Solution 1.0.0 Scheduled ECS Startup&Shutdown

 Issue
 01

 Date
 2024-04-01





HUAWEI TECHNOLOGIES CO., LTD.

Copyright © Huawei Technologies Co., Ltd. 2024. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

Trademarks and Permissions

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

Notice

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

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

Security Declaration

Vulnerability

Huawei's regulations on product vulnerability management are subject to the *Vul. Response Process.* For details about this process, visit the following web page:

https://www.huawei.com/en/psirt/vul-response-process

For vulnerability information, enterprise customers can visit the following web page: <u>https://securitybulletin.huawei.com/enterprise/en/security-advisory</u>

Contents

| 1 Solution Overview | 1 |
|------------------------------|----|
| 2 Resource and Cost Planning | 3 |
| 3 Procedure | 4 |
| 3.1 Preparations | |
| 3.2 Quick Deployment | 11 |
| 3.3 Getting Started | |
| 3.4 Quick Uninstallation | |
| 4 Appendix | 19 |
| 5 Change History | 20 |

Solution Overview

Scenarios

This solution uses a FunctionGraph timer trigger to periodically start and stop Elastic Cloud Servers (ECSs). You can stop unused ECSs, and later start them when needed to reduce operations costs.

Solution Architecture

This solution uses Huawei Cloud FunctionGraph to periodically start and stop ECSs. This solution architecture is illustrated below.



Figure 1-1 Architecture

This solution will:

• Create two functions in **FunctionGraph** to call the ECS APIs for periodically starting and stopping ECSs.

- Create a **timer** to periodically invoke the function code.
- Create an agency in IAM to delegate FunctionGraph to access ECS in the relevant region.

Advantages

This solution has the following advantages:

• Serverless

The serverless architecture frees you from underlying resource O&M and availability and scalability issues.

- Easy deployment You can schedule ECS startup and shutdown in just a few clicks.
- Customization based on open source

This solution is open-source and free for commercial use. You can also make custom development according to the practical requirements.

Constraints

 Before deploying this solution, ensure that you have an account with access to the target region and sufficient balance for purchasing the resources listed in 2 Resource and Cost Planning.

2 Resource and Cost Planning

This solution deploys the resources listed in the following table. The costs are only estimates and may differ from the final prices. For details, see **pricing details**.

| Huawei Cloud Service | Example Configuration | Monthly Cost |
|-------------------------|---|--------------|
| FunctionGraph | Region: AP-Singapore Product: FunctionGraph Pricing tier: ≤ 1 million requests: \$0 USD per 1 million requests > 1 million requests: \$0.2 USD per 1 million requests Metering duration: ≤ 400,000 GB-seconds: \$0 USD per GB-second > 400,000 GB-seconds: \$0.0001667 USD per GB-second | \$0 USD |
| Total | | \$0 USD |

Table 2-1 Resource and cost planning

3_{Procedure}

- 3.1 Preparations
- 3.2 Quick Deployment
- 3.3 Getting Started
- 3.4 Quick Uninstallation

3.1 Preparations

Creating the rf_admin_trust Agency

Step 1 Log in to Huawei Cloud official website, open the **console**, hover over the account name, and choose **Identity and Access Management**.

Figure 3-1 Console page





Figure 3-2 Identity and Access Management

Step 2 Choose **Agencies** in the left navigation pane and search for the **rf_admin_trust** agency.

Figure 3-3 Agency list

| IAM | Agencies 💿 | | | | | | | |
|---------------------------|----------------------------------|----------------------|--------------------|---------------------------------|------------------|-----------------------------|--|--|
| Users | Delete Agencies available for cr | ation: 36 | | All | ▼ rf_admin_trust | X Q | | |
| User Groups | Agency Name/ID ↓≣ | Delegated Party J≣ | Validity Period ↓Ξ | Created 4F | Description ↓Ξ | Operation | | |
| Permissions • Projects | rt_edmin_trust | Cloud service RFS | Unimited | Mar 13, 2023 14:49:16 GMT+08:00 | - | Authorize Modify Delete | | |
| Agencies | | | | | | | | |
| Identity Providers | | | | | | | | |
| Security Settings | | | | | | | | |
| | | | | | | | | |

- If the agency is found, skip the following steps.
- If the agency is not found, perform the following steps to create it.
- Step 3 Click Create Agency in the upper right corner of the page. On the displayed page, enter rf_admin_trust for Agency Name, select Cloud service for Agency Type, select RFS for Cloud Service, and click Next.

