Virtual Private Cloud

Quick Start

Quick Start

Overview

Quick Start aims to help novice users to quickly learn how to build a private network. Therefore, it only contains the essential information about the basic VPC functions without providing all details.

Introduction

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

Basic principles

VPC helps you establish an isolated network environment based on Alibaba Cloud. You have full control over your own VPC, including choosing a preferred IP address range, Classless Inter-Domain Routing (CIDR) block, route table and gateway.

Based on your actual requirements, you can determine the network scale, CIDR block, region and zones required for resource deployment. Then, you can create a VPC and VSwitches with specified CIDR blocks in the target region and zones. Resources can be deployed to a network location by specifying a switch created during the creation of a cloud product instance. Access control can be achieved through ECS security groups, RDS access white lists or other methods. The following illustration is an example.
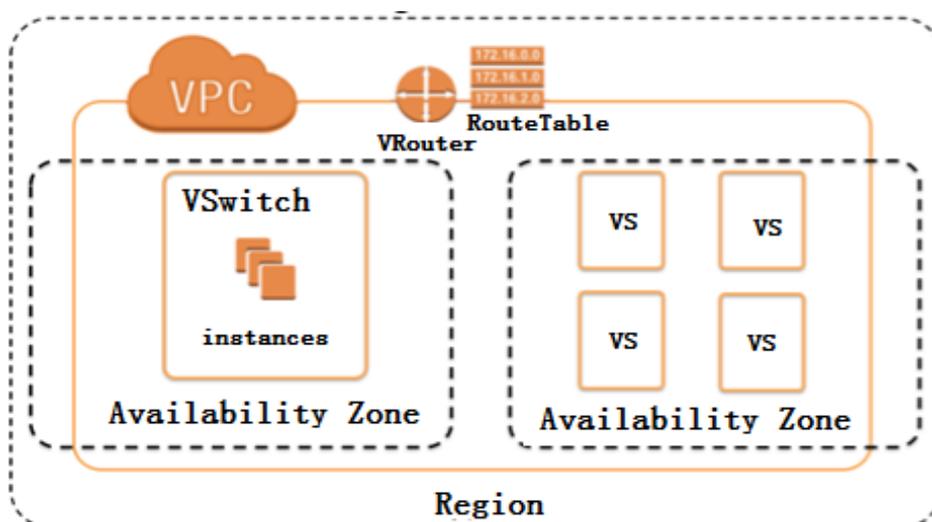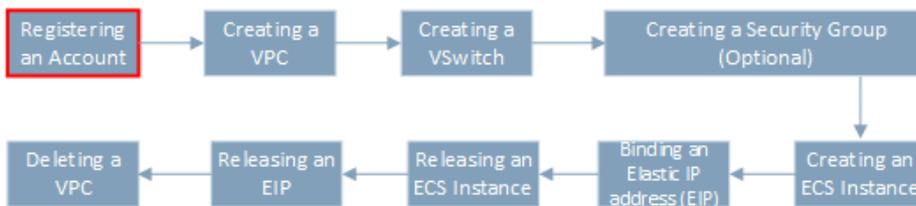
Application scenarios

Using this Quick Start guide, you can learn how to build a VPC (CIDR block: 192.168.0.0/16), create an ECS instance in the VPC and make it accessible to the Internet.

Flowchart
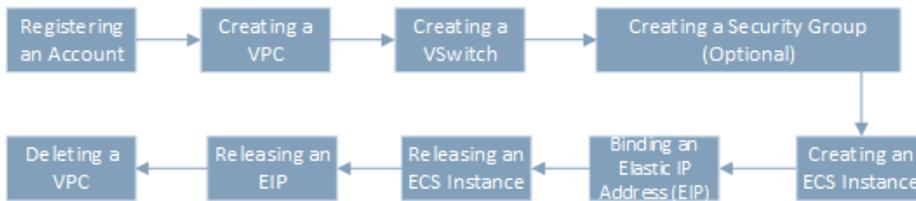
Register an account

The following picture highlights the step that is elaborated in this document.
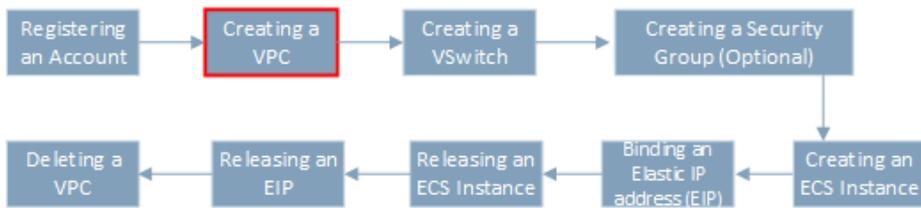

Operation procedure

If you don't have an Alibaba account yet, create one following the steps at Account Registration.

