Cloud Storage Gateway

Overview

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Product overview

Cloud Storage Gateway (CSG) is a gateway that can be deployed in your IDC and on your Alibaba Cloud products. It uses Alibaba Cloud Object Storage Service (OSS) buckets as backend storage devices and provides on- and off-cloud applications with standard file services through the Network File System (NFS) and Common Internet File System (CIFS) protocol and block storage services through the Internet Small Computer Systems Interface (iSCSI) protocol.

CSG supports two types of gateways:

- **File gateway**

File gateway uses OSS buckets as backend storage devices and maps the object directory structure of OSS buckets to the file system of Network Attached Storage (NAS). The CSG client can read and write all objects in an OSS bucket through the standard NFS and CIFS protocols. In addition, CSG provides higher bandwidth and lower latency, especially for the read/write performance of small files, and improves the compatibilities with the Portable Operating System Interface (POSIX) and third-party backup software. This type of gateway applies to enterprises with high performance and enterprise compatibility requirements.

- **Block gateway**

Block gateway creates storage volumes in OSS buckets and support block-level access through the iSCSI protocol. Local applications can access the volumes as the iSCSI targets. Block gateway provides the write-through and cache modes. In write-through mode, the data in block volumes is sliced and synchronized to the cloud. This mode applies to users who use high-speed links such as leased lines. In cache mode, ephemeral disks can be created for read/write acceleration and for asynchronization of data to the cloud. This mode applies to users who expect fast local access but use slow cloudification links.

Features

You can manage CSG gateways in the Alibaba Cloud CSG console, or the gateway console. The gateway console is a Web interface. The following table lists the supported features:

Currently, CSG supports two network transmission protocols: NFS and SMB. Both NFS and SMB enable clients to access file systems through the Internet.

• NFS enables you to access file systems in Unix operating systems, such AIX, HP-UX, and Linux.

• SMB enables you to access file systems in Windows.

Scenario and feature	File gateway
Web-based configuration	Supported
Gateway performance displayed on a dashboard	Supported. You can view information about the CPU usage, memory usage, cache IOPS, cache bandwidth, and network throughput.
Add OSS resources	Supported. You can add multiple OSS buckets.
Add cache disks	Supported. You can add multiple cache disks.
NFS services	Supported. You can create up to 16 NFS shares for each gateway.
SMB services	Supported. You can create up to 16 SMB shares for each gateway.
AD/LDAP	Supported
AD and LDAP	Supported
Log management	Supported
Gateway version upgrad	Supported. You can upgrade gateways in the gateway console or in the Alibaba Cloud CSG console.

Specifications of different types of Alibaba Cloud CSG gateways

Type	File gateway deployed on Alibaba Cloud			
Specification	Basic	Standard	Enhanced	Performance
Storage protocol	NFSv3, NFSv4, and SMB			
Maximum number of files supported	10,000,000	50,000,000	100,000,000	500,000,000
Maximum file system share capacity	64 TB	128 TB	256 TB	256 TB
Maximum number of file system shares supported	NSF/SMB: 4	NSF/SMB: 8	NSF/SMB: 16	NSF/SMB: 16
Maximum number of concurrent connections	NSF/SMB: 1,024			
Maximum OSS synchronization bandwidth	1 Gbit/s	2 Gbit/s	5 Gbit/s	10 Gbit/s
Encrypted transmission to Alibaba Cloud	Yes			
Minimum cache disk capacity	40 GB			
Maximum gateway bandwidth	1 Gbit/s	2 Gbit/s	5 Gbit/s	10 Gbit/s

Note: Currently, only whitelisted users can select the Performance model when they deploy gateways on Alibaba Cloud.

Type	File gateways deployed on-premises		
Recommended VM specification	4-core, 8 GB memory	8-core, 16 GB memory	16-core, 32 GB memory
Storage protocol	NFSv3, NFSv4, and SMB		
Maximum number of files supported	50,000,000		
Maximum file system share capacity	128 TB		
Recommended maximum number of file system shares	NSF/SMB: 4	NSF/SMB: 8	NSF/SMB: 16
Maximum number of file system shares supported	NSF/SMB: 16		
Maximum number of concurrent connections	NSF/SMB: 1,024		
Maximum OSS synchronization bandwidth	10 Gbit/s		
Encrypted transmission to Alibaba Cloud	Yes		
Minimum cache disk capacity	40 GB		
Image format	OVA, VHD, and QCOW2		

Use cases

• CSG has been widely applied. Here are some simple use cases:

• File gateway

1. You need to build a large-capacity NAS instance with limited local storage.
2. You need to store a large number of files on the cloud and expect that the files will be accessed through a file system so that you will not have to modify the code.
3. You need to access the same set of files in multiple IDCs with NAS.

• Block gateway

1. You need to back up data to the cloud using backup software that supports iSCSI efficient transmission.
2. You need to import and store video streams to storage volumes through iSCSI.

As a lightweight storage gateway, CSG can be deployed in your own IDC as well as in the cloud. For

more information about the deployment procedures, see the Quick Start Guide.