Solution

CDN for Download Acceleration

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 1.0.0

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Solution Overview

Scenarios

With Huawei Cloud **Content Delivery Network (CDN)** and **Object Storage Service (OBS)**, this solution automatically caches data stored in OBS to CDN points of presence (PoPs) in different regions on demand. It accelerates the access and download of static resources such as images, videos, and software packages in applications and reduces bandwidth and traffic costs. It is suitable for the following scenarios:

- File download: websites that provide download services based on HTTP or HTTPS, game clients, and app stores
- Audio and video on demand: online education, video sharing, and music or video on demand
- Image loading: portal websites, e-commerce platforms, news apps, and usergenerated content (UGC) applications

Architecture

This solution can create a download acceleration environment for CDN and configure businesses. It allows you to create and associate CDN and OBS resources in one click.

Figure 1-1 Architecture



This solution will:

- Create an **OBS bucket** to store static resources such as images, videos, and software packages of websites, forums, apps, and games.
- Set the OBS bucket as the origin server of the acceleration domain name in CDN, so that data in the bucket can be cached to CDN points of presence (PoPs), accelerating the access and download of static application resources and reducing bandwidth and traffic costs.

Advantages

Low cost

OBS bucket resources are cached on CDN PoPs and do not need to be downloaded via the Internet, reducing costs.

High efficiency

Huawei Cloud CDN has abundant acceleration resources and widely distributed PoPs. It ensures that user requests are precisely scheduled to the optimal PoP for effective and stable acceleration.

• Easy deployment

This solution can be deployed in one click within 5 minutes.

Constraints

- Before deploying this solution, you have registered an account with access to the target region.
- You have registered a domain name.
- Before uninstalling the solution, clear all data in the OBS bucket. Otherwise, uninstallation fails.

2 Resource Planning and Costs

Using OBS and CDN may generate fees. For details, see **Table 2-1**. The estimated fee of this solution is for reference only. Check bills for actual fees.

Huawei Cloud Service	Description	Monthly Fee (10 GB Data, 100 Requests, and 1000 GB Traffic)
CDN	 You are billed by the traffic used per hour. Tiered-pricing is used and the billing cycle is one calendar month. You can also purchase traffic packages. For details, see CDN Pricing Details. Prices for the International service area are as follows: 0 TB to 10 TB (included): \$0.115 USD/GB 10 TB to 50 TB (included): \$0.11 USD/GB 	\$115 USD
	• > 50 TB: \$0.095 USD/GB	
OBS	You are billed for storage space, requests, and traffic. For details, see OBS Pricing Details .	\$0.25 USD
	1. Storage space: \$0.025 USD/GB/month	
	2. Requests: \$0.0004 USD per thousand requests	
	3. Pull traffic: free	
Total		\$115.25 USD

Table 2-1 Billing

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





Figure 3-2 Identity and Access Management

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

Figure 3-3 Agencies

IAM	Age	encies ③								Create Agency	
Users		Delete Agencies available for creat	tion: 32				Al	Ŧ	rf_admin_trust	×Q	
User Groups		Agency Name1D ↓≣	Delegated Party ↓≣	Validity Period ↓≡	Created 4F	Descrip	tion J≣		Operation		
Permissions • Projects		rf_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 Creating an agency

ncies / Create Agen	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**, select it in the search results, and click **Next**.

Figure 3-5 Selecting a policy

< Authorize Agency	
Stelect PolicyRole (2) Stelect Scope (3) Finish	
Assign selected permissions to rf_admin_trust1.	Create Policy
View Selected (1) Copy Permissions from Another Project	All policies/toiles
Policy/Role Name	Туре
DATE AdministratorAccess Enconnendate Data Model Engine Innant administrator with full permissions.	System-defined policy
Tenant Administrator Tenant Administrator (Exclude I/M)	System-defined role
CBurd Stream Service Tenant Administrator, can manage multiple CS users	Stystem-defined role

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

Figure 3-6 Selecting a scope

< Authorize Agency
(1) 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.

Figure	3-7	Agencies
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Liber All Index Agendes auxiable for runted for all f	IAM	Agencies ③						Create Agency
Agency Namelo Ja, Agency Namelo Ja, Agency Namelo Ja, Delegated Pary Ja, Validary Period Ja, Created Jr Delegated Pary Ja, Operation Account Accoun	Users	Delete Agencies available for c	reation: 32			AI	 rf_admin_trust 	× Q
Pennesson • r_Ladmin_that Accord Unimited Jan 15, 2023 17:57.41 GMT+08.00 Created by RF, Not deeler. Authors: Monthy: Deele Pageologi - - - - - - - Approximation - - - - - - -	User Groups	Agency NameID ↓Ξ	Delegated Party ↓Ξ	Validity Period ↓≣	Created JF	Description JΞ	Operation	
Agendes Meethy Providers	Permissions -	rt_admin_trust	Account op_svc_IAC	Unlimited	Jan 16, 2023 17:57:41 GMT+08:00	Created by RF, Not delete.	Authorize Modity Delete	
Marthy Providers	Agencies							
	Identity Providers							
Security Settings	Security Settings							

----End

3.2 Quick Deployment

Quickly deploy the CDN for download acceleration solution.