Log on through the Management Console.

Click Product & Services > Virtual Private Cloud to go to the VPC product console.

Creat a VPC

The following picture highlights the step that is elaborated in this document.

Application scenarios

You need an isolated and secure network environment.

You need to have full control over your VPC, including choosing a preferred IP address range, Classless Inter-Domain Routing,(CIDR) blocks, route table and gateway.

You can establish a customized network environment by connecting your VPC to your traditional data center through a physical connection/VPN, achieving smooth application migration to the cloud.

Prerequisites

You must firstly determine the region for the VPC deployment.

Considerations

When a VPC is created in the specified region:

Only one CIDR block may be specified for the VPC. The range of the CIDR block includes 10.0.0.0/8, 172.16.0.0/12, 192.168.0.0/16 and their subnets. The default CIDR block is 172.16.0.0/12.

After the VPC is created, its CIDR block cannot be modified.

The cloud product instances in the VPC can be distributed across different zones in the same region, but not across different regions.

The VPC can contain a maximum of 5000 cloud product instances.

A router and a routing table will be created automatically. A VPC may only have one router and one routing table.

Operation procedure

Log on to the **Alibaba Cloud VPC console**.

Click **VPC** in the left-side navigation bar to enter the "VPC List" page.

Select a region at the top of the "VPC List".

Note: As instances cannot be launched in VPCs of a different region, be sure to create a VPC in the appropriate region. This article uses the region "China North 2 (Beijing)" as an example.

Click **Create VPC** in the top-right corner to bring up the "Create VPC" window.

On the configuration page, enter the relevant information for the fields "VPC Name" (for example helloVPC), "Description" and "CIDRBlock" (for example 192.168.0.0/16).

VPC Name: This helps you conveniently identify the VPCs and subnets you have created on the console.

Description: Optional. You can enter information in this field as you wish to make VPCs more identifiable on the console.
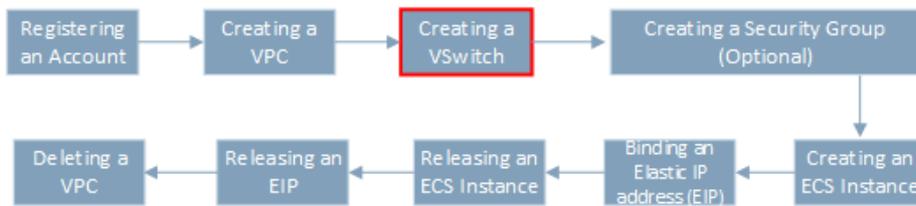
CIDRBlock: There are three options: 192.168.0.0/16, 172.16.0.0/12 and 10.0.0.0/8.

Click **OK**, and then the page returns to the "VPC list" automatically.

When the status of a VPC is "Available", the VPC has been completely created.

Creat a VSwitch

The following picture highlights the step that is elaborated in this document.

Application scenarios

You want to create one or more VSwitches to divide your VPC into subnets.

Prerequisites

You have determined the availability zone of each VSwitch.

You have determined the CIDR block for each subnet.

Considerations

The cloud product instances under a VSwitch cannot be distributed across different zones.

A single VPC can have no more than 24 VSwitches.

Each VSwitch has a 16- to 29-bit subnet mask and provides 8–65535 IP addresses.

The first 1 and last 3 IP addresses are retained for system use (for example 192.168.1.0/24, 192.168.1.0, 192.168.1.255 and 192.168.1.253–254 are retained for system use).

A VSwitch does not support multicasting or broadcasting.

The CIDR block of a VSwitch must belong to that of its VPC.

