Solution

Quick Backup for Cloud Servers

 Issue
 1.0.0

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Solution Overview

Scenarios

By using the Cloud Backup and Recovery (CBR) of Huawei Cloud and configuring an appropriate backup policy on CBR, this solution allows you to back up all unprotected Elastic Cloud Servers (ECSs) in a region securely and reliably. It protects your ECSs if any of the following incidents occur:

- Hacker or virus attacks
- Accidental deletions
- Application update errors

Solution Architecture

In this architecture, CBR is deployed to back up all unprotected ECSs in a region, ensuring that data and services on the cloud are safe and intact.

Region			
<u></u>	Data rest	oration	
Cloud Backup and Recovery (CBR)			
Data backup			•
Elastic Cloud Server (ECS)	astic Cloud Server (ECS)	Elastic Cloud Server (ECS)	

Figure 1-1 Solution architecture

With this solution, all ECSs within a region can be backed up in a few clicks:

- A server backup vault is created automatically to store ECS backups.
- ECSs that are not backed up are associated with the vault, and an appropriate backup policy is then applied to the vault.
- ECSs are automatically backed up and restored based on the applied backup policy to ensure that services run properly.

Solution Advantages

• Backup in a few clicks

ECSs that are not backed up in a region can be automatically backed up in just a few clicks, with no more manual operations required.

• Quick recovery

Permanent incremental backups shorten the time required for backup by 95%. Instant Restore allows for as little as 1 hour RPO and RTO within minutes.

• Security and reliability

Data on encrypted disks is automatically encrypted during backup, and application-consistent backup is available if you require higher data consistency and security for your cloud servers.

Considerations

- Before deploying this solution, ensure that you have an account with access to the target region.
- **CBR** must be enabled.

2 Resource Planning and Costs

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

Product	Description	Monthly Cost (500 GB Vault)
CBR	Region: AP-Singapore Billing Mode: Pay-per-use Vault Type/Capacity: Server backup vault/500 GB Required Duration: 1 hour	\$0.03 USD x 24 x 30 ≈ \$21.6 USD
	Estimated Price: \$0.03 USD	

 Table 2-1 Resource planning and costs

3 Implementation 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 the Huawei Cloud official website, open the **console**, move your mouse 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** and then search for the **rf_admin_trust** agency in the right pane.



IAM	Agencies (?)					-	Create Agency
Users	Delete Agencies available for co	Debtle Agencies available for creation: 32				✓ rf_admin_trust	X Q
User Groups	Agency Name1D ↓≣	Delegated Party J≣	Validity Period ↓≣	Created JF	Description ↓≣	Operation	
Permissions •	rt_admin_trust	Account op_svc_IAC	Unlimited	Jan 16, 2023 17:57:41 GMT+08:00	Created by RF, Not delete.	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 Create Agency

Agencies / Create Agenci	cy
★ 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** and select it in the search result.

Figure 3-5 Select Policy

< Authorize Agency	
Select PalicyRate 2) Select Scope 3) Finish	
Assign selected permissions to rf_admin_trust1.	Create Policy
View Selected (1) Copy Permissions from Another Project	All policies/roles
PolicyiRole Name	Туре
DRE AdministratorAccess Electronnuccion Data Model Engine tenant administrator with full permissions.	System-defined policy
Tenant Administrator Tenant Administrator (Esclude IVM)	System-defined role
Cist Streamt Admin Cloud Stream Service Tenant Administrator, can manage multiple CS users	System-defined role

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

Figure 3-6 Select Scope

<	Authorize Agency
	Select Policy/Role 2 Select Scope (3) Finish
	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.

rigure 5-7 Agency list								
IAM	Agencies (?)	Agencies ①						
Users	Delete Agenc	cies available for creation: 32			All	✓ rf_admin_trust	X Q	
User Groups	Agency Nam	meilD J≣ Delegated Party J≣	Validity Period ↓≡	Created JF	Description ↓≡	Operation		
Permissions • Projects	rf_edmin_tru	est Account op_svc_IAC	Unlimited	Jan 16, 2023 17:57:41 GMT+08:00	Created by RF, Not delete.	Authorize Modify Delete		
Agencies								
Identity Providers								
Security Settings								

Figure 3-7 Agency list

----End

3.2 Quick Deployment

This section describes how to deploy the Quick Backup for Cloud Servers solution.

