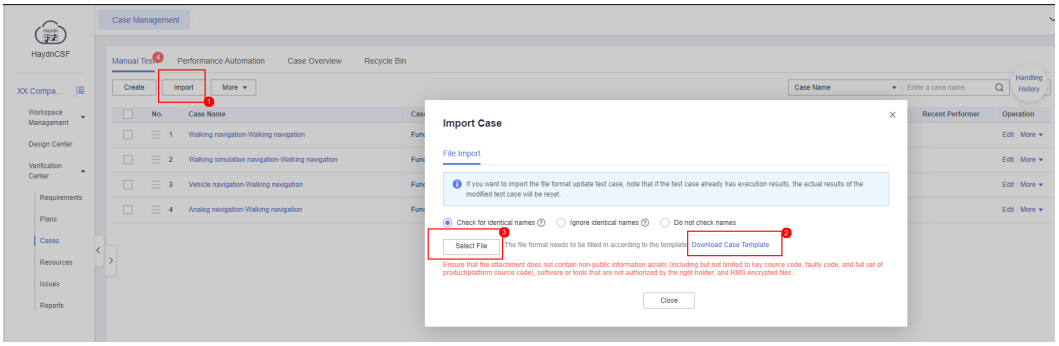
- **Select File**: After completing the case template, select the case template file and import the test cases written in the file.

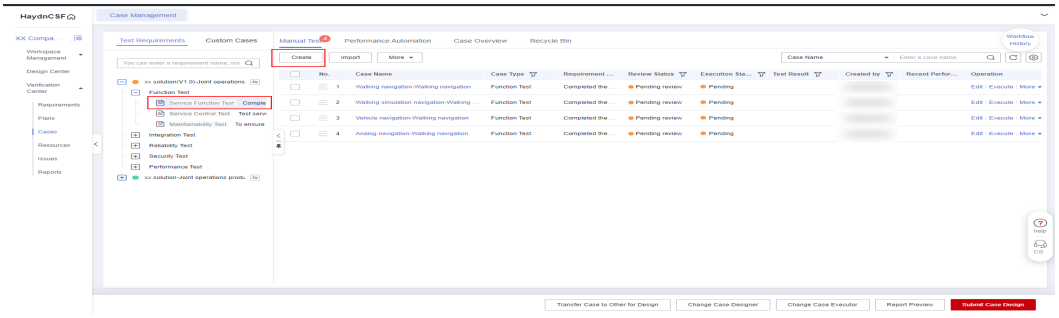
Figure 1-42 Importing function cases 2



Method 2: Creating a Test Case

1. Click **Create**.

Figure 1-43 Creating a test case



2. Input the case information.
   - **Requirement Description**: Create a case under the corresponding requirement.
   - **Case Name**: name of a test case. The format is *xx* (level-1 function name)-*xx* (level-2 function name)-*xx* (button name).
   - **Deployment Environment**: Only the deployment environment specified during solution creation can be selected from the drop-down list.
   - **Priority**: Select **High**, **Medium**, or **Low** from the drop-down list box.
   - **Description**: Describe the case. This parameter is optional.
   - **Prerequisites**: Enter the previous steps for executing the case.
   - **Step Description**: Enter the test procedure of the case.
   - **Expected Result**: Enter the expected result of the corresponding step.
   - **Add**: If there are many test steps, click **Add** to add steps and expected results.
   - **Attachments**: optional.

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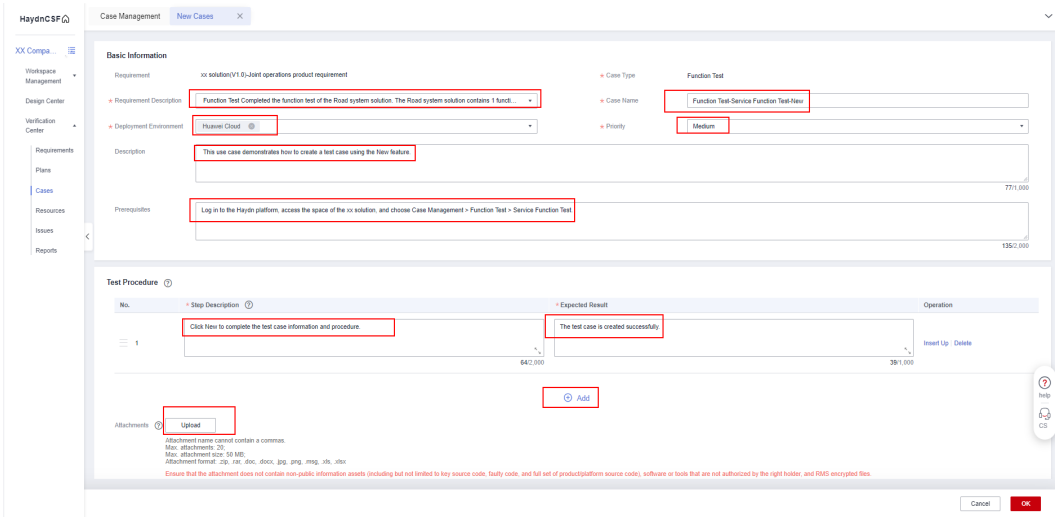
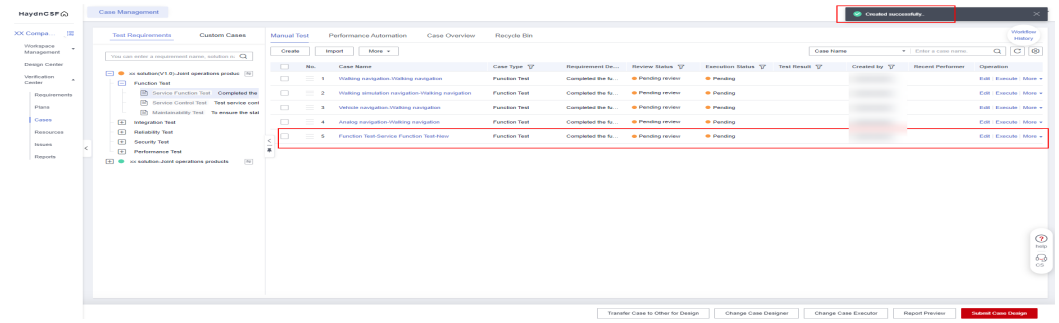
Figure 1-44 Inputting the case information



3. Click **OK**.

Figure 1-45 Successful creation

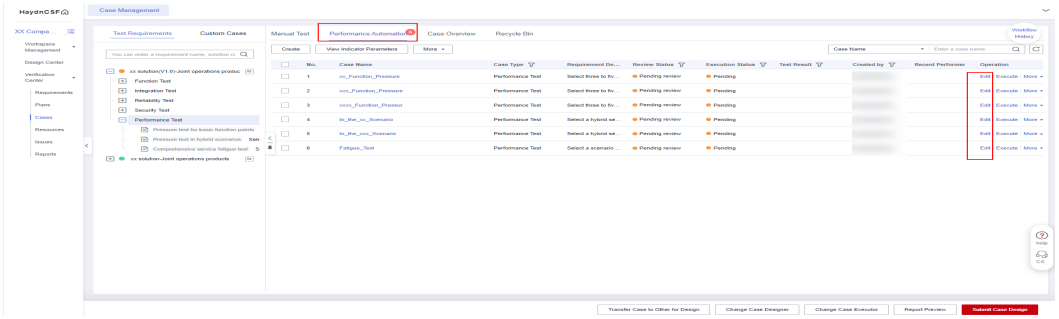


Editing a Performance Case

The names and descriptions of automatically generated performance test cases need to be modified based on the product pressure test scenario.