Figure 3-4 Creating an agency

| encies / Create Agen | су |
|----------------------|---|
| ★ Agency Name | rf_admin_trust |
| ★ Agency Type | Account Delegate another HUAWEI CLOUD account to perform operations on your resources Cloud service Delegate a cloud service to access your resources in other cloud services. |
| * Cloud Service | RFS |
| * Validity Period | Unlimited |
| Description | Enter a brief description. |
| | 0/255 |
| | Next Cancel |

Step 4 Search for **Tenant Administrator**, select it in the search results, and click **Next**.

Figure 3-5 Selecting a policy

| Steled PaleyRide (2) Steled Scape (3) Frish | | | | | | | | |
|--|--------|--|--|--|--|--|--|--|
| Assign selected permissions to if jacimin_trust. Create P | Policy | | | | | | | |
| Vers Selvide (1) Copy Permissions from Another Project All services + All services + All services + X (| Q | | | | | | | |
| PolicyRole Name Type | | | | | | | | |
| DME AdministratorAccess Bootomicolds Data Mode Expine Insura doministrator with MI permissions. System-defined policy | | | | | | | | |
| Tenant Administrator (Exclude MM) System-defined role | | | | | | | | |
| Cis Tenard Admin System Service Tenard Administrator, can manage multiple CS users System Service Tenard Administrator, can manage multiple CS users | | | | | | | | |

Step 5 Select **All resources** and click **OK**.

Figure 3-6 Selecting a scope

| < Authorize Agency | |
|--|--|
| Select Policy/Role 2 Select Scope 3 Finish | |
| | |
| 1 The following are recommended scopes for the permissions you selected. Select the desired scope requiring minimum authorization. | |
| Scope | |
| All resources | |
| IAM users will be able to use all resources, including those in enterprise projects, region-specific projects, and global services under your account based on assigned permissions. | |
| Show More | |

Step 6 Check that the **rf_admin_trust** agency is displayed in the agency list.

| Figure 3-7 Agency list | | | | | | | | | | | |
|--|---------------|----|-------------------------------|-----------------------|--------------------|---------------------------------|----------------------------|-----------------------------|-----|--|--|
| IAM | | Ag | Agencies 💮 | | | | | | | | |
| Users | | | Delete Agencies available for | creation: 32 | | | Al | ✓ rf_admin_trust | X Q | | |
| User Grou | (pe | | Agency NameID ↓≣ | Delegated Party ↓≡ | Validity Period ↓≡ | Created 🐙 | Description J≣ | Operation | | | |
| Permission | Permissions v | | rt_admin_trust | Account op_svc_IAC | Unlimited | Jan 16, 2023 17:57:41 GMT+08:00 | Created by RF, Not delete. | Authorize Modily Delete | | | |
| Agencies | | | | | | | | | | | |
| Identity Pro | oviders | | | | | | | | | | |
| Security Sec | lettings | | | | | | | | | | |

----End

Creating the IAM Agency Management FullAccess Policy

Step 1 Choose Identity and Access Management.



Figure 3-8 Identity and Access Management

Step 2 Choose **Permissions** > **Authorization**, enter **IAM Agency Management FullAccess** in the search box, and check whether this policy exists.

Figure 3-9 Permission list

| IAM | Authorization 📀 | | | | | | | | |
|---------------|--|------------------------|-------------------------|--|--------------------------|--------------------------|--------|----------------|-----------------------|
| Users | Delete Authorization records (IAM projects): 1; (enterprise projects): 0 | | | | Policy/Role name : IAM A | rch by policy/role name. | X Q By | IAM Project | By Enterprise Project |
| User Groups | Policy/Role | P | Policy/Role Description | Project [Region] | Principal | Principal Description | | Principal Type | Operation |
| Authorization | IAM Agency M | anagement FullAccess - | - | All resources [Existing and future projects] | rf_edmin_trust | - | | Agency | Delete |

- If the policy is found, you do not need to create it.
- If the policy is not found, create it.

