Tencent Cloud

Elastic Network Interface

Product Introduction

Product Documentation

Contents

Product Introduction
Product Overview

Last updated：2024-01-11 16:04:31

Overview

An Elastic Network Interface (ENI) is used to bind CVMs within a VPC instance, and can be freely migrated among CVMs. ENIs can help configure and manage network, as well as develop highly reliable network solutions. You can bind multiple ENIs under the same availability zone in the same VPC to a CVM to set up a high-availability network solution. You can also bind multiple private IPs on an ENI to deploy multiple IPs on a single CVM.

Features

Multiple ENIs

A primary ENI will be automatically generated for a created CVM. In addition, you can bind multiple secondary ENIs to the CVM. These ENIs can belong to different subnets in the same VPC instance and availability zone. You can configure a separate security group for each ENI and configure an individual route forwarding policy for the subnet where each ENI resides.

Flexible migration

ENIs can be freely migrated between CVMs in the same VPC instance and availability zone. When an ENI is unbound from a CVM, the private IP, the EIP, and the security group policy are retained so that you do not need to configure the association again after migration.

Multiple IPs

Based on the configuration of a CVM, up to 30 private IPs can be bound to an ENI, and each private IP can be bound to an independent EIP. A single CVM can open multiple ports of the same type by using multiple EIPs. The binding relationships among ENIs, private IPs, and public IPs are retained when the ENIs are unbound from CVMs.

Independent route forwarding

A CVM can be bound to ENIs of different subnets in the same VPC instance and availability zone. You can configure route forwarding policies for each subnet to isolate networks. You can also set route policies in a CVM instance to direct network traffic with a specific destination to different ENIs.

Setting of multiple service levels

You can set different service levels for ENIs. When bandwidth congestion occurs, this can ensure that the key services with high priority be forwarded first. Currently, four levels are supported, including Gold, Silver, Bronze and Default. The priority for traffic forwarding is Gold > Silver > Bronze > Default. Unless otherwise stated, select "Default".

Flow logs

After a flow log is created for an ENI, the log stream of the ENI will be automatically collected and the log data will be synced to CLS. In the CLS topic, each ENI has a unique log stream, which contains flow log records. Only one flow log can be created for an ENI. For more information, see Creating a Flow Log for an ENI.

Key Concepts

Last updated：2024-01-11 16:04:31

Before using an ENI, you need to understand the following concepts:

Primary ENIs and Secondary ENIs

The ENI that is automatically created when a CVM is created in a VPC instance is the primary ENI.

ENIs created by users are secondary ENIs.

The primary ENI cannot be unbound, while secondary ENIs can.

Primary Private IP Addresses

When an ENI is created:

The primary private IP address of the primary ENI is randomly assigned, which can be modified.

The primary private IP address of the secondary ENI is randomly assigned or customized, which cannot be modified.

Secondary Private IP Addresses

A secondary private IP address is any private IP address other than the primary private IP address. You can configure secondary private IP addresses when you create or edit an ENI.

A secondary private IP address can be bound and unbound.

EIPs

EIPs are bound to the ENI private IP addresses one to one.

Security Groups

You can bind a security group or security groups to an ENI as required by your business.

MAC Addresses

An ENI has a globally unique MAC address.

Usage Limits

Last updated：2024-01-11 16:04:31

The maximum number of ENIs that can be bound to a CVM and the maximum number of private IPs allowed for a single ENI vary according to the CPU specification. See the table below for details. For information on the quota limits for other VPC products, see Quota Limit.

Note:

The number of private IPs bound to a single ENI indicates the maximum number allowed. The EIP quota is not provided based on this upper limit but based on EIP quota.

The number of ENIs indicates the number of ENIs that can be bound to a CVM instance, while each VPC supports up to 1,000 ENIs.

Number of ENIs bound to a CVM instance

Number of private IPs bound to a single ENI on CVM instances

Model	Instance Type	Number of ENIs								
		CPU: 1 core	CPU: 2 cores	CPU: 4 cores	CPU: 6 cores	CPU: 8 cores	CPU: 10 cores	CPU: 12 cores	CPU: 14 cores	CPU: 16 core
Standard	Standard S5	2	4	4	-	6	-	-	-	8
	Standard Storage Optimized S5se	-	-	4	-	6	-	-	-	8
	Standard SA3	2	4	4	-	6	-	-	-	8
	Standard SA2	2	4	4	-	6	-	-	-	8
	Standard S4	2	4	4	-	6	-	-	-	8
	Standard Network-optimized SN3ne	2	4	4	-	6	-	8	-	8
	Standard S3	2	4	4	-	6	-	8	-	8