1. Click **Edit** to edit the case content.

Figure 1-46 Editing a performance case 1



2. Modify the placeholder data in the case name and description. You only need to modify the case name and description.
   - **Case Name**: Use the name of the scenario API to be tested.

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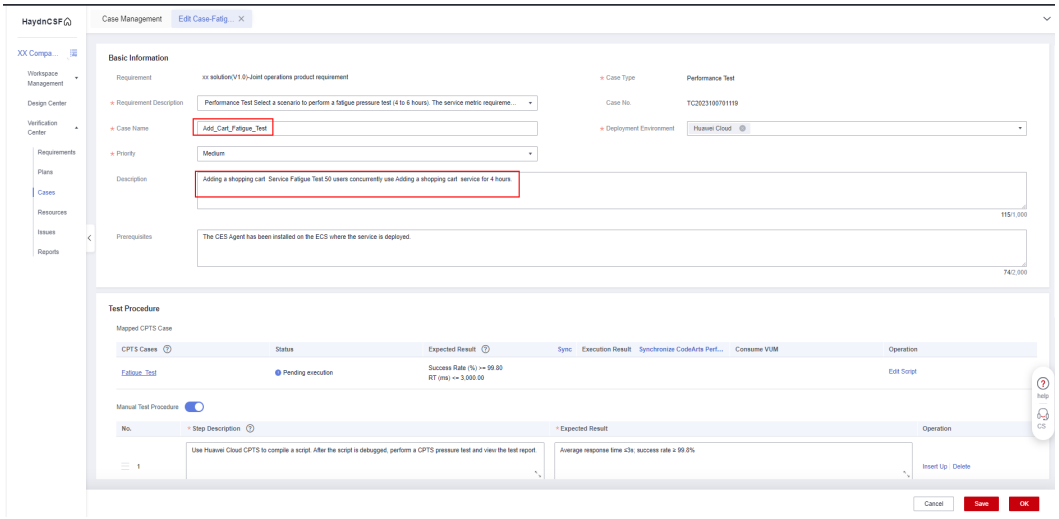
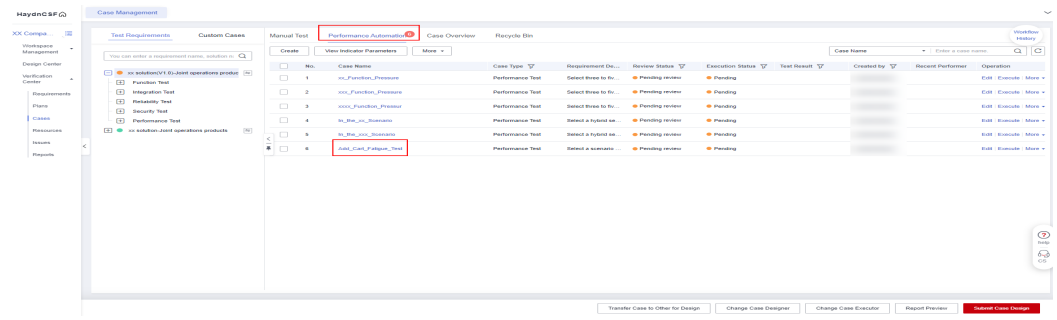
– **Description**: Change the number of concurrent requests. The following figure uses **50** as an example (the number of concurrent requests is evaluated based on the specifications of the selected cloud service) and the name of the scenario API to be tested.

Figure 1-47 Editing a performance case 2



3. The performance test case is edited. The performance test case name in the following figure is only for reference. Select the actual pressure test scenario name based on your system functions.

Figure 1-48 Modified performance case



Editing a Reliability Case

Currently, the imported case template contains all cases. The types of cloud services used by each partner are different. Therefore, you need to delete the cases that are not involved. (To avoid deletion by mistake, confirm with Huawei test engineers first.) If the cases to be executed are not in the case template, you can also create reliability cases.

The following figure shows the reliability test cases generated by using the **Wizard** mode.

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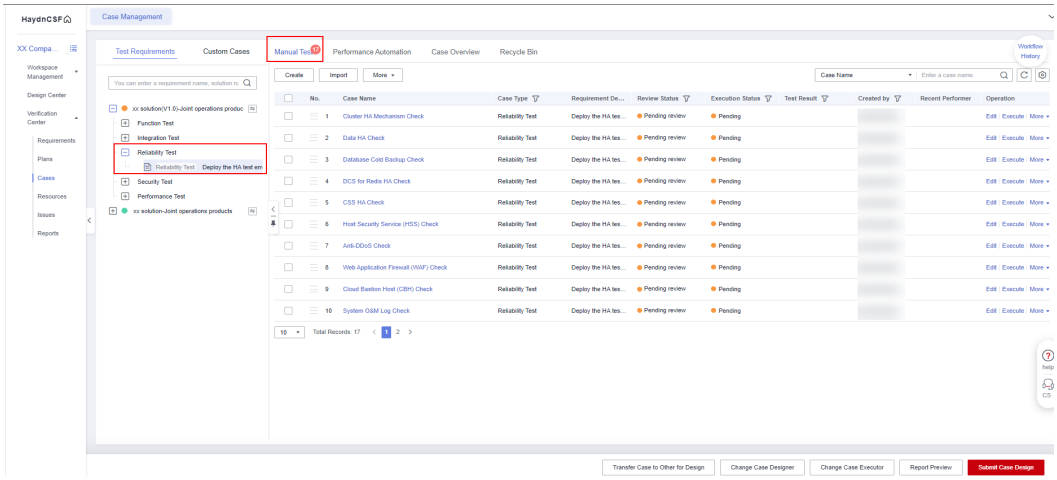
Figure 1-49 Reliability test cases generated by using the Wizard mode

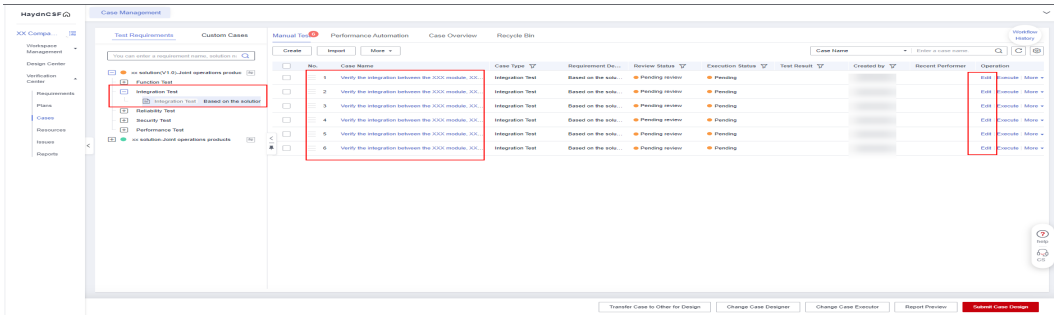


Editing an Integration Test Case

Currently, only one template integration case is imported for reference. The types of cloud services used by each partner are different, and the number of cloud services that require integration tests is also different. You are advised to contact Huawei test engineers to determine the cloud services that require integration tests.