Paramet er	Туре	Mandat ory	Description	Default Value
bucket_n ame	string	Yes	Name of the OBS bucket used to store application data, which is globally unique. Enter 3 to 63 characters, including lowercase letters, digits, hyphens (-), and periods (.).	None
accelerat e_domai n	string	Yes	Domain name used to access the application to accelerate. You are advised to use a level-2 domain name of the public domain specified by publicZone_domain . A domain name consists of one or more parts, representing domains at different levels. These parts, technically known as labels, are concatenated and delimited by periods (.). A label contains letters, digits, and hyphens (-). A domain name can contain up to 75 characters. Do not start or end a domain name with a hyphen (-). Example: download.game-apk1.com.	None

Table 3-1 Parameter description

Paramet er	Туре	Mandat ory	Description	Default Value
publicZo ne_doma in	string	Yes	Public domain used by the user service system to provide services. A domain name consists of one or more parts, representing domains at different levels. These parts, technically known as labels, are concatenated and delimited by periods (.). A label contains letters, digits, and hyphens (-). A domain name can contain up to 75 characters. Do not start or end a domain name with a hyphen (-). Example: game- apk1.com.	None
service_t ype	string	Yes	Acceleration service type. Values: download (file download acceleration, default value); web (website acceleration); video (on- demand service acceleration).	download

Step 1Log in to Huawei Cloud Solution Best Practices, choose CDN for Download
Acceleration, and click Deploy. The Create Stack page is displayed.

Figure 3-8 Deploying the solution







C Create Stack Instantion: ③ Configure Planathers: ③ Configure Stack: ④ Configure Stack: ● Config			
• Control region • Control region	< Create Stack		
 cutor that cutor that cutor that cutor that cutor that cutor the trade that cutor t	Select Template	Configure Parameters (1) Configure Stack (2) Configure Stack (2) Configure Stack	
 Perspet for Perspet	* Creation Mode	Existing templates	
A data tradied unstate hunders betradgeringent (site the gebregent (site the data))	* Template Source	URIL Uptood Template	
Impacts VIX. I		A stack is created using a template. The template must contain the deployment code file which life name extension is if or til joon.	
To UII. That contain a final the deep young doe the contained accord 1980. Set 3 only uses the data you upped for resource management. You impute will all be encrypted MMS and DEP are recommended for encrypte in disentitive unitables. Currently, the BFS controls can automatically use MMS to encrypt your aeroline vanitables.	* Template URL	https://documentation-sampleo-4.obs.ap.southeast-3	
• BYS only uses the data you update for resource management. Your template will not be encrypted, JAMS and DEVY are recommended for encrypted of sensible variables. Currently, the BYS conside can automatically use NAB is encrypt your sensible variables.		The URL must contain at least the deployment code file, and the file size cannot exceed 1 MB.	
		RFS only uses the data you upload for resource management. Your tempfale will not be encrypted. KMS and DEW are recommended for encryption of sensitive variables. Currently, the RFS conside can automatically use KMS to encrypt your sensitive variables.	
			0
			6
			0
_			

Step 3 On the **Configure Parameters** page, enter the stack name, set configuration parameters based on the **Table 3-1**, and click **Next**.

Figure 3-10 Configuring parameters

Stack Name cdn-download-a	coeleration			
The stack name m	ust start with a letter and can contain a ma	imum of 128 characters, includin	g letters, digits, underscores (_), and hyphens (-). The stack name must be unique. The stack name must be unique.
Description CDN for Downlo	ad Acceleration	4		
		29/255		
	-			
Configure Parameter	s			
	G			
Parameter	Value		Туре	Description
bucket_name			string	Name of the OBS bucket used to store application data, which is globally unique. Enter 3 to 63 characters, including lowercase letters, digits, hyphens (-), and periods (-).
accelerate_domain			string	Domain name used to access the application to accelerate. The domain name must have been licensed by the Ministry of Industry and Information Technology (MIIT). You are advi
publicZone_domain			string	Public domain used by the user service system to provide services. A domain name consists of one or more parts, representing domains at different levels. These parts, lechnically
service_type	download	*	string	Acceleration service type. Values: download (file download acceleration, default value), web (website acceleration); video (on-demand service acceleration).