Step 3 Choose **Permissions** > **Policies/Roles**, and click **Create Custom Policy**.

Figure 3-10 Clicking Create Custom Policy

| Polic | Policies/Roles ⑦ | | | | | | | | |
|-------|--|------|--------------------|----------------|---|-----------|--|--|--|
| | Delete Custom policies available for creation: 179 | | All policies/roles | ▼ All services | Enter a policy name, role name, or description. Q | | | | |
| | Policy/Role Name | Туре | Description | | | Operation | | | |
| | | | | | | | | | |

Step 4 Enter policy name **IAM Agency Management FullAccess**, select **JSON**, enter the following JSON code in the **Policy Content** text box, and click **OK**.

Figure 3-11 Creating a custom policy

| ★ Policy Name | IAM Agency Manage | ment FullAccess |] | |
|--|---|---|--|-------|
| Policy View | Visual editor | JSON | | |
| * Policy Content | 1 ▼ [4] "Versic 2 × "State 4 ▼ { 5 × 6 7 × 8 9 9 10 11 12 13 14 15 16 17 17 18 19 20 21 22 23 24 25 Enter a brief descript | on": "1.1", ment": ["Effect": "Allow", "Action": ["iam:permission "iam:permission "iam:permission "iam:permission "iam:permission "iam:permission "iam:permission "iam:permission "iam:permission "iam:permission "iam:permission "iam:permission "iam:permission "iam:permission "iam:permission "iam:permission "iam:permission] licy/Role | <pre>updateAgency", ns:listRolesForAgencyOnDomain", ns:revokeRoleFromAgencyOnDomain", ns:listRolesForAgency", ns:checkRoleForAgencyUnProject", tRoles", deleteAgency", ns:checkRoleForAgencyUnProject", ns:checkRoleForAgencyUnDomain", listAgencies", ns:grantRoleToAgencyUnDomain", ns:revokeRoleFromAgencyUnProject", segrantRoleToAgency", ns:grantRoleToAgency", ns:grantRoleToAgencyUnProject", ns:revokeRoleFromAgency"</pre> | |
| Scope | Global services | ICEI | | 0/256 |
| { "Version": "1.1" "Statement": [{ "Action": ["iamag "iamag "iamag "iamag "iamag "iamag "iamag "iamag "iamag "iamag "iamag "iamag | [gencies:createAgen gencies:listAgencie gencies:getAgency gencies:deleteAgen gencies:updateAge ermissions:revokef ermissions:revokef ermissions:grantRo ermissions:grantRo ermissions:grantRo | ncy", 25", ncy", 2ncy", RoleFromAgencyOn RoleFromAgencyOn RoleFromAgencyOn DeToAgencyOnProj DeToAgency", | ıProject", ıDomain", nain", ect", | |



Step 5 If no error message is displayed, the **IAM Agency Management FullAccess** policy is successfully created.

----End

Assigning the IAM Agency Management FullAccess Policy to Agency rf_admin_trust



Intl-English

Basic Information

Security Settings

My Credentials

Identity and Access Management

Switch Role

Tag Management

Operation Log

Figure 3-12 Identity and Access Management

Step 2 Choose **Agencies** in the left navigation pane and select the **rf_admin_trust** agency.

Figure 3-13 Agency list

| | Agencies ③ | gencies 🕥 | | | | | |
|----------------------------------|------------------------------------|----------------------|--------------------|---------------------------------|----------------------------|-----------------------------|--|
| rs | Delete Agencies available for crea | tion: 31 | All | rf_admin_trust | X Q | | |
| ser Groups | Agency Name/ID J⊟ | Delegated Party JΞ | Validity Period ↓Ξ | Created 4F | Description ↓Ξ | Operation | |
| rmissions • ojects | rf_admin_trust | Cloud service RFS | Unlimited | Jan 16, 2023 17:57:41 GMT+08:00 | Created by RF, Not delete. | Authorize Modify Delete | |
| encies | | | | | | | |
| ntity Providers | | | | | | | |
| curity Settings | | | | | | | |

Step 3 Click the **Permissions** tab and click **Authorize**.

