# Virtual Private Cloud

## Glossary

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## A

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## AccessKey

An AccessKey (AK) indicates an AccessKeyId and AccessKeySecret pair used in access identity verification.The OSS verifies the identity of a request sender by using the AccessKeyId/AccessKeySecret symmetric encryption method. The AccessKeyId identifies a user. With the AccessKeySecret, a user can encrypt the signature string and the OSS can verify the AccessKey of the signature string. The AccessKeySecret must be kept confidential.

## Access Mode

An access mode defines the data packet transmission path for an RDS instance. Performance is the standard access mode; Safety is the high security access mode.

## Additional Read Throughput

The additional read throughput refers to the part of actual consumed read throughput that exceeds the reserved read throughput. Its statistical period is one second.

## Additional Write Throughput

The additional write throughput refers to the part of actual consumed write throughput that exceeds the reserved read throughput. Its statistical period is one second.

## API

**Application Programming Interface**

A set of pre-defined functions aimed to provide applications and developers with software-based or

hardware-based abilities to access a set of routines, without the need to access the source code or understand the inner workings of a program.

## ARP

**Address Resolution Protocol**

ARP provides dynamic mapping from IP addresses to corresponding hardware addresses.

## Automatic snapshot policy

A rule that defines when the automatic snapshots are taken and how long they will be retained.

## Auto Scaling

A service that can automatically scale up by adding more ECS instances at busy hours, or scale down by releasing ECS instances at slack hours.

## Availability

The ability of authorized entities to access and use a resource as needed.

## B

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## Backend Server Weight

Backend Server Weight is a relative concept. An indicator's weight indicates its relative importance in the overall rating system.

## Billing Method

Refers to how a user is billed based on their usage of cloud service resources. They generally include: pay by traffic, pay by bandwidth, and pay by time.

## Bucket

Buckets are the elements used by a user to manage stored objects. All objects must belong to a bucket.

## C

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## Capacity Instance

Specification of instance which can provide more economical storage reads and writes costs.

## CDN

A distributed network that distributes user requests to the most suitable nodes, allowing the user to retrieve the content they need as quickly as possible.

## Certificate

Certificates are used in HTTPS. After uploading a certificate to a Server Load Balancer, users can bind the certificate during HTTPS listener creation to provide HTTPS service. Certificates include both server-side and client-side certificates.

## CIDR

### Classless Inter-Domain Routing

Also called supernetting, is a method for preventing the expansion of Internet route tables. Basically, CIDR is a method of allocating multiple IP addresses so as to reduce the total number of route entries in a route table.

## Client

A client is a program that establishes connections to send requests.

## Cloud disk

An independent disk that can be attached to any instance within the same availability zone of the same region. There are three types of cloud disks, SSD cloud disks, efficient cloud disks, and general cloud disks.

## Cloud Monitor

An open cloud monitoring platform that can provide real-time monitoring for your websites and servers. It uses various alarm methods (via text message, TradeManager, or email) to ensure you receive prompt warnings. This provides constant support to ensure the normal operation of your websites and servers.

## Cloud Computing

A supply and management model that uses a network to provide scalable and elastic sharing of physical and virtual resource pools in a self-service, on-demand manner.

## CNAME Record

A Canonical Name (CNAME) record. When the DNS system is querying the name on the left of CNAME, it instead queries the name on the right of CNAME. The procedure continues until it traces the PTR or A name. It only responds after a successful query.

## Connection

A TCP connection between a client and RDS instance. If the client uses a connection pool, the connection between the client and RDS instance will be a persistent connection. Otherwise, it will be a short connection.

## Connection String

A connection string includes a connection address, port, database name, database account, and the account password. For example, dbname@XXXX.mysql.rds.aliyuncs.com:3306,username/password

## Cookie

Cookies are data (usually encrypted) stored by some websites on a local user terminal to determine a user's identity and perform session tracking.

## D

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## Data Disk

A disk that contains only data, instead of an operating system.

## DDoS

### Distributed Denial of Service

Distributed Denial of Service is an attack using client/server technology. Multiple computers are combined to form an attack platform and initiate a DDoS attack against one or more targets, increasing the threat posed by denial of service attacks exponentially.

## DNAT
### Destination Network Address Translation

DNAT is used to translate an IP data packet's destination address to another address.

## Domain Name

Domain name is the name of a computer or group of computers on the Internet, composed of a string of names separated by periods. It is used to identify the electronic location of a computer during data transmission.