The following table lists the integration test cases generated by using the **Wizard** mode. You can click **Edit** to modify the case name and placeholder data.

Figure 1-50 Integration test cases



NOTE

- Performance, reliability, and integration test cases can be automatically generated by using the **Wizard** mode. The generated test cases can be edited based on the actual product scenario.
- The service control test, maintainability test, and security test cases do not need to be modified.

Submitting Test Cases for Review

1. After creating test cases, submit them to Huawei test engineers for review.

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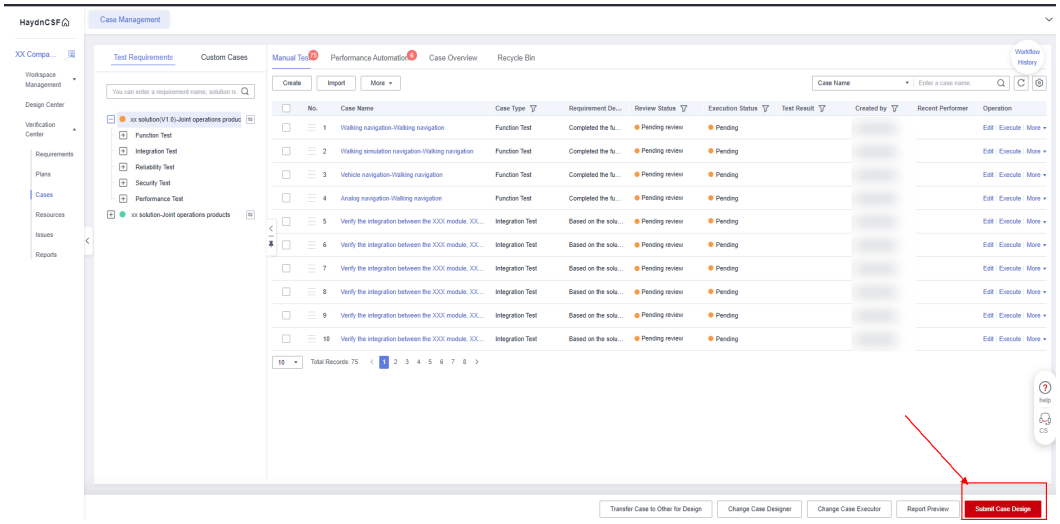
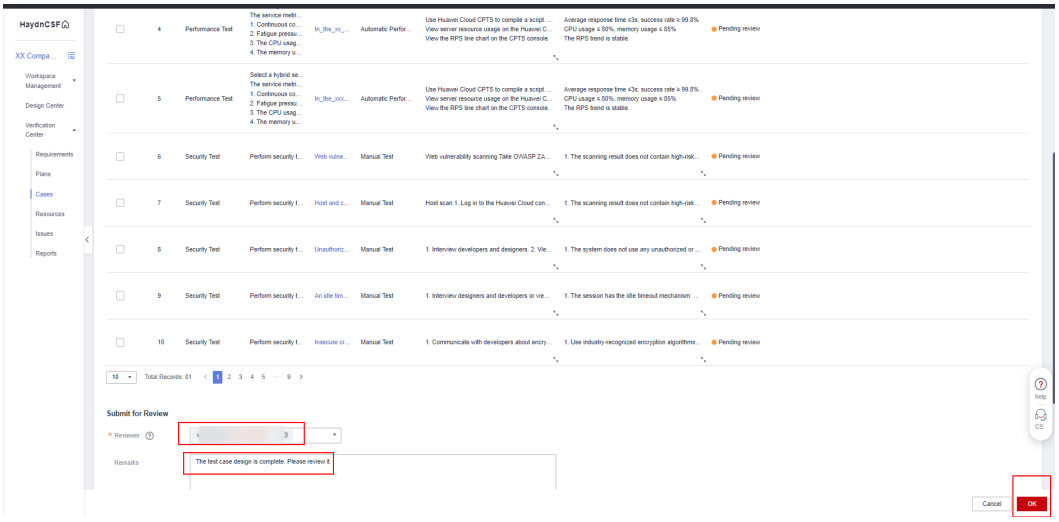
Figure 1-51 Submitting a test case design



2. Select a reviewer.
   - **Reviewer**: Select a Huawei test engineer.
   - **Remarks**: Optional.

Figure 1-52 Submitting a test case design for review



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NOTE

Test Case Requirements

1. Function test cases (including tests on the service function, service control, and maintainability)

   a. Service function test requirements:

   - Test cases must cover all level-2 functions in the function list.
   - Operation steps are required for test cases.
   - End to end test cases are required for main scenarios.
   - If hardware products are involved, provide the function description and quality test report of the hardware products.

   b. Service control test, including the following three test cases:

   - A notification is sent when the license is about to expire.
   - The system is unavailable when the license expires.
   - After the license is renewed, the system can be used normally and the original data is not deleted.

   c. Maintainability test, including the following four test cases:

   - Centralized event management platform check
   - Log management system check
   - Product monitoring and alarm management system check
   - SSL certificate expiration alarm check

2. Performance test requirements for the following scenarios:
   - Basic core scenario (three to five test cases, 5 to 10 minutes pressure test for each test case)
   - Hybrid scenario (two to four test cases, 0.5 to 2 hours pressure test for each test case)
   - Fatigue pressure test scenario (one test case, four to six hours pressure test a test case)
3. Security test requirements:

   34 manual security test cases

   Three tool scanning cases: VSS-web scanning test, VSS-host scanning, and VSS-binary scanning.
4. Reliability test cases: Analyze the solution integration architecture, create reliability test requirements, and test the service HA at each fault point of the product.
5. Integration test: Based on the solution architecture diagram, test the connectivity of the integration path of Huawei Cloud services involved in the solution to ensure that the service flows and data flows in core service scenarios can be streamlined with the dependent Huawei Cloud services in an end-to-end manner.

Reviewing Test Cases

1. Huawei test engineers review the test cases imported by partners. If the test cases meet the requirements, the test cases are passed. Otherwise, the test cases are rejected.
2. **Transfer to Others**: The current reviewer can transfer the review task to another person in the workspace.