	Standard SA1	2	2	4	-	6	-	-	-	8
	Standard S2	2	4	4	-	6	-	8	-	8
	Standard S1	2	4	4	-	6	-	8	-	8
High IO	High IO IT5	-	-	-	-	-	-	-	-	8
	High IO IT3	-	-	-	-	-	-	-	-	8
Memory Optimized	Memory Optimized M5	2	4	4	-	6	-	8	-	8
	Memory Optimized M4	2	4	4	-	6	-	8	-	8
	Memory Optimized M3	2	4	4	-	6	-	8	-	8
	Memory Optimized M2	2	4	4	-	6	-	8	-	8
	Memory Optimized M1	2	4	4	-	6	-	8	-	8
Compute	Compute Optimized C4	-	-	4	-	6	-	-	-	8
	Compute Network-optimized CN3	-	-	4	-	6	-	-	-	8
	Compute C3	-	-	4	-	6	-	-	-	8
	Compute C2	-	-	4	-	6	-	-	-	8

GPU-based	GPU Compute GN6	-	-	-	-	-	-	-	-	-
	GPU Compute GN6S	-	-	4	-	6	-	-	-	-
	GPU Compute GN7	-	-	4	-	6	-	-	-	-
	GPU Compute GN8	-	-	-	4	-	-	-	8	-
	GPU Compute GN10X	-	-	-	-	6	-	-	-	-
	GPU Compute GN10Xp	-	-	-	-	-	6	-	-	-
FPGA-based	FPGA Accelerated FX4	-	-	-	-	-	6	-	-	-
Big Data	Big Data D3	-	-	-	-	6	-	-	-	8
	Big Data D2	-	-	-	-	6	-	-	-	8
	Big Data D1	-	-	-	-	6	-	-	-	-

Model	Instance Type	Number of private IPs bound to a single ENI							
		CPU: 1 core	CPU: 2 cores	CPU: 4 cores	CPU: 6 cores	CPU: 8 cores	CPU: 10 cores	CPU: 12 cores	CPU: 14 cores
Standard	Standard	6	10	10	-	20	-	-	-

	S5									
	Standard Storage Optimized S5se	-	-	20	-	20	-	-	-	
	Standard SA3	6	10	10	-	20	-	-	-	
	Standard SA2	6	10	10	-	20	-	-	-	
	Standard S4	6	10	10	-	20	-	-	-	
	Standard Network-optimized SN3ne	6	10	10	-	20	-	30	-	
	Standard S3	6	10	10	-	20	-	30	-	
	Standard SA1	1 GB memory: 2 >1 GB memory: 6	10	8 GB memory: 10 16 GB memory: 20	-	20	-	-	-	
	Standard S2	6	10	10	-	20	-	30	-	
Standard S1		6	10	10	-	20	-	30	-	30
High IO	High IO IT5	-	-	-	-	-	-	-	-	
	High IO IT3	-	-	-	-	-	-	-	-	
MEM Optimized	Memory Optimized M5	6	10	10	-	20	-	30	-	
	Memory Optimized M4	6	10	10	-	20	-	30	-	

	Memory Optimized M3	6	10	10	-	20	-	30	-
	Memory Optimized M2	6	10	10	-	20	-	30	-
	Memory Optimized M1	6	10	10	-	20	-	30	-
Compute	Compute Optimized C4	-	-	10	-	20	-	-	-
	Compute Network-optimized CN3	-	-	10	-	20	-	-	-
	Compute C3	-	-	10	-	20	-	-	-
	Compute C2	-	-	10	-	20	-	-	-
GPU-based	GPU Compute GN6	-	-	-	-	-	-	-	-
	GPU Compute GN6S	-	-	10	-	20	-	-	-
	GPU Compute GN7	-	-	10	-	20	-	-	-
	GPU Compute GN8	-	-	-	10	-	-	-	30
	GPU Compute GN10X	-	-	-	-	20	-	-	-

	GPU Compute GN10Xp	-	-	-	-	-	20	-	-
FPGA-based	FPGA Accelerated FX4	-	-	-	-	-	20	-	-
Big Data	Big Data D3	-	-	-	-	20	-	-	-
	Big Data D2	-	-	-	-	20	-	-	-
	Big Data D1	-	-	-	-	20	-	-	-

Related Products

Last updated：2024-01-11 16:04:31

For ENI-related products information, see the following table:

Product Name	Relationship with ENI
CVM	You can connect the CVM to the network by binding an ENI to it.
VPC	An ENI is VPC-specific.
EIP	EIPs are bound with private IPs of the ENI.
Security Group	An ENI can be bound with one or more security groups.
Flow Log	A flow log can be created for an ENI. The system will collect the traffic data on the ENI and deliver it to CLS for query.