Parameter	Туре	Manda tory	Description	Default Value
storage_po ol_name	string	Yes	The vault name, which can contain letters, digits, underscores (_), and hyphens (-) and must be 1 to 64 characters long.	cloud- backup_demo
storage_po ol_size	numb er	Yes	The vault capacity, ranging from 10 GB to 10485760 GB. It is recommended that the vault capacity be at least the total size of disks on the cloud servers.	500
backup_int erval	numb er	Yes	The backup frequency, which specifies the interval (1 to 30 days) for executing backup tasks.	3
backup_ti me	string	Yes	The execution time, which specifies at the beginning of which hour (00:00–23:00) in a day backup is scheduled. It is recommended that backups be performed during off-peak hours or when no services are running.	14:00
time_perio d	numb er	Yes	How long backups will be retained, in days. Value range: 2 to 99999	30

Table 3-1 Required parameters

Step 1 Log in to Huawei Cloud Solution Best Practices and choose **Quick Backup for Cloud Servers**. Click **Deploy Now** to switch to the **Create Stack** page.

	Quick Backup for Cloud Servers
Region Data restoration Cloud Backup Data backup	Version: 1.0.0 Last Updated: April 2023 Built By: Huawei Cloud Time Required for Deployment: About 5 minut Time Required for Uninstallation: About 5 minu Estimated Cost ¬ View Source Code ¬
	View Deployment Guide
Elastic Cloud Server (ECS) Elastic Cloud Server (ECS) Elastic Cloud Server (ECS) (ECS)	Deploy

Figure 3-8 Solution Best Practices

Step 2 On the **Select Template** page, click **Next**.

Figure 3-9 Select Template

< Create Stack		
Select Template	O Configure Parameters ③ Configure Stack ④ Continue Configurations	
* Creation Mode	Existing templates	
* Template Source	IRL Ubload transfer Attack is evaded using a simplifie. The Impole must contain the displayment code the which the name extension is if or tipon.	
* Template URL	Ntgs: Ndocumentation-samples-4 des.gs-stuffwards?] The URI, must contain all least the deployment code Bia, and the file size conned exceed 1 MB.	
	PRFS 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.	
		6 6 0
		Next

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

Figure 3-10 Configure Parameters

< Create Stac	:k				
(1) Select Template	2 Configure Paran	eters (3) Configure Stack	- (4) Confirm Configurations		
* Stack Name	cloud-backup The stack name must start with a	letter and can contain a maximum of 128 characte	rs, including letters, digits, underscores (_), and I	hyphens (-). The stack name must be unique. The stack name must be unique.	
Description	Enter a description of the stack	005			
		012.13			
Configure	Parameters				
Enter a keyword		Q			
Parameter		Value	Туре	Description	
* storage_pool_r	name	cloud-backup_demo	string	The vault name, which can contain letters, digits, underscores (_), and hyphens (-) and must be 1 to 64 characters long. The default name is cloud-backup_demo.	
* storage_pool_s	ize	500	number	The vault capacity, ranging from 10 GB to 10485760 GB. It is recommended that the vault capacity be at least the lotal size of disks on the cloud servers. The default capacity is 50	
* backup_interva	(3	number	The backup frequency, which specifies the interval (1 to 30 days) for executing backup tasks. The default frequency is 3 days.	
* backup_time		14:00	string	The execution time, which specifies at the beginning of which hour (00 00-23 00) in a day backup is scheduled. It is recommended that backups be performed during off-peak hour	
* time_period		30	number	How long backups will be retained, in days. The value ranges from 2 to 99999, and the default value is 30.	6
					0
				Previous Next	

Step 4 On the **Configure Stack** page, select the **rf_admin_trust** agency and click **Next**.