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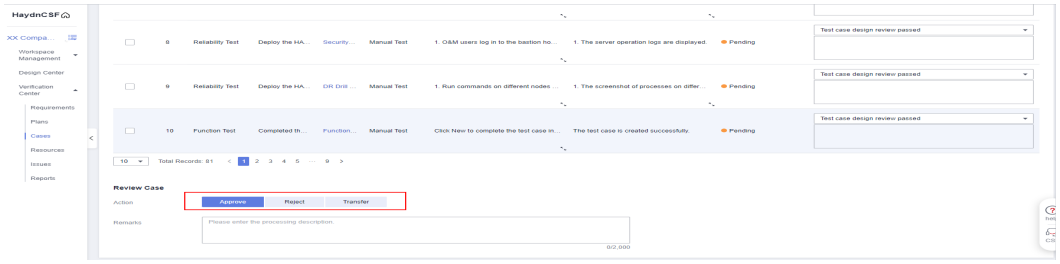
Figure 1-53 Reviewing test cases



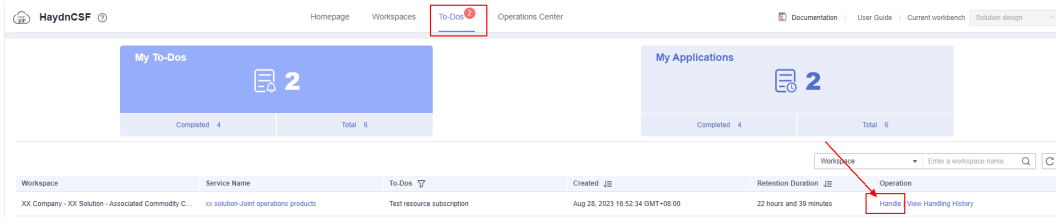
1.2.6 Enabling Test Resources

Currently, the main function of enabling test resources is to enter the application information and technology stack information on the **Resource Management** page. This process does not enable the actual resources.

Procedure

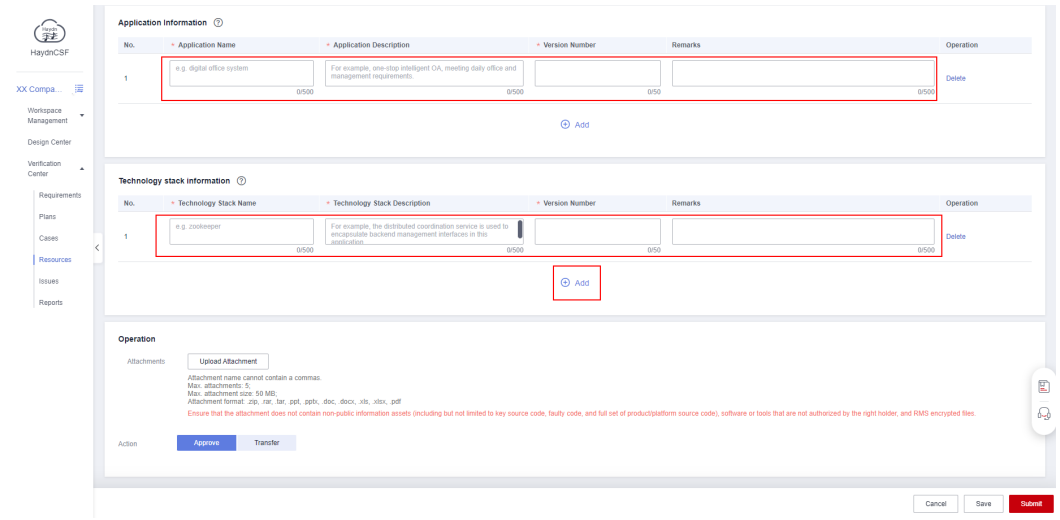
1. Go to the **To-Dos** list and click **Handle** to enable resources and deploy applications.

Figure 1-54 Enabling resources



2. After enabling resources, fill in **Application Information** (including the application name, application description, and version number) and **Technology stack information** (including the technology stack name, technology stack description, and version number).

Figure 1-55 Completing resource information



3. After filling in the information, click **Submit**.

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1.2.7 Performing the Certification Test

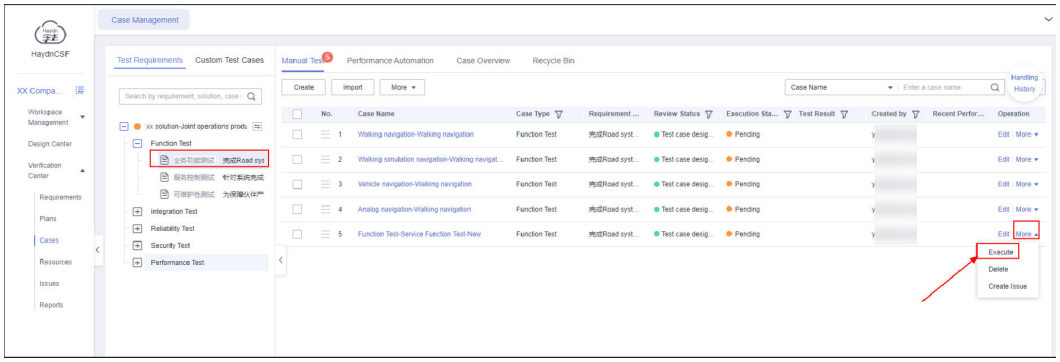
Partner test engineers perform the test by referring to the test cases on the HaydnCSF console, record the test results on the HaydnCSF console, and resolve all known issues before submitting the report for review.

Executing the Test

Procedure

1. Log in to the HaydnCSF console as a partner test engineer, click the name of the workspace automatically created in the seller center to enter the workspace, and choose **Verification Center** > **Cases**. In the displayed page, choose **More** > **Execute** in the **Operation** column of the target test case to execute the test case.

   Figure 1-56 Entrance for executing test cases

NOTICE

To change or add a case executor, click **Change Case Executor** in the lower right corner of the case management page. (Prerequisite: The added handler must be in the workspace.)

2. Execute a test case. The following uses the service function test case as an example.
   - **Actual Result**: To prove the result, a screenshot and text description are required. Generally, the text describes the screenshot, which helps the report reviewer understand the screenshot. You can directly paste the screenshot in the **Actual Result** text box. Provide the corresponding screenshot according to your test case procedure.
   - **Remarks**: Description of the step execution result. This parameter is optional.
   - **Attachments**: Upload the file that describes the execution result. If there are multiple screenshots of the execution result, save all the screenshots in a single document and upload it as an attachment.
   - **Case Status**: Select **Pending**, **Executing**, or **Completed** as required.
   - **Execution Result**: Select **Passed**, **Failed**, **N/A**, and **Pass conditionally** as required.