Figure 3-14 Permissions

| IAM | Agencies / rf_admin_trust | | | | | | |
|--------------------|-------------------------------|--|-----------------------------|----------------------------|-------------------------------|----------------|-----------------------|
| Users | Basic Information Permissions | | | | | | |
| User Groups | Delete Authorize Autho | rization records (IAM projects): 6; (enterprise pr | ojects): 0 | Agency name: rf_admin_t | Search by policy/role name. Q | By IAM Project | By Enterprise Project |
| Permissions - | Policy/Role | Policy/Role Description | Project [Region] | Principal | Principal Description | Principal Ty | pe Operation |
| Projects | IAM Agency Management FullA. | | All resources [Existing and | future proj rf_admin_trust | Created by RF, Not delete | Agency | Delete |
| Identity Providers | GaussDB FullAccess | Full permissions for GaussDB. | All resources [Existing and | future proj rf_admin_trust | Created by RF, Not delete | Agency | Delete |
| Security Settings | SMS FullAccess | Full permissions for Server Migration S | All resources [Existing and | future proj rf_admin_trust | Created by RF, Not delete | Agency | Delete |
| | iam | - | All resources [Existing and | future proj rf_admin_trust | Created by RF, Not delete | Agency | Delete |
| | IAM FullAccess | | All resources [Existing and | future proj rf_admin_trust | Created by RF, Not delete | Agency | Delete |
| | Tenant Administrator | Tenant Administrator (Exclude IAM) | All resources (Existing and | future proj rf_admin_trust | Created by RF, Not delete | Agency | Delete |

Step 4 Enter **IAM Agency Management FullAccess** in the search box, select the policy, click **Next**, and then click **OK**.

Figure 3-15 Configuring the IAM Agency Management FullAccess policy

| View Selected (1) Copy Permissions from Another Project | All policies/toles All services IAM Agency Management FullAcces |
|---|--|
| Policy/Role Name | Туре |
| IAM Agency Management FullAcces1 | Custom policy |
| LAM Agency Management FullAccess | Custom policy |
| | |
| | |
| | |
| | |
| | |
| | |

Step 5 Check that the **rf_admin_trust** agency has the **Tenant Administrator** and **IAM Agency Management FullAccess** permissions.

| Agencies / rf_admin_trust | | | | | | |
|------------------------------|--|--|---|---|---|--|
| Pasis Information Domissions | | | | | | |
| Basic mornauon Permissions | | | | | | |
| Delete Authorize Authori | zation records (IAM projects): 6; (enterprise | projects): 0 Ago | ncy name: rf_admin_t 🔘 S | earch by policy/role name. Q B | IAM Project By El | nterprise Project |
| Policy/Role | Policy/Role Description | Project [Region] | Principal | Principal Description | Principal Type | Operation |
| IAM Agency Management FullA | - | All resources (Existing and future) | proj rf_admin_trust | Created by RF, Not delete. | Agency | Delete |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| 4 | | | | | | |
| Tenant Administrator | Tenant Administrator (Exclude IAM) | All resources [Existing and future | proj rf_admin_trust | Created by RF, Not delete. | Agency | Delete |
| | Agendies / d_admin_trust Basic Information Permissions Dates Author Da | Agencies / rf_sdmin_trust Basic Information Permissions Deline Autorization records (AM projects) 6: (enterplace PolicyRole PolicyRole Description DelinyRole PolicyRole Conscription DelinyRol | Agencies / rf.gdmin_trust Basic Information Permissions Deline Authorization records (MM projects): 6. (enterprise projects): 0 Age DelicyRole PelicyRole Description Project [Region] AM Agency Management FultA All resources [Existing and Mare project] AM Agency Management FultA All resources [Existing and Mare project] Turant Administrator Turant Administrator (Exclude MM) All resources [Existing and Mare project] | Agencies / rf_edmin_trust Basic Information Permissions Delinit Autorization records (MM projects) 6, (enterprise projects) 0 Agency name: rf_edmin_1 = 0 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ | Agencies / rf_edmin_trust Basic Information Permissions Delete Autorization PolicyRole PolicyRole Description PolicyRole Description PolicyRole Description | Agencies / rf. sdmin, trust Basic Information Permissions Delete Authorization records (MM projects) 6. (enterprise projects) 8 Agency name: d_sdmin_1 |