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

Figure 3-11 Configuring the stack

ct inspiret		
Arrigination Interdedict C Arrigination Interdedict C Interdedict C Interdedict Interdedict C Interdedict C Interdedict C Interdedict Interdedict C Interdedict Interdedict C	elect Template	Configure Financians Configure Stack (a) Contine Configurations
A spercy can clearly define 97% reportions providence goods, and defender in stack resources. If the agency permittions are indefined in stack dependent and resources on glass contacts approved in the defendence on the defendenc	* Agency	hasvelovd v Kashni Just V C
ARM REMAX: Image: A sub-status is a searable by the status sub-status hypole has be the the personan successful resources tables where the gasetion has is done the gasetion has its done thas its done the gasetion has its done the ga		An agency can clearly define RFS's operation permissions (such as creation, 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
Dated Printed To	Auto-Rollback	If auto-rollback is enabled, the stack automatically rolis 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 protection protection being deleted accidentally. Nou can modify it on the stack details page.

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

Figure 3-1	2 Confirming	configurations
------------	--------------	----------------

cdn-download-acceleration		Description	CDN for Download Acceleration	
Value	Туре	Description		
cdn-download-acceleration	string	Name of the OBS bucket used to store application data, whi	ch is globally unique. Enter 3 to 63 characters, including lowercase letters, digits, hyphens (-), and	periods (.).
	string	Domain name used to access the application to accelerate.	The domain name must have been licensed by the Ministry of Industry and Information Technology	(MIIT). You are a
	string	Public domain used by the user service system to provide s	ervices. A domain name consists of one or more parts, representing domains at different levels. Th	ese parts, technic
download	string	Acceleration service type. Values: download (file download	cceleration, default value); web (website acceleration); video (on-demand service acceleration).	
ider) husweicloud, (Agency) rf_admin_trust	Auto-Rollback	Disabled	Deletion Protection Disabled	
	clin-download acceleration	cde-download acceleration Note Type cde-download acceleration atrag cde-download acceleration atrag download atrag	ctor-stownload-acceleration Description where Type Description the download acceleration data with the download acceleration data with the download acceleration data with the download acceleration data with the download data with a performance the downl	deridentade accritezation Decision Deci

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

Figure 3-13 Creating an execution plan

Create Execution	Plan	>
 Before deploying a sta information and check resources. RFS is free of charge, plan is created, a stack enabled is generated, details. 	ck, you can create an execution plan to preview the stack its configurations to evaluate the impact on running but the resources in the stack are not. After the execution (occupies the stack quota) for which no resource is and the estimated price is displayed in the execution plan	
		1
* Execution Plan Name	executionPlan_20230314_1050_qmq5	
Description	Enter a description of the execution plan.	
	0/255	j j
	OK Cancel	

Step 7 Click **Deploy** in the row containing the target execution plan. In the displayed dialog box, click **Execute** for resource deployment.

Figure 3-14 Execution plan

< cdn-download-acceleration				Delete Upda	ate Template/Parameter C
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
C executionPlan_20230314_1050_gmq5 2805cc82-a198-4a1a-a0c8-6154938ac2b6	Available	Mew Details	2023/03/14 10:52:23 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_20230314_105	Available	2023/03/14 10:52:23 GMT+08	
After the plan is executed, th template are enabled, which requirements.	e stack is updated may incur fees ba	accordingly, and resources in the sed on resource payment	
Ex	ecute 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 3-16 Solution deployed

Basic Information Resources Outputs	Events Template Exec	ution Plans		пана прока нацинацията
				Enter a keyword. Q
Time J⊞	Type	Description	Resource Name/Type	Associated Resource ID
2023/03/24 10:07:23 GMT+08:00	LOG	Apply required resource success.		-



3.3 Getting Started

Using the Huawei Cloud Console

Step 1 Log in to Huawei Cloud Object Storage Service Console and view the bucket list.

Figure 3-17 Viewing the bucket list

Object Storage Service	Bu	ickets ⑦ Open So	ource Software Notic	e			0	Feedback	R Process Flow	Duick Links	Complete (succeeded:	1; failed: 0) Crea	te Bucket	Buy OBS Package
Dathboard Davi		We would much appre-	eciate if you could cor	nplete our questionnaire on	Object Storage Service. Y	our feedback will help us pro	ovide a better user experi	ience.						×
Buckets		An account and all the	IAM users under it ca	in create a total of 100 buci	kets and parallel file system	is. You are advised to create	e folders in the buckets to	o organize you	r data and reduce I	now many buckets ;	you need. Learn more			
Parallel File Systems		You can create 41 more b	uckets.											С 🗆 👄
Storage Usage NEW		Specify filter criteria.												Q
Resource Packages		Bucket Name J⊞	Quick Links	₩ Storage Class	T Region		Used Capacity	Access	0	Objects ⑦	Enterprise Project	Created 4F	Operation	
My Packages dP		cdn-download-accel	🖾 🛞 🖽	Standard	AP-Singapore	Multi-AZ storage	2.04 KB	Public			1 default	Mar 07, 2023 16:54	Change Sto	rage Class Delete

Step 2 Select the bucket created during solution deployment and upload resources to be accelerated. The **cdn-download-acceleration** bucket is used as an example.