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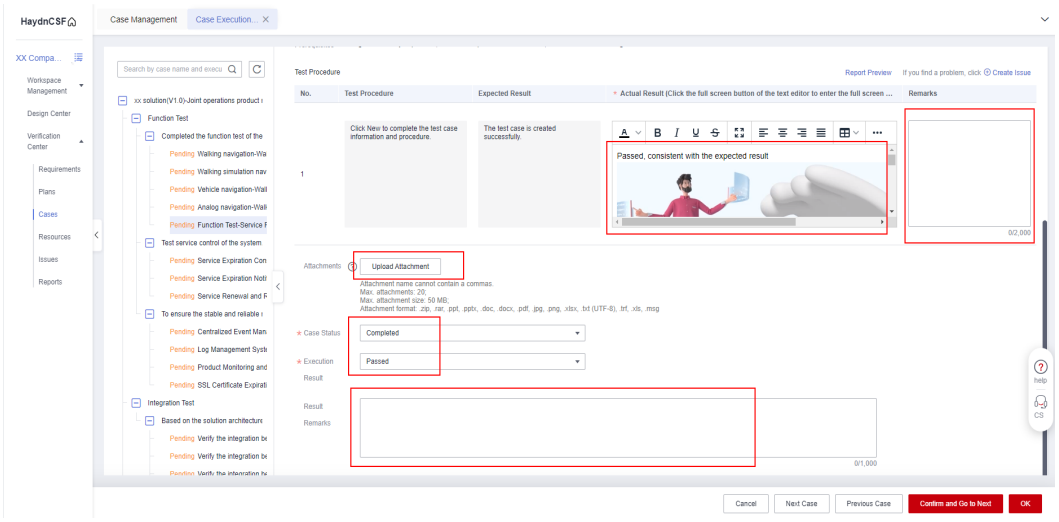
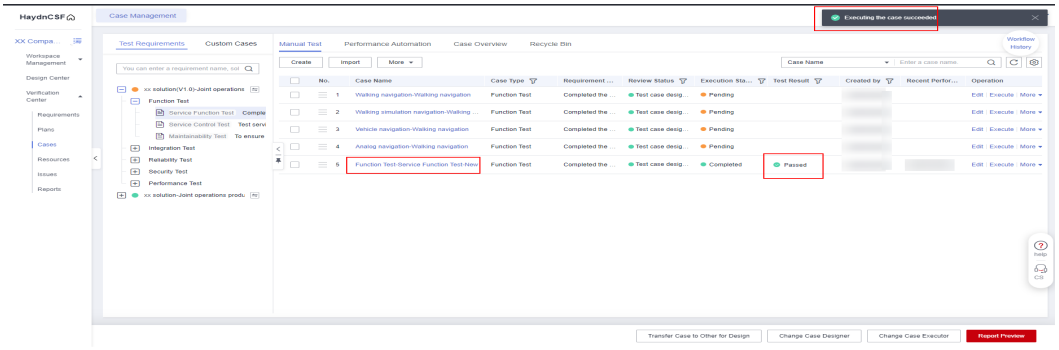
– **Result Remarks**: Enter the description of the test case execution result. This parameter is optional.

Figure 1-57 Service function test execution example



3. Click **OK**. Return to the case list. You can see that the test result of the case is **Passed**.

Figure 1-58 Test case execution succeeded



4. For details about automatic operations of performance test cases, see **Performance Automation Test Cases**.

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5. **CAUTION**

   The requirements for screenshots of execution results of different test case types are as follows:

   - Function test case: Screenshots must be uploaded for all function test cases, and upload the latest required material.
   - Performance automation test case: There are automatic test cases and manual test cases. After automatic test cases are executed, manual test cases are executed. Provide screenshots and text description by referring to the manual test procedure.
   - Security test case: Upload a screenshot and fill in the screenshot description for each security case. For a case that is not involved, select **N/A** for the execution result, explain why the case is not involved in the result remarks, and upload an email as an attachment. The tool scanning must meet the security requirements.
   - Reliability test case: Upload a screenshot of the actual result of each reliability test case and upload the latest reliability checklist.

Handling Test Case-Related Issues

1. If any issue is found during case execution, choose **More** > **Create Issue** in the **Operation** column of the target test case to access the **Issue Management** page and create issues or requirements.

Figure 1-59 Entry for creating issues

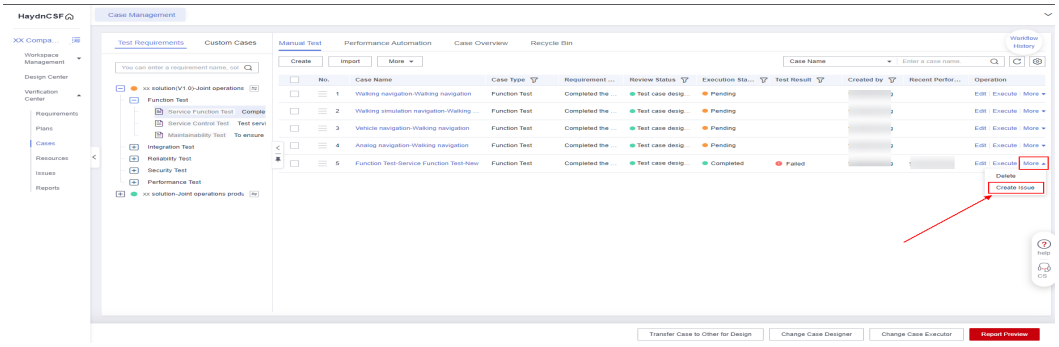

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Figure 1-60 Creating an issue

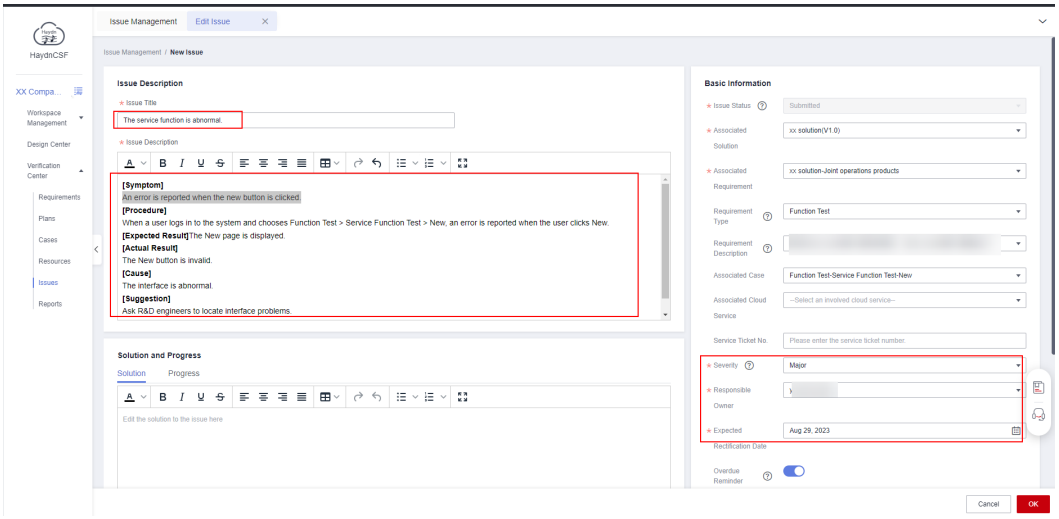
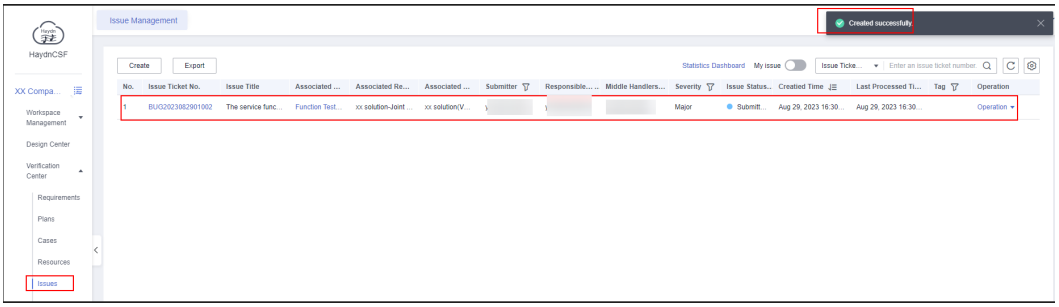


Figure 1-61 Issue list



2. Handle issues or requirements during verification.

   After an issue is resolved, partner test engineers go to the HaydnCSF console, choose **Workspace Management** > **Space Name** > **Verification Center** > **Issues** > **Edit**, and handle the issue or requirement.