----End

3.2 Quick Deployment

This section describes how to deploy the Scheduled Startup/Shutdown solution.

| Parameter | Тур е | Mand atory | Description | Default Value |
|------------------|------------|---------------|--|---|
| fuction_na me | strin g | Yes | Function name, which identifies a function and serves as the prefix of other resource names. It must be unique and can contain 2 to 48 characters, including letters, digits, underscores (_), and hyphens (-). Start with a letter. | scheduled_ power_on_ and_power _off_demo |
| ids | strin g | Yes | IDs of the ECSs to periodically start or stop. Separate the IDs with spaces. For example, id1 id2 . | Left blank |
| start_cron | strin g | Yes | Cron expression for periodical startup. Format: second minute hour day month week (optional). For example, 0 15 2 * * ? (executed at 02:15:00 every day), 0 30 8 ? * Mon (executed at 08:30:00 every Monday), 0 0 7 1 * ? (executed at 07:00:00 on the first day of every month). For details about how to set a cron expression, see Appendix: Cron Expressions for a Function Timer Trigger . | Left blank |

Table 3-1 Parameter description

| Parameter | Тур е | Mand atory | Description | Default Value |
|-----------|------------|---------------|---|------------------|
| stop_cron | strin g | Yes | Cron expression for periodical shutdown. Format: second minute hour day month week (optional). For example, 0 15 2 * * ? (executed at 02:15:00 every day), 0 30 8 ? * Mon (executed at 08:30:00 every Monday), 0 0 7 1 * ? (executed at 07:00:00 on the first day of every month). For details about how to set a cron expression, see Appendix: Cron Expressions for a Function Timer Trigger. | Left blank |

Step 1 Log in to Huawei Cloud Solution Best Practices, choose Scheduled Startup/ Shutdown, and click Deploy.

Figure 3-17 Deploying the solution



Step 2 On the Select Template page, click Next.



| < Create Stack | | |
|-------------------|--|---|
| Select Template | (2) Configure Parameters (3) Configure Black (4) Confirm Configurations | |
| * Creation Mode | Existing temptates | |
| * Template Source | URL Upload Template | |
| | A stack is created using a template. The template must contain the degloyment code file which file name extension is tf or th joon. | |
| * Template URL | https://documentation-ampiles-4.ebs.ap.southeast-3 | |
| | The URL must contain at least the deployment code file, and the file size cannot exceed 1 MB. | |
| | PFS only uses the data you upload for resource management. Your template will not be encrypted. KMS and DEW are recommended for encryption of sensitive variables. Currently, the RFS console can automatically use KMS to encrypt your sensitive variables. | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | 0 |
| | | 0 |
| | | |
| | | |

Step 3 On the Configure Parameters page, configure parameters by referring to Table 3-1 and click Next.

Figure 3-19 Configuring parameters

| Create Stack | | | | | |
|--|---|---|---|--|--|
|) Select Template — 🖉 | Configure Parameters (3) Configure Stack (| 4) Confirm Configurations | | | |
| * Stack Name scheduled-pow The stack name | ver-on-and-power-off-solution must start with a letter and can contain a maximum of 128 characters, in | cluding letters, digits, underscores (_), a | and hyphene (-). The stude name must be unique. The stack name must be unique. | | |
| Description Effetr a description of the stack. | | | | | |
| | | | | | |
| Configure Paramete | rs | | | | |
| Enter a keyword. | Q | | | | |
| Parameter | Value | Туре | Description | | |
| * function_name | scheduled_power_on_and_power_off_demo | string | Function name, which identifies a function and serves as the prefix of other resource names. It must be unique and can contain 1 to 48 characters. Only lowercase letters, digits, un | | |
| * ids | 19b185af-732d-4f30-9796-217909cadd40 9866f | string | IDs of the ECSs to periodically start or stop. Obtain them by referring to the parameter description in the deployment guide. Separate the IDs with spaces. For example, id1 id2 | | |
| * start_cron | 0 15 2 ** ? | string | Cron expression for periodical startup. Format: second minute hour day month week (optional). For example, 0 15 2 ** 7 (executed at 02:15:00 every day), 0 30 8 7 * Mon (execute | | |
| * stop_cron | 0 15 2 ** ? | string | Cron expression for periodical shutdown. Format: second minute hour day month week (optional). For example, 0.15 2 * * ? (executed at 02:15:00 every day), 0.30 8 ? * Mon (exec | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | Provinue | | |

Step 4 On the displayed page, select **rf_admin_trust** from the **Agency** drop-down list and click **Next**.