## E

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## ECS

### Elastic Compute Service

A type of simple and efficient computing service that allows for auto scaling. Its management mode is simpler and more efficient than that of physical servers. Users can create or release any number of ECS instances at any time according to business needs without the need of purchasing hardware in advance. This increases O&M efficiency and reduces IT costs. It quickly constructs stable and reliable applications for users, reduces the difficulty of network scale calculation, and allows users to focus on core business innovation.

## Edge Nodes

A network node with a comparatively small number of links for the user to access.

## Elastic IP

Elastic IPs (EIPs) provide public bandwidth service to users, so that they can bind/unbind EIP instances to/from ECS and Server Load Balancer instances according to different business scenarios. EIPs support the PayByTraffic and PayByBandwidth billing methods.

## Ephemeral SSDs

A disk that uses the local storage of the physical machines where the instances are located.

## Express Connect

Express Connect uses Alibaba Cloud's excellent infrastructure to create data transmission channels. It establishes secure and reliable intranet connections between different networks. For example, between VPCs or between VPC and IDC machine room.

# F

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## Firewall

An isolation technology used to separate intranets from public networks.

## FlexGW

An image in the cloud market that provides basic VPN and SNAT service.

## Forwarding Rule

Forwarding rules refer to the scheduling algorithms used by Server Load Balancer to distribute traffic to multiple backend servers. This includes the weighted round robin and least connections algorithms.

# G

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## HAProxy

HAProxy is a free, fast, and reliable solution that provides a high-availability, Server Load Balancer, and TCP/HTTP-based proxy supporting virtual hosts.

## Health Check

As a basic Server Load Balancer function, health check is performed on each backend server so that traffic is only forwarded to servers in normal status, ensuring high availability of Server Load Balancer.

## High Availability

High availability means making systems and applications highly available to users by minimizing downtime due to regular maintenance operations (planned) and sudden system crashes (unplanned).

# HTTP

**HyperText Transfer Protocol**

HTTP is a distributed and collaborative hypermedia information system. It is a generic, stateless, and application-oriented protocol.

# I

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## Instance

An independent virtual machine that includes basic cloud computing components such as CPU, memory, operating system, bandwidth, disks, and so on.

## Internet Address

An Internet address provides a service connection address for a client with a public network source IP.

## Intranet

Intranet is a computer network that uses the same technology as the Internet, generally established within an enterprise or organization to provide information sharing and exchange services to its members.

## Intranet IP

Intranet IP provides a service connection address for a client with a private network source IP.

## IOPS

Measured in units of 4KB, IOPS is the maximum number of block device reads/writes per second.

# J

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## Keepalived

Keepalived is a software program similar to Layer 3, 4, and 5 exchange mechanisms. We normally call this layer 3, layer 4, and layer 5 switching. Keepalived is used to detect the status of Web servers. If a Web server crashes or encounters a fault, it will detect this and exclude the problematic Web server from the system. When the Web server is again functional, Keepalived will automatically add it to the server cluster. These operations are all automatic and do not require any human intervention. Only Web server repair requires human intervention.

# L

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## Leased Line

Alibaba Cloud's leased line access products can help users establish a leased line connection between a local data center and Alibaba Cloud.You can use Alibaba Cloud's leased line access products to establish a leased line connection linking Alibaba Cloud with data centers, offices, and hosting areas. In most cases, this will reduce network latency and provide a more efficient network experience compared with Internet connections.

## Local Disaster Recovery

Local disaster recovery is achieved by establishing two independent data centers in the same region so that, if one suffers an accident and stops working, the other will not be affected.

## LVS

### Linux Virtual Server

Linux Virtual Server (LVS) is a cluster technology using the IP load balancing technology and content-based request distribution techniques. With a very good throughput, the load balancer distributes requests evenly to different servers for processing, while automatically shielding faulty servers, thus forming a highly performing and highly available virtual server cluster made up of the group of servers processing requests.The entire server cluster structure is transparent to customers. In addition, it does not require any modifications to any client and server programs.

## LVSGW

LVS gateways used to access cloud services.

# M

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## Max Time Deviation

The valid deviation between the version of attribute column and current time in second.

## MGW

MGWs are leased line gateways used for leased line access.

## MSTP

An SDH-based Multi-Service Transmission Platform (MSTP) refers to an SDH-based multi-service node that simultaneously allows for access, processing, and transmission for TDM, ATM, Ethernet, and other services, and provides a unified network management.

## Multi-zone

A physical area composed of multiple zones in a singe region, which can address zone-level faults.

# N

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## NAT

### Network Address Translation

An IETF (Internet Engineering Task Force) standard that allows an entire institution to appear on the Internet as a single public IP (Internet Protocol) address.