A VSwitch may be in the same CIDR block as that of its VPC, but this means the VPC can only have one VSwitch.

A VSwitch's CIDR block cannot be the same as the target CIDR block of the VPC's current route entry.

A VSwitch's CIDR block can be a subset of the target CIDR block of the VPC's current route entry.

After a VSwitch is created, its CIDR block cannot be modified.

Operation Procedure

Log on to the **Alibaba Cloud VPC console**.

Click **VPC** in the left navigation bar and select the region **China North 2 (Beijing)**.

Select a VPC and click **Manage** in the **Action** column to go to the "VPC basic info" page.

Click **VSwitches** in the left-side navigation bar to go to the "VSwitch list" page.

Click **Create VSwitch** in the top-right corner to bring up the **Create VSwitch** window.

Enter the relevant information for the following fields.

Name: This document uses the name VS-1 as an example, so you can easily view the VSwitch.

VPC: It takes the default value and cannot be modified.This is generated automatically when the VPC is created.

VPC CIDRBlock: It takes the default value and cannot be modified. This is generated automatically when the VPC is created.

Zone: The zones in the region are shown in a drop-down list. Select the appropriate zone based on your networking plan.
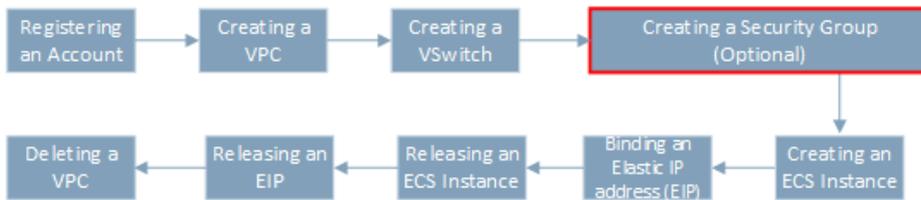
CIDRBlock: For example, 192.168.1.0/24.

Available IP quantity: It is automatically calculated by the system.

Description: You can enter a description as needed to facilitate future reference.

Click **OK** to create the VSwitch.

Creat a security group (optional)

The following picture highlights the step that is elaborated in this document.

Application scenarios

Security groups are used to set network access control for one or more ECS instances. As an important means of security isolation, security groups are used to divide security domains in the cloud.

A security group is a logical grouping. It groups instances in the same region with the same security requirements and mutual trust.

Prerequisites

You have determined the access control and security plan (security group division and route planning) of each ECS instance.

Considerations

Each instance belongs to at least one security group, which must be specified when the instance is created.

By default, an instance is accessible to other instances in the same security group through the intranet, but not to an instance in a different security group.
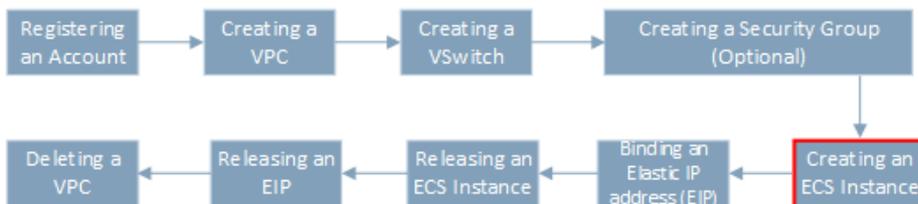
Mutual access can be authorized between two security groups.

Operation procedure

For the specific instructions of creating a security group, refer to **Creating a security group.**

Creat an ECS instance

The following picture highlights the step that is elaborated in this document.

Application scenarios

This article explains how to create an ECS instance in a VPC.

Prerequisites

A VPC has been created.

VSwitches have been created in the VPC.

Considerations

You must indicate the VPC in which the instance is created.

You must ensure that the specified VSwitch has an available private IP address. Otherwise, no ECS instance can be created.

Operation procedure

Log on to the **Alibaba Cloud VPC console.**

Click **VPC** in the left-side navigation bar to go to the "VPC List" page.

Select a region, for example "China 2 North (Beijing)".

Select a VPC and click **Manage** in the **Action** column on the right side to go to the "VPC basic info" page.

Click **VSwitches** in the left navigation bar to go to the "VSwitch list" page.

Select a VSwitch and click **Create an instance** > **Create ECS instance** in the **Action** column.