Figure 3-20 Configuring a stack

| Select Template | - (2) Configure Parameters | Configure Stack | (i) Confirm Configurations | |
|---------------------|----------------------------------|---------------------------------------|--|--|
| * Agency | huaweicloud | rf_admin_trust | • C | |
| | An agency can clearly define RFS | 5's operation permissions (such as | screation, update, and deletion) on stack resources. If the agency permissions are insufficient, subsequent operations such as deployment and execution plan creation may fail. Create Agency on IAM | |
| Auto-Rollback | If auto-rollback is enable | d, the stack automatically rolls back | to the previous successful resource status when the operation fails. After the stack is created, you can modify the stack configurations on its details page. | |
| Deletion Protection | Deletion protection prev | ents the stack from being deleted as | scidentally You can modify it on the stack details page. | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Step 5 On the **Confirm Configurations** page, click **Create Execution Plan**.

Figure 3-21 Confirming configurations

| Create Stack | | | | | | | | |
|---|---|-----------------------------------|--|---|-----------------------|----------------------|-----------------------------------|--------------------------|
| Select Template (2) Co | onfigure Parameters (3) Configure Stack (4) Conf | rm Configurations | | | | | | |
| RFS is free of charge, but the research | ources in the stack are not. Currently, you need to create an execution plan (fre | a of charge) to obtain the estima | ted price. | | | | | |
| Template Info | | | | | | | | |
| Charle Marrie | | | | Description | | | | |
| CARCK PRIME | scheduleu-power-orrand-power-orr-solution | | | L'AUTRALIA | | | | |
| 0 | | | | | | | | |
| Parameters 🖉 | | | | | | | | |
| Parameter Name | Value | Туре | Description | | | | | |
| function_name | scheduled_power_on_and_power_off_demo | string | Function name, which identifies a funct | tion and serves as the prefix of other resource r | names. It must be u | nique and can con | tain 1 to 48 characters. Only lov | vercase letters, digits, |
| ids | f9bf85af-732d-4f30-9796-217909cadd40 98666811-b0b9-4a | string | IDs of the ECSs to periodically start or | stop. Obtain them by referring to the parameter | r description in the | deployment guide. | Separate the IDs with spaces. F | For example, id1 id2 |
| start_cron | 0 15 2 ** ? | string | Cron expression for periodical startup. | Format: second minute hour day month week (| (optional). For exam | ple, 0 15 2 * * ? (e | xecuted at 02:15:00 every day), | 0 30 8 ? * Mon (exec |
| stop_cron | 0 15 2 ** ? | string | Cron expression for periodical shutdow | in. Format: second minute hour day month wee | ek (optional). For ex | ample, 0 15 2 * * ? | (executed at 02:15:00 every da | ry), 0 30 8 ? * Mon (ex |
| | | | | | | | | |
| Stack Settings | | | | | | | | |
| IAM Permission Agency (Provid | der) huaweicloud, (Agency) rf_admin_trust | Auto-Rollbac | b Disabled | Dele | etion Protection | Disabled | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| mated fee: You can obtain the estimat | ted fee after creating an execution plan (tree of charge). | | | | | Previous | Create Execution Plan | Directly Deploy Stack |

Step 6 In the displayed **Create Execution Plan** dialog box, enter an execution plan name and click **OK**.

 \times

Figure 3-22 Creating an execution plan

Create Execution Plan

- Before deploying a stack, you can create an execution plan to preview the stack information and check its configurations to evaluate the impact on running resources.
- RFS is free of charge, but the resources in the stack are not. After the execution
 plan is created, a stack (occupies the stack quota) for which no resource is
 enabled is generated, and the estimated price is displayed in the execution plan
 details.

| * Execution Plan Name | executionPlan_20230327_1432_6iw3 | | | |
|-----------------------|--|-------|--|--|
| Description | Enter a description of the execution plan. | | | |
| | | | | |
| | | 0/255 | | |
| | OK Cancel | | | |

Step 7 Click Deploy. In the displayed dialog box, click Execute.