Figure 1-62 Entry for handling issues

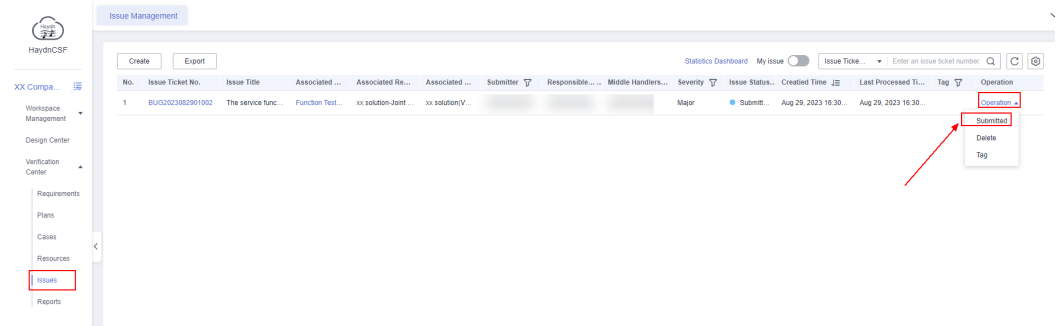


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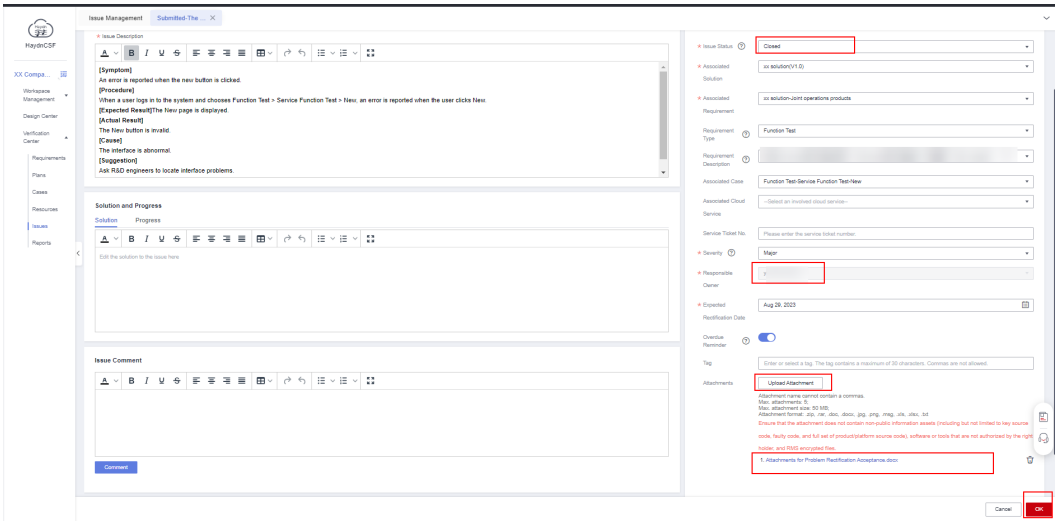
Figure 1-63 Example of handling an issue



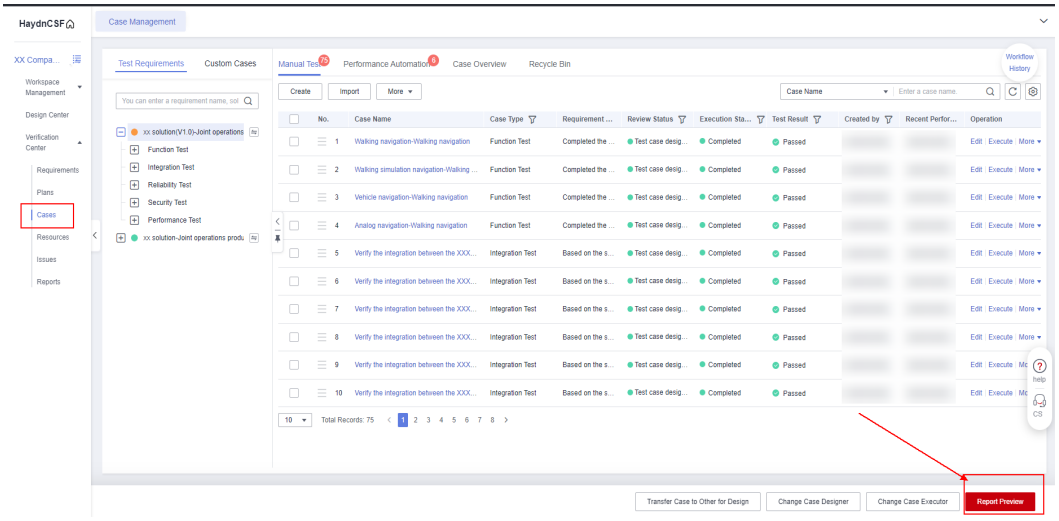
1.2.8 Submitting a Report for Review

After all test cases are executed and all issues are closed, the partner test engineer submits a report for review.

Procedure

1. Log in to the HaydnCSF console and choose **Verification Center** > **Cases**. On the **Case Management** page that is displayed, click **Report Preview** in the lower right corner.

Figure 1-64 Entry for submitting a test report



2. Click **Report Preview** and scroll down to the report preview page shown in the following figure.
   - **Test Report Name**: This parameter is automatically generated by HaydnCSF.
   - **Test Summary**: Click **Auto-Generate**. The test summary is automatically generated. You can edit the test summary.