For the specific instructions of purchasing an ECS instance, refer to **Creating an ECS instance**.

Note: On the purchase page, select the VPC region, zone, network type, specific VPC and specific VSwitch. For example, select China North 2 (Beijing), China North 2 Zone A, and then specify the network type as "VPC" and select the created helloVPC and VS-1.

Bind an Elastic IP address (EIP)

The following picture highlights the step that is elaborated in this document.
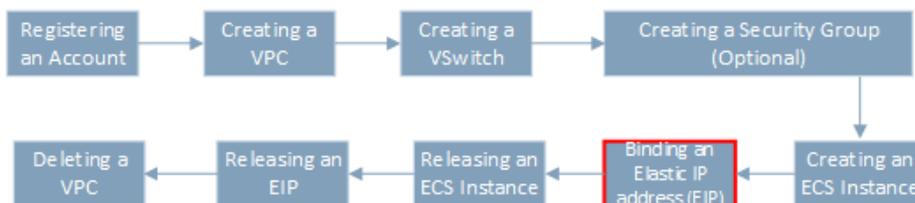
Application scenarios

An ECS instance in the VPC needs to access the Internet.

Prerequisites

An ECS instance has been created in the VPC.

Considerations

The region of the EIP must be the same as that of the VPC.

Once specified, the region of an EIP cannot be changed. To change the region, you have to delete the existing EIP and apply for a new one.

There are two payment methods for the Internet bandwidth, PayByBandwidth and PayByTraffic. The payment method cannot be changed.

For PayByBandwidth, the selected bandwidth is the fixed bandwidth in each hour. For PayByTraffic, the selected bandwidth is the peak bandwidth in each hour.

The console supports batch creation of EIPs.

Operation procedure

Method one

Log on to the **Alibaba Cloud Elastic IP Address console**.

Click **Request Elastic IP** on the top-right corner to go to the "EIP Activation" page.

Select the VPC region, Internet bandwidth payment method, peak bandwidth and quantity to purchase, and then click **Buy Now**.

Click **Activate**. Then the page returns to the "Elastic IP list" page automatically, and the successfully obtained EIP will be displayed in the list.

Select the EIP and click **Bind** in the **Action** column on the right side.

Select the instance type and ECS instance, and then click **OK** to bring up the "SMS Verification" dialog box.

Obtain and enter the "Check Code" and click **OK**.

When the "Status (All)" changes from "Binding" to "Allocated", the EIP binding operation is complete.

Method two

Log on to the **Alibaba Cloud ECS console**.

Click **Instances** in the left-side navigation bar to go to the "Instance List" page.

Select a region, for example "China East 1".

Select an ECS and click the link in the "Instance ID/Name" column to go to the "Instance Details" page.
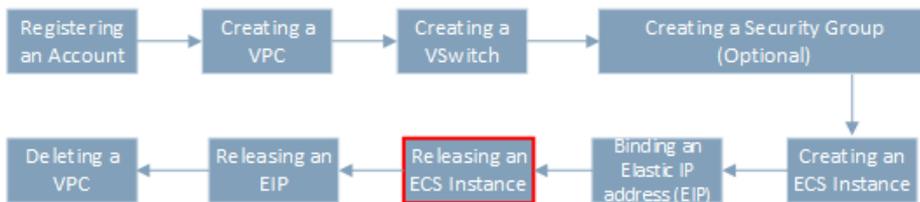
In "Configuration Information" area, click **More** > **Bind Elastic IP Address**. See the following picture.

In the pop up box, select an EIP in the drop-down list of "Elastic IP address".

Click **OK** to bind the EIP.

Release an ECS instance

The following picture highlights the step that is elaborated in this document.

Application scenarios

You want to release an ECS instance that is no longer needed.

You have to release all the cloud product instances bound to a VSwitch before releasing the VSwitch or the VSwitch's VPC.

Prerequisites

A Pay-As-You-Go instance has been bound to the VSwitch.

The status of the instance to be released must be Stopped or Running.

Considerations

Once an instance is deleted, all the related data will be lost and can no longer be recovered.

An instance in subscription is automatically released upon expiration and manual release is unnecessary. This article only gives the steps to release a Pay-As-You-Go instance.