Figure 3-23 Execution Plans tab

| < scheduled-power-on-and | | | | Delete | ate Template/Parameter |
|---|-----------------------------|-------------------|-------------------------------|------------------|------------------------|
| Basic Information Resources Outputs Even | ts Template Execution Plans | | | | |
| | | | | | |
| Deploy | | | | Enter a keyword. | QC |
| Execution Plan Name/ID | Status | Estimated Price ③ | Created | Description | Operation |
| executionPlan_20230327_1432_6W3 c8fb76aa-2b0c-466d-be4c-d5c674ee651f | Available | View Details | 2023/03/27 14:32:54 GMT+08:00 | | Delete Deploy |
| | | | | | |

Figure 3-24 Confirming the execution plan

| Execution Plan | | | | | |
|---|-----------|----------------------------|--|--|--|
| Are you sure you want to execute the | e plan? | | | | |
| Execution Plan Name | Status | Created | | | |
| executionPlan_20230327_143 | Available | 2023/03/27 14:32:54 GMT+08 | | | |
| After the plan is executed, the stack is updated accordingly, and resources in the template are enabled, which may incur fees based on resource payment requirements. | | | | | |
| Exe | cute Car | ncel | | | |

Step 8 Click the **Events** tab and check whether the message "Apply required resource success." is displayed. If yes, the solution is successfully deployed.

Figure 3-25 Solution deployed

| scheduled-power-on-and Basic Information Resources Outputs | Events Template | Execution Plans | | Delete Update Template/Parameter C |
|--|-----------------|----------------------------------|--------------------|------------------------------------|
| | | | | Enter a keyword. Q |
| Time ↓Ξ | Туре | Description | Resource Name/Type | Associated Resource ID |
| 2023/03/27 14:35:58 GMT+08:00 | LOG | Apply required resource success. | - | |

----End

3.3 Getting Started

Step 1 Go to the **FunctionGraph console**, and view the created functions in the function list.

Figure 3-26 Created functions

| FunctionGraph | Functions () User Gade Constant - Create Function | | | |
|---------------|---|--------------|------------|------------------|
| Dashboard | Function Name: power Add filter | | | × Q] [C] [@] |
| Templates | Function Name | Package Type | Runtime | Last Modified J≣ |
| Functions . | scheduled_power_on_and_power_off_demo_start_fgs | Zip | Python 3.6 | 6 minutes ago |
| Function List | ccheduled_power_on_and_power_off_demo_stop_fgs | Zip | Python 3.6 | 6 minutes ago |



Figure 3-27 Startup trigger

| | < scheduled_power_on_and_power ©Version: latest • | | | | | |
|---|---|--------------------------|---|--|--|--|
| 1 | Function Info 🔻 | | | | | |
| | | | Scheduled_pow FunctionOrraph v2 | | | |
| | Code Monitoring Version | n Aliases Config | guration | | | |
| | Basic Settings | Basic Settings | | | | |
| | Triggers | Function Name | scheduled_power_on_and_power_off_demo_start_fgs | | | |
| | Permissions | Function Version | v2 | | | |
| | Disk Mounting | Арр | default | | | |
| | Environment Variables | Runtime | Python3.6 | | | |
| | Concurrency | * Handler | batch-start-ecs-at-scheduled-time handler | | | |
| | Log | | Set a handler with a maximum of 128 characters in the format of [file name][execution function name]. | | | |
| | Тад | * Enterprise Project (?) | default C View Enterprise Project | | | |
| | Advanced Settings | * Execution Timeout (s) | 120 | | | |
| | | Memory (MB) | 128 • | | | |