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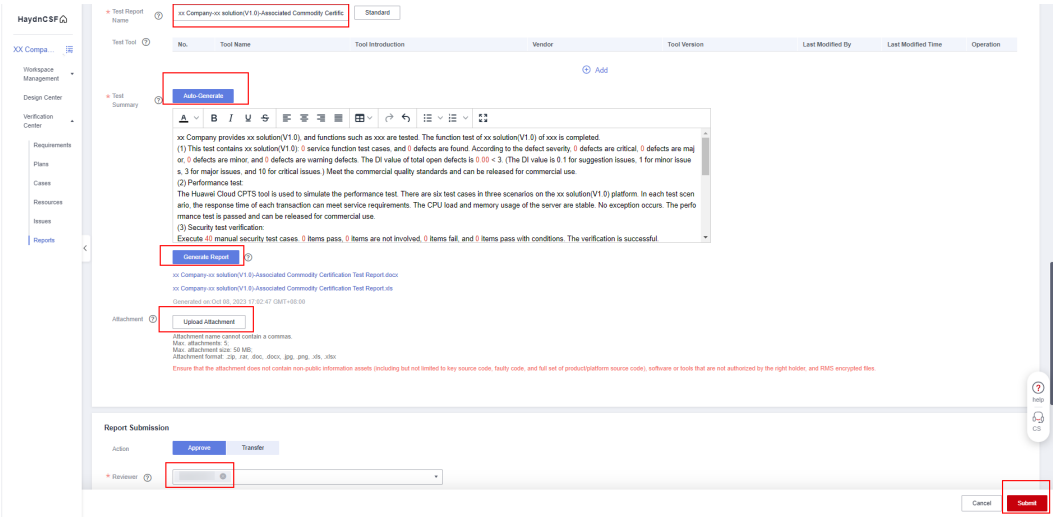
- **Generate Report**: A test report is automatically generated, including the test summary. Click the generated report in Word or Excel to download and view the report.
- **Attachment**: The uploaded attachment will be placed in the generated report. This parameter is optional.
- **Reviewer**: Select a Huawei test engineer as the report reviewer according to the requirements of Huawei test engineers.
- **Submit**: The report will be submitted to the reviewer.

Figure 1-65 Report preview



NOTE

Huawei will record the reviewed issues on HaydnCSF so that partners can handle them in a timely manner. The project manager can review and approve the report only after all issues are closed.

3. Huawei test engineers review the report.

   A Huawei test engineer logs in to the HaydnCSF console and click the workspace name to enter the workspace. Choose **Verification Center** > **Reports**. On the report list, click **Review** in the **Operation** column of the target report. The test report review page is displayed.

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Figure 1-66 Entry for reviewing a test report

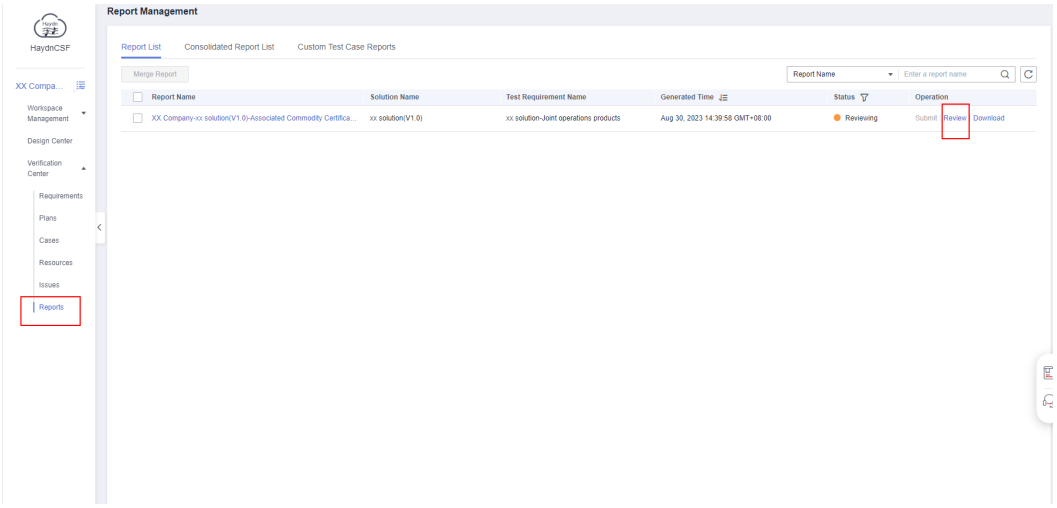
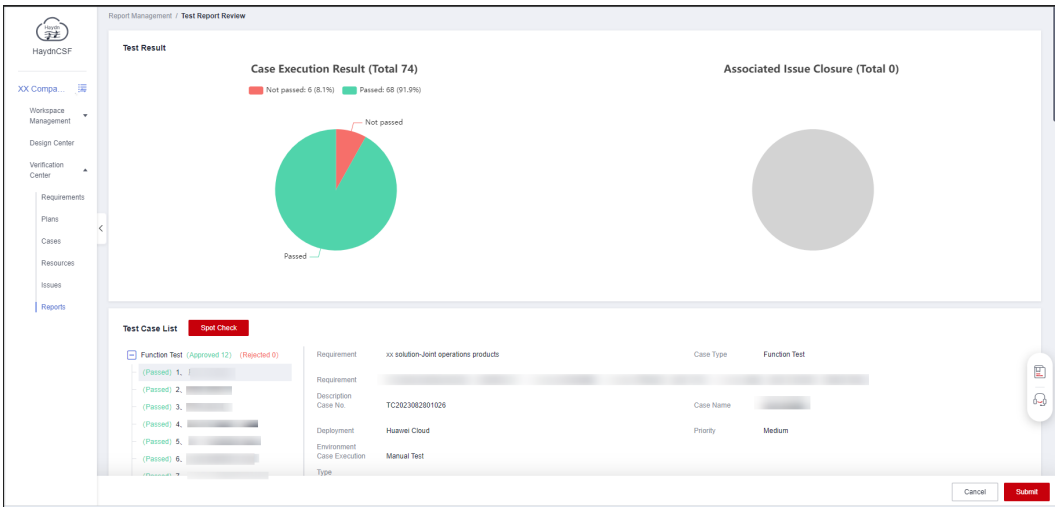


Figure 1-67 Reviewing a test report



a. Find the report download link and download the test report for reviewing.

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Figure 1-68 Downloading a test report in Word