Operation Procedure

Log on to the **Alibaba Cloud ECS console** and select the Pay-As-You-Go instance to release. You can see this information in the "Payment Method (All)" column.

Click **Release Settings**.

In the pop-up box, select "Immediate Release" or "Timed Release", and then click **Next**.

To confirm the release, click **OK** in the "Release Settings" dialog box.

If the "Cell Phone Verification" dialog box pops up, enter the verification code sent to your phone.

Click **OK** to release the ECS instance.

Release an EIP

The following picture highlights the step that is elaborated in this document.
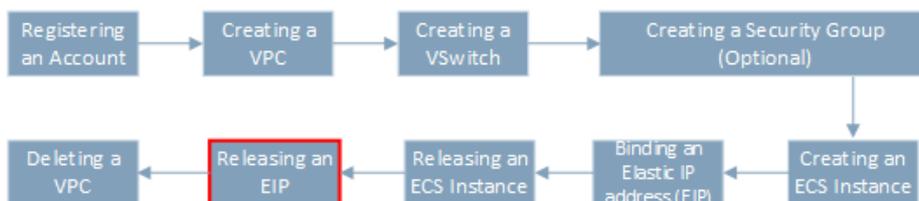
Application scenarios

You want to release an EIP which is not currently in use and will no longer be needed.

Prerequisites

The EIP has been unbound from the ECS instances.

Operation procedure

Method one

Log on to the **Alibaba Cloud EIP console** and go to the "Elastic IP list" page.

Select the EIP instance to release and click **Unbind** in the "Actions" column to bring up the "Unbind EIP" dialog box.

Confirm that this is the EIP you want to unbind and then click **OK**.

When the status of this EIP in the "Status (All)" column changes to "Available", click **More** > **Release** in the "Actions" column to bring up the "Release EIP" confirmation dialog box.

Click **OK** to release the EIP.

Method two

Log on to the **Alibaba Cloud ECS console**.

Click **Instances** in the left-side navigation bar to go to the "Instance List" page.

Select a region, for example "China East 1".

Select an ECS and click the link in the "Instance ID/Name" column to go to the "Instance Details" page.

In "Configuration Information" area, click **More** > **Unbind Elastic IP address** to bring up the "Unbind Elastic IP address" confirmation dialog box.

Click **OK** to release the EIP.

Delete a VPC

The following picture highlights the step that is elaborated in this document.
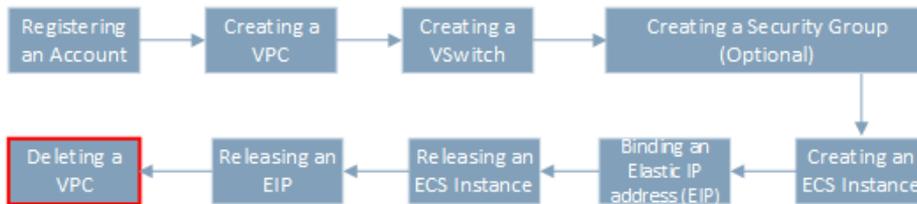
Application scenarios

You no longer needs a VPC.

Prerequisites

You have released or moved all the resources, including the VSwitches.

Considerations

Deleting a VPC will delete all the security groups created for it.

After a VPC is deleted, all the data in the VPC will be irrecoverable.

Operation procedure

Delete a VSwitch

Note: Make sure the ECS instances under the VSwitch that you want to delete have been released already.

Log on to the **Alibaba Cloud VPC console**.

Click **VPC** in the left-side navigation bar and select the region "China North 2 (Beijing)".

Select a VPC and click **Manage** in the "Actions" column to go to the "VPC basic information" page.

Click **VSwitches** in the left-side navigation bar to go to the "VSwitch list" page.

Click **Delete** to bring up the "VSwitch Deletion Confirmation" dialog box.

Click **OK** to delete the VSwitch.

Delete a VPC

Log on to the **Alibaba Cloud VPC console**.

Click **VPC** in the left-side navigation bar and select the region "China North 2 (Beijing)".

Select the VPC you want to delete and click **Delete** in the "Actions" column.

In the "VPC Deletion Confirmation" dialog box, click **OK** to delete the VPC.