Figure 3-28 Shutdown trigger

| < scheduled_power_on_and_power ©Version: latest • | | | | | | |
|--|------------------------------|--------------------------|--|--|--|--|
| Function Info | | | | | | |
| | + Create Troper | | | | | |
| | Code Monitoring Versio | n Aliases Configu | uration | | | |
| ۲ | Basic Settings | Basic Settings | | | | |
| | Triggers | Function Name | scheduled_power_on_and_power_off_demo_stop_fgs | | | |
| | Permissions | Function Version | v2 | | | |
| | Disk Mounting | App | default | | | |
| | Environment Variables | Runtime | Python3.6 | | | |
| | Concurrency | * Handler | batch-stop-ecs-at-scheduled-time handler | | | |
| | Configure Async Notification | | Set a handler with a maximum of 128 characters in the format of [file name].[execution function name]. | | | |
| | Log | * Enterprise Project (?) | default C View Enterprise Project | | | |
| | Tag | | | | | |
| | Advanced Settings | * Execution Timeout (s) | 120 | | | |
| | | Memory (MB) | 128 🔹 | | | |

Step 3 On the **Monitoring** tab, check that each trigger started or stopped the specified ECSs at the specified time.

Figure 3-29 Request logs

| < scheduled_power_on_and_power @Wester. talest • | Copy URN Disable Function Operation |
|---|--|
| Function Info | |
| Scholuled, pow Perchandrage v2 9 1 1 1 1 1 1 1 1 1 1 1 1 1 | Description: - Last Updatest: Mar 27, 2023 14 34 51 GMT-08:00 Function URN: with the p-octimatest: 21 GMTa/108 10:0507064469000/a7 Anction debut scote d_power_on_med_power_off_demo_sos_t/statest {} |
| Code Monitoring Version Aliases Configuration | |
| Metrics Lopp Wetrics Lopp Production and evaluational planes be logs in LTS. Verify code by inserting custom logging statements. The following table lists the function logs. Wew more on LTB. | |
| LTS Group functiongraph log group 518a789615642939607b644a80db0a7 0 LTS Stream scheduled_power_on_and_power_on_df_demo_stop_fgt_d08913d6-856a-41 | |
| Request List Beach logs Search logs by layword. Q. Lati hour | Last day Last 3 days Custom |
| Logs | Q Search V All 13 Full Screen & Download |
| 1 bl03-03-27785-1882 fourt_load request '5 version_latest 2 2023-057785-1882 fourt_load request ' downtinn: 2007ng, memory used: 30.420%. 3 2023-03-27785-1882 fourt_innoha request ' downtinn: izrast 2 2023-03-27785-188-1842 finish invoke request '', duration: 1040-539ms, billing duration: 3050ms, memory used: 40.762%, billing memory: 128% | E HERE AN ANNOUN |

----End

3.4 Quick Uninstallation

Step 1 Log in to the Application Orchestration Service (AOS) console. On the Stacks page, locate the row containing the solution stack you created in Step 3, and click Delete in the Operation column. In the displayed Delete Stack dialog box, enter Delete in the text box and click OK.

| RFS OT | Stacks ⑦ | | | | | | | 🕼 User Guide |
|-----------|---|--|------------------------|---------------------------------------|---|-------------------------------|-----------|--------------|
| Dashboard | | Delete Stack | | | × | power | | × |
| 1 Sideks | Stack Name | Are you sure you want to delete the is | stack and resources in | the stack? Stack and resources cannot | | Updated 4≣ | Operation | |
| | scheduled-power-on-and-power-off-solution 9d72138c-d084-4004-a214-0bda5c68c9d5 | Stack Name | Status | Created | | 2023/03/27 14:35:58 GMT+08:00 | Delete | date |
| | | scheduled-power-on-and-po | Deployment | 2023/03/27 14:32:54 GMT+08:00 | | | | |
| | | Enter Delete to delete the stack and | resources. | | | | | |
| | | Deeds | | | | | | |
| | | | OK Cano | el | | | | |

----End

4 Appendix

Terms

- Elastic Cloud Server (ECS): ECS provides secure, scalable, on-demand compute resources, enabling you to flexibly deploy applications and workloads.
- **FunctionGraph**: FunctionGraph allows you to run your code without provisioning or managing servers, while ensuring high availability and scalability. All you need to do is upload your code and set execution conditions, and FunctionGraph will take care of the rest. You pay only for what you use and you are not charged when your code is not running.
- Identity and Access Management (IAM): IAM enables you to easily manage users and control their access to Huawei Cloud services and resources.

5 Change History

Table 5-1 Change history

| Released On | Description | | |
|-------------|---|--|--|
| 2023-04-30 | This issue is the first official release. | | |