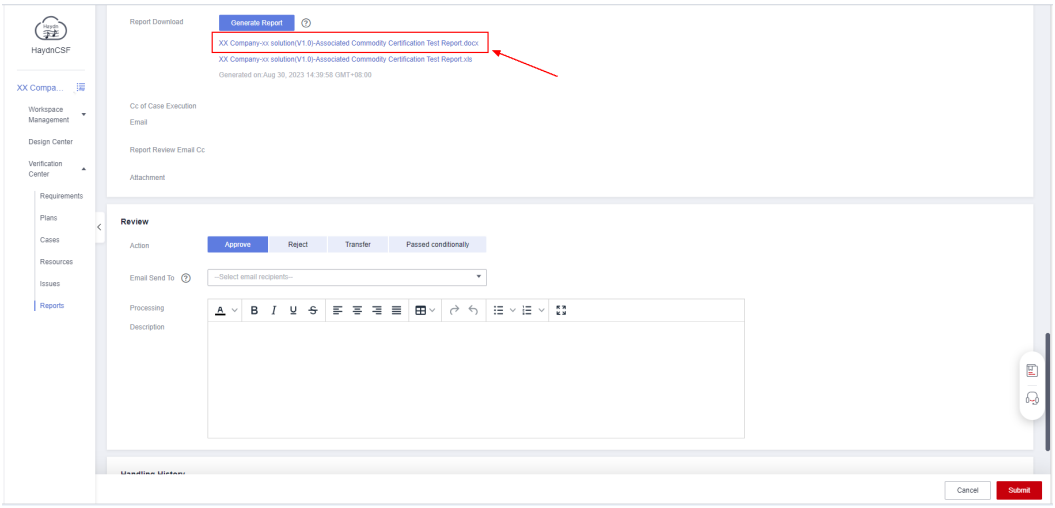
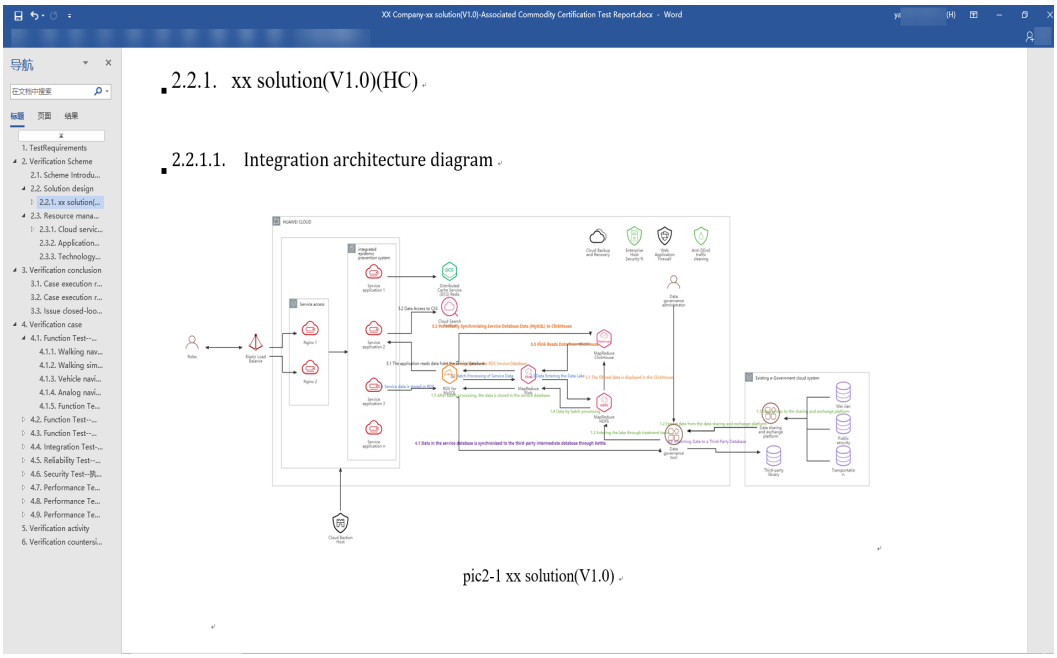


Figure 1-69 Example



b. After the review is complete, specify the review result and click **Submit** to complete the report review.

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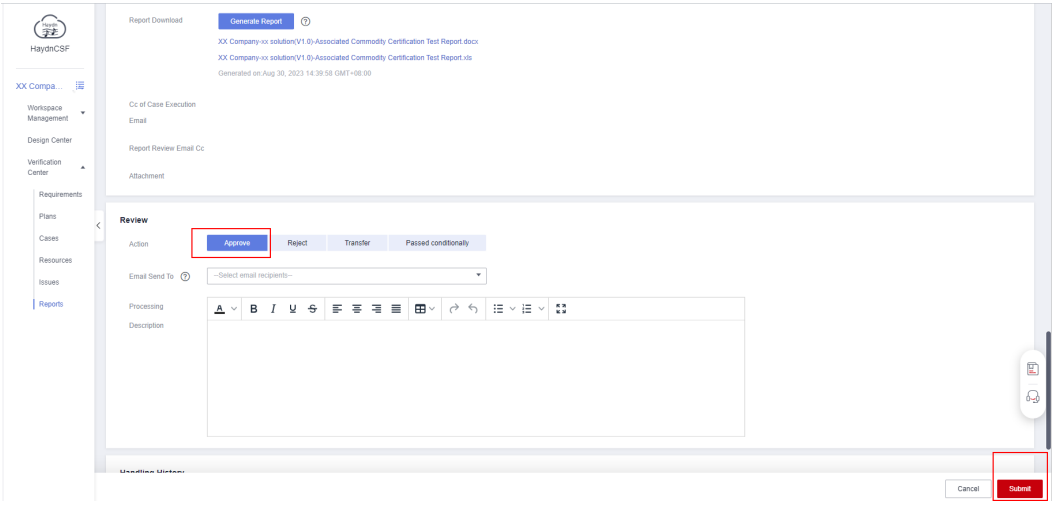
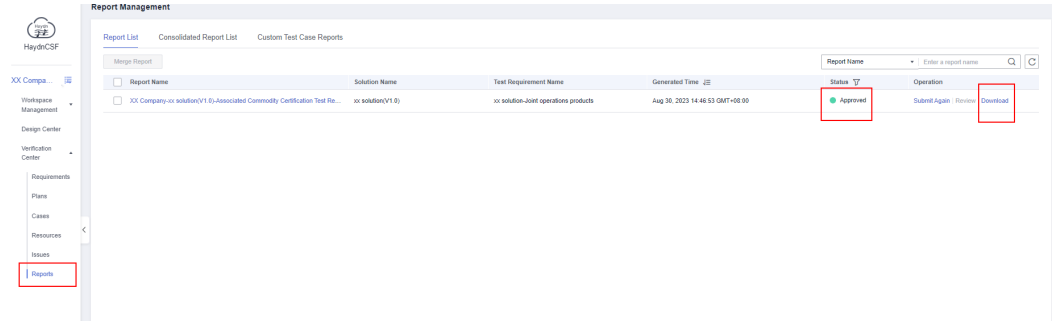
Figure 1-70 Reviewing a test report



c. After the report is approved, you can view the approval status of the report on the **Report Management** page. You can also click **Download** to download the approved report.

Figure 1-71 Viewing an approved report



1.3 FAQs

1. **How long does it take to complete the project certification test?**

   Partners are responsible for the certification test, and Huawei test engineers are responsible for reviewing and supporting the solution. To complete the test as soon as possible, partners should assign at least one test engineer and two developers for a product. (Developers are mainly responsible for fixing vulnerabilities after security scanning.) With sufficient manpower, a task can be completed within 13 working days.

2. **Can the known issues be handled after a product is released?**

   No. In principle, all test issues, especially security vulnerabilities that impact the Huawei product security baseline, must be closed before a product is released.

3. **Can other types of Huawei test reports be reused?**

   Generally, if the function list and architecture diagram of the previous certification test report are consistent with those of the product to be released in this certification test, the report can be reused. If new functions are added or the contents that are not covered in the previous test report are involved,

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you need to perform supplementary tests. For details, contact Huawei test engineers.

4. **The SSL certificate expiration notification needs to be configured for maintainability test cases. If the Cloud Certificate Manager (CCM) service of Huawei Cloud is used, how do I configure the SSL certificate expiration notification?**

   See **How Do I Configure a Certificate Expiration Notification?**

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