## Network Type

The network type defines the accessible range of an RDS instance intranet address. Classic-type networks allow for access from within the public cloud, while VPC-type networks only allow for access from within the VPC network.

# O

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## Object

Objects, also referred to as OSS files, are the basic elements used in OSS to store data. An object is composed of metadata (Object Meta), user data (Data), and a file name (Key).Objects are labeled by a key that is unique within the bucket.

# OSS

### Object Storage Service

A cloud storage service that uses objects as storage elements and provides object-level access interfaces.

# P

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### Performance Instance

Specification of instance which can provide high-performance reading and writing.

### Persistent Connection

A connection used to send multiple data packets in a row. During the period the connection is persisted, both parties must send link detection packets if no data packets are sent.

### Physical Connection

A physical connection is the abstraction of a physical line used to directly connect a customer to Alibaba Cloud. Every connection a customer uses to access Alibaba Cloud, is considered as one Alibaba Cloud physical connection object under the customer's name.

### Port

A port is the outlet of a device used for external communication. Generally, a port is identified by port number, an integer from 0 to 65535.

# Q

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### QPS

### Query Per Second

A metric for measuring the traffic processed by a certain query server within a specified time. On the Internet, the performance of machines serving as DNS servers is generally measured in queries per second.

The number of queries processed per second, including Select, Insert, Delete, and Update.

# R

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## Read/Write Capacity Unit

The read/write capacity units consumed are the read/written row data size rounded up to 4KB.

## Reserved Read Throughput

Provisioned throughput capacity reserved for writes is a configuration of a table. Table Store will reserve the sufficient resource according to this configuration, by which the quality of the service is guaranteed with Lower costs.

## Reserved Write Throughput

Provisioned throughput capacity reserved for writes is a configuration of a table. Table Store will reserve the sufficient resource according to this configuration, by which the quality of the service is guaranteed with Lower costs.

## RDS

### Relational Database Service

A stable, reliable, and automatically scalable online database service. Based on the Apsara distributed file system and high-performance storage, the RDS supports MySQL, SQL Server, PostgreSQL, and PPAS (highly compatible with Oracle) engines. It provides a complete set of solutions for disaster recovery, backup, restore, monitoring, migration, and other features, to free users from worries about database operation and management.

## Region

A collection of physical locations that communicate via intranet.

## Route Entry

Each item in the route table is a route entry, which defines the next hop address for the network

traffic to be routed to the specified destination CIDR block. There are system routes and custom routes.

## Route Table

A route table refers to a list of route entries on the VRouter.

## RouterInterface

A Router Interface (or VRouter interface) is a virtual network device. It can be attached to a VRouter to establish an Express Connect connection with another VRouter interface. This creates an intranet connection between different networks.

## RPO

Stands for Recovery Point Object. This represents the allowable amount of data loss after a fault occurs.

## S

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## SDK

### Software Development Kit

A software development kit (SDK) is generally a collection of development tools used by software engineers when creating application software for a specific software package, software framework, hardware platform, or operating system.

## SDN

### Software Defined Network

By separating a network device control from data, a software defined network allows for flexible network traffic control, providing an excellent platform for core network and application innovation.

## Security Group

A security group is a virtual firewall with status detection and packet filtering functions, used to control the network access of one or more ECS instances. Instances in the same security group can communicate through the network, but instances in different security groups cannot communicate through intranet by default. However, intercommunication can be authorized between different

security groups.

## Server Load Balancer

A service for distributing traffic among multiple ECS instances. It can extend the service capability of an application system by distributing traffic and enhance availability by eliminating SPOFs.

## Server Load Balancer Listener

A Server Load Balancer Listener is a concept used in Server Load Balancer instances. It includes frontend ports, backend ports, Server Load Balancer policies, and health check configurations. Each listener corresponds to a backend application service.

## Server Load Balancer Instance

A Server Load Balancer instance can be understood as a running instance of the Server Load Balancer service. To use the Server Load Balancer service, the user must first create an Server Load Balancer instance. The LoadBalancerId is the unique identifier of a user's Server Load Balancer instance.

## Server

A server is an application that agrees to request-side connections and sends responses. Any given program can act as both a client and a server.

## Service Level Agreement

A written agreement between service providers and customers regarding a service and service goals.Note 1: Service level agreements can also be established between service providers and other providers. These other providers may be a group within an organization or a customer.Note 2: Service level agreements may be a part of a contract or another type of written agreement.