Figure 3-11 Configure Stack

Create Stack	
1) Select Template	- (2) Contiguer Parameters (3) Contigues Black (4) Continue Contigurations
* Agency	Instantional It_stamm, trust C Are agency can charly define BTS1 operation permissions (such as creation, update, and definition) on stack resources. If the agency permissions are insufficient, subsequent appendixes used as deployment and execution plan creation may fail. Create Agency on IAM
Auto-Rollback	If auto-rollback is enabled, the stack automatically rolls back to the previous successful resource status when the operation fails. After the stack is overled, you can modify the stack configurations on its details page.
Deletion Protection	Deletion protection prevents the stack from being deleted accidentally. Nou can modify it on the stack details page.

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

Create Stack					
(1) Select Template (2)) Configure Parameters (3) Configure Stack	🚯 Confirm Configurations			
RFS is free of charge, but the	resources in the stack are not. Currently, you need to create an exe	ecution plan (free of charge) to obtain the estimate	ited price.		
Template Info Stack Name	cloud-beckup		Decryption		
Parameters 🖉					
Parameter Name	Value	Type	Description		
storage_pool_name	cloud-backup_demo	string	The vault name, which can contain letters, digits, underscores (_), and hyphens (-) and must be 1 to 64 characters long. The default name is cloud-backup_demo.		
storage_pool_size	500	number	The vault capacity, ranging from 10 GB to 10485760 GB. It is recommended that the vault capacity be at least the total size of disks on the cloud servers. The default capacity is		
backup_interval	3	number	The backup frequency, which specifies the interval (1 to 30 days) for executing backup tasks. The default frequency is 3 days.		
backup_time	14:00	string	The execution time, which specifies at the beginning of which hour (00:00-23:00) in a day backup is scheduled. It is recommended that backups be performed during off-peak ho		
time_period	30	number	How long backups will be retained, in days. The value ranges from 2 to 99999, and the default value is 30.		
Stack Settings	ovider) huanwickoud, (Agency) r[_admin_trust	Auto-Rollback	x Disabled Deletion Protection Disabled		
Estimated fee: You can obtain the est	stimulate file. You can obtain the estimated file after creating an execution plan (He of charge).				

Figure 3-12 Confirm Configurations

×

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

Figure 3-13 Create 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_20230320_1003_k69z	
Description	Enter a description of the execution plan.	
		0/255
	OK Cancel	01200

Step 7 Wait until the status of the execution plan changes to **Available** and then click **Deploy** in the **Operation** column. In the displayed dialog box, click **Execute**.

Figure 3-14 Execution Plans

< cloud-backup				Delete Upda	te Template/Parameter C
Basic Information Resources Outputs Events	Template Execution Plans				
Deploy				Enter a keyword.	QC
Execution Plan Name1D Sta	tatus	Estimated Price 🕥	Created	Description	Operation
executionPlan_20230320_1003_k69z /vv f1a90962-43a0-4883-ar3d-4548151bd07e /vv	vafable	View Details	2023/03/20 10:03:47 GMT+08:00		Delete Deploy

Figure 3-15 Confirming the execution plan

Execution Plan					
Are you sure you want to execute the	e plan?				
Execution Plan Name	Status	Created			
executionPlan_20230320_100	Available	2023/03/20 10:03:47 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	ecute Car	ncel			

Step 8 Wait until message "Apply required resource success" is displayed for the event, indicating that the solution has been deployed.

Figure 3-16 Solution deployed

C cloud-backup Delts Updats Templatu-Parameter C Sauce International Parameter C						
Dasc mornation Resources Outputs Events	Checation Plans					
				Enter a keyword. Q		
Time J≣ Type	Description		Resource Name/Type	Associated Resource ID		
2023/03/20 10:08:07 GMT+08:00 LOG	Apply required resource succe	55.		-		
2023/03/20 10:05:59 GMT+08:00	Apply completel Resources: 2 adde	d, 0 changed, 0 destroyed.	-	-		
2023/03/20 10:05:59 GMT+08:00 Creation Con	npiete huaweicloud_cbr_vault.cbr_vault.C	reation complete after 1s [id=d0fb01e7-c645-4015-9fdd-ff4abee0ba28]	cbr_vault huaweicloud_cbr_vault	d0/b01e7-c545-4015-9fdd-ff4abee0ba28		
2023/03/20 10:05:58 GMT+08:00 Creation in P	rogress huaweicloud_cbr_vauit.cbr_vauit: C	realing	cbr_vault huaweicloud_cbr_vault	-		
2023/03/20 10:05:58 GMT+08:00 Creation Con	nplete huaweicloud_cbr_policy.cbr_policy:	Creation complete after 1s (id=e9d43b2d-4980-4c5f-8aaf-b63c797cf06b)	cbr_policy huaweicloud_cbr_policy	e9d43b2d-4980-4c5f-8aaf-b63c797cf06b		
2023/03/20 10:05:58 GMT+08:00 Creation in P	rogress huaweicloud_cbr_policy.cbr_policy:	Creating	cbr_policy huaweicloud_cbr_policy	-		
2023/03/20 10:05:56 GMT+08:00 LOG	Creating required resource now		-	-		