Figure 3-18 Uploading resources

Objects Deleted Objects Fagments Objects re-basic units of data storage. In OBD, the and Moders are buelted as objects. Any file type can be uploaded and managed in a bucket. Learn more You can use OBB Sector and work of up of the bucket. For sector readings, in OBD, the and Moders are buelted as objects. To previous files online, see New Do I Preview Objects in OBB tren My Browser? For sector readings. In Objects are up of the file online. The previous files online, see New Do I Preview Objects in OBB tren My Browser? For sector readings. In Objects are up of the file online. The previous files online, see New Do I Preview Objects in OBB tren My Browser? For sector readings. In Objects are up of the file online. The previous files online. See New Do I Preview Objects in OBB tren My Browser? For sector readings. In Object Cancer Forder To the file online. The previous files online. See New Do I Preview Objects in OBB tren My Browser? For sector readings. In Object Cancer Forder To the To the file online. The previous files online. See New Do I Preview Objects in OBB tren My Browser? For sector readings. In Object Cancer Forder To the To th
Objects are basic units of data stronge. In OBS, files and folders are treated as objects. Any file type can be uploaded and managed in a bucket. Learn more You can use OBS Breeser+ how now an object to any other folder. In this bucket. For security reasons, files cannot be previewed online when you access them from a browser. To preview files online, see How Do I Preview Cliptical in OBS from JNy Breeser? Item of Observed on the previewed online when you access them from a browser. To preview files online, see How Do I Preview Cliptical in OBS from JNy Breeser? Item of Observed on the previewed online when you access them from a browser. To preview files online, see How Do I Preview Cliptical in OBS from JNy Breeser? Item of Observed on the previewed online when you access them from a browser.
For security reasons, files cannot be previewed online when you access them from a browner. To preview files online, see How Do I Preview Objects in OBS from My Browner? Fotor an object open a contract Object. Fotor an object open a contract open a con
Inford Object Create Folder Delete More +
Name Storage Class Size ⑦ III Restoration Status Last Modified ⑦ III Operation
□ README.md Standard 2,04 KB Mar 97, 2023 17,04.23 OMT-98,00 Download (Share) More +

----End

Verifying Services

Step 1 Visit the acceleration domain name on a client. If an accelerated resource can be downloaded, the acceleration configuration is successful.

----End

3.4 Quick Uninstallation

Step 1 Click **Delete** in the row containing the solution stack.

Figure 3-19 Uninstalling the solution

Stacks ⑦					🕼 User Guide	Create Stack
				Stack Name Search by stack name by defau	ilt.	0 @ C
Stack Name/ID	Status 🖓	Description	Created JF	Updated ↓≣	Operation	
cdn-download-acceleration d9d11503-c63a-48dc-ae9e-9ee648592dc5	Creation Complete	CDN for Download Accelerat	2023/04/23 18:27:10 GMT+08:00	2023/04/23 18:27:10 GMT+08:00	Delete	

Step 2 In the **Delete Stack** dialog box, enter **Delete** and click **OK** to uninstall the solution.

Figure 3-20 Confirming the uninstallation

Delete Stack		
Are you sure you want to delete the s oe restored after being deleted. Exer	stack and resources in t rcise caution when perfo	he stack? Stack and resources cannot rming this operation.
Stack Name	Status	Created
cdn-download-acceleration	Deployment F	2023/03/14 10:52:22 GMT+08:00
Enter Delete to delete the stack and	resources.	
Delete		
	OK Cance	I

----End

4 Appendix

Terms

- **Object Storage Service (OBS)**: OBS provides stable, secure, efficient, and easy-to-use cloud storage that lets you store virtually any volume of unstructured data in any format and access it from anywhere using REST APIs.
- **Content Delivery Network (CDN)**: CDN massively speeds up website loadtimes, high-quality video streams, and file download times. Built upon a global network of 2,800+ edge nodes, huge bandwidth, and smart cache technology, CDN makes your apps faster and more reliable for users in every part of the world.

5 Change History

Table 5-1 Change history

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