## Session Persistence

Session persistence is a basic Server Load Balancer function, which distributes access requests from a single client to the same backend server for processing.

## Short Connection

Short connection is a connection created when both parties need to send data to or receive data from each other. After data is sent, the connection is closed. That means that only one data transmission occurs for each connection.

## SLA

**Service-Level Agreement**

The agreement or contract accepted by a service provider and its customer regarding service quality, standards, performance, and others.

## Snapshot

A copy of data on a disk at a certain time point. There are two types of snapshots, automatic snapshots and user-created snapshots.

## SNAT

**Source Network Address Translation**

SNAT is used to translate an IP data packet's source address to another address.

## SSH

SSH was created by the IETF Network Working Group as a security protocol established on the application and transport layer.

## Stress Testing

Stress testing is a test method used to establish system stability. A stress test is usually performed beyond the system's normal operating environment so as to identify its functional limits and hidden risks.

## System Disk

A disk that contains an operating system.

## T

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## Tag

An identifier used to classify and manage a large number of ECS instances.

## TCP

See Transmission Control Protocol.

## Tengine

Tengine is a Web server project launched by Taobao. It is based on Nginx and provides many additional advanced functions and features tailored to the needs of websites with high traffic.

## Time To Live

Time to live for attribute column data. The attribute column data is valid until the difference betwenn version of data of currnet time is greater than TTL.

## Transmission Control Protocol

A connection-oriented, reliable, and byte stream-based transport layer communications protocol.

## Throughput

Refers to the amount of data successfully transmitted through a network, device, port, virtual circuit, or another facility within a given time.

## Transactions Per Second

Transactions Per Second (TPS) indicates the number of transactions processed per second, including Insert, Delete, and Update.

## U

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## UDP

### User Datagram Protocol

A connectionless transport layer protocol in an OSI reference model, primarily used for transmission when packets do not have to be sent in a certain order. The packet transmission order is checked and packets are sorted at the application layer. It provides a transaction-oriented transmission service for simple and unreliable information.

## V

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## Virtual Network Layer

Virtual network layer is the network hosting ECS instances. With its introduction, the restrictions of the physical network layer was broken. User logic and transmitted content at the virtual network layer are unknown to the physical network layer, and the physical network layer does not parse the information transmitted at the virtual network layer, thus protecting user privacy. The virtual network layer is completely implemented using software. Data/control plane separation, path decision and policy delivery are done by the controller at the virtual network layer, thus implementing a Software Defined Network (SDN).

## Virtual Boarder Router

Customers can create multiple virtual border routers (VBRs) on a physical connection. Each VBR is responsible for forwarding the data of one VLAN on the leased line to an address in Alibaba Cloud. Using VBRs, customer data can be directly transmitted to any Alibaba Cloud region.

## Virtual Local Area Network

A virtual LAN (VLAN) is any broadcast domain that is partitioned and isolated in a computer network at the data link layer (OSI layer 2).

## VLAN

### Virtual Local Area Network

VLAN is a type of emerging data exchange technology that logically groups LAN equipment into network segments so as to form virtual work groups.

## VPC

### Virtual Private Cloud

An Alibaba Cloud Virtual Private Cloud (VPC) is a private network built and customized based on Alibaba Cloud. Full logical isolation is achieved between Alibaba VPCs. Users can create and manage cloud product instances, such as ECS, Intranet Server Load Balancer, and RDS, in their own VPCs.

## VPN

### Virtual Private Network

VPN refers to the technology used to establish a private network on a public network.

## VRouter

A VRouter is a hub in the VPC, connecting all VSwitches in the VPC and serving as a gateway device that connects the VPC to other networks as well. It forwards network traffic according to specific

route entries.

## VSwitch

A VSwitch is a basic network device of the VPC network. It can be connected to different cloud product instances. When creating a cloud product instance in the VPC network, you must specify the VSwitch where the cloud product instance is located.

## VXLAN

A Virtual Extensible LAN (VXLAN) is a simple mechanism for encapsulating MAC in UDP, allowing for creating a virtual Layer 2 subnet across multiple physical IP subnets.

## W

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## White List

White List is a user status identification method. It is the opposite of a "black list". When a user is added to the white list, access by this user is permitted. Otherwise, access is not permitted.

## X

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## Y

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## Z

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## Zone

### Availability Zone

A zone refers to a physical area with an independent power supply and network in a single region. Faults can be isolated within a zone. Intranet communication is available within a zone and across different zones in the same region. The network latency is lower for ECS instances in the same zone.

Fault isolation can be achieved between different zones.