----End

3.3 Getting Started

Step 1 Log in to the **Cloud Backup and Recovery** console and view the resource created for cloud server backups.

Recovery Console	Cloud Server Backups 🕥 • Process Flow By Server Backup Veal One-click Backup (Migrate to CBR Go to CSBS Console					
Cloud Server Backups Cloud Disk Backups	Process Flow X					
Hybrid Cloud Backups -						
Policies Tasks	by Your Log in the Cloud Backup and Recovery consele and click Buy Server Backup Vauli in the upper right corner. Associately source servers with a vauli. In the vaul list, click associated servers. Associately source servers with a vauli. In the vauli list, click associate to go the vault details page and view associated servers. Associately source servers with a vauli.					
	Vaults Backups Agent Installation A valit is a container that stars backups. You can associate a valit with resources and apply a backup policy to the valit. All projects All projects In annow Q. Search by Tag. or C C Image: Control of the control of th					

Figure 3-17 Cloud Server Backups

Step 2 View the created backup policy.

Figure 3-18 Backup policy

Recovery Console	Policies ⑦				Create Policy
Cloud Server Backups Cloud Disk Backups	Backup Policies				
SFS Turbo Backups Hybrid Cloud Backups 🔹	A backup policy takes e You can create 30 more	ffect after it is applied to a vault. backup policies.	If backup is not executed for a vault, verify that the policy status is enabled.		C
Policies	Name/ID	Status	Backup Rule	Retention Rule	Operation
Tasks	cloud-backup_demo 4a7c7308-62a7-446d-bc8	a-41e1 🧿 Enabled	Automatically perform backups at 11:00 every 3 days. The initial backup is a full bac	Keep backups from the last 1 month.	Disable Edit Delete
	defaultPolicy 5beffc73-35c8-4635-bf34-	410a09 💿 Enabled	Automatically perform weekly backups at 00:00 on the following days: Monday, Tues	Keep backups from the last 1 month.	Disable Edit Delete
	4				

----End

3.4 Quick Uninstallation

Step 1 Click **Delete** in the row where the solution stack is.

Figure 3-19 Uninstalling the solution

RFS OBT	Stacks ⑦					🕼 User Guide	Create Stack
Dashboard					Search by stack name b	y default.	QC
alaus	Stack Name	Status 🖓	Description	Created 4F	Updated ↓≡	Operation	
	cloud-backup 38cc5105-8aaf-43b5-9899-746335f73d7e	Deployment Complete	-	2023/03/20 10:03:46 GMT+08:00	2023/03/20 10:06:07 GMT+08:00	Delete Update	

Step 2 Enter **Delete** and click **OK**.

Figure 3-20 Confirming the uninstallation

Are you sure you want to delete the s	stack and resources in t	the stack? Stack and resources cannot prming this operation.			
Stack Name	Status	Created			
cloud-backup	Deployment	2023/03/20 10:03:46 GMT+08:00			
Enter Delete to delete the stack and resources.					

----End

4 Appendix

Terms

- Elastic Cloud Server (ECS): ECS provides secure, scalable, on-demand compute resources, enabling you to flexibly deploy applications and workloads.
- Cloud Backup and Recovery (CBR): CBR lets you back up cloud-native servers, disks, and file systems as well as on-premises VMware virtual environments with ease. If there is a virus intrusion, accidental deletion, or software/hardware fault, you can restore resources to any point when the data was backed up.

5 Change History

Table 5-1 Change history

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