Enterprise Router

FAQs

Issue	01
Date	2024-12-09

Security Declaration

Vulnerability

Huawei's regulations on product vulnerability management are subject to the *Vul. Response Process.* For details about this process, visit the following web page:

https://www.huawei.com/en/psirt/vul-response-process

For vulnerability information, enterprise customers can visit the following web page:

https://securitybulletin.huawei.com/enterprise/en/security-advisory

Contents

Enterprise Router
FAQs

1 Why Traffic Can't Be Forwarded from a VPC with a
Route Destination of 0.0.0.0/0 to Its Enterprise
Router?

1 Why Traffic Can't Be Forwarded from a VPC with a Route Destination of 0.0.0.0/0 to Its Enterprise Router?

Scenarios

Traffic cannot be forwarded from a VPC to the enterprise router that the VPC is attached to if you set the destination of a route to 0.0.0.0/0 in the VPC route table and:

- An ECS in the VPC has an EIP bound.

  📖 **NOTE**

  Refer to solution 1.

- ELB, NAT Gateway, VPC Endpoint and DCS are deployed in the VPC.

  📖 **NOTE**

  Refer to solution 1 or solution 2.

  When method 2 is used, if a VPC wants to access public network, the traffic from the VPC is forwarded to the enterprise router and then to the public network. For this reason, if a VPC accesses the public network using an EIP, do not use this method.

Solutions

Select a solution based on your actual service scenario.

- Solution 1: Change the destination (0.0.0.0/0) of the default route to a specific IP address range, for example, 192.168.0.0/16.
- Solution 2: Add eight routes with specific IP address ranges as the destination to replace the default route (with a destination of 0.0.0.0/0).

Table 1-1 Route destinations and next hops

Destination	Next Hop
128.0.0.0/1	Enterprise router
64.0.0.0/2	Enterprise router

Enterprise Router
FAQs

1 Why Traffic Can't Be Forwarded from a VPC with a
Route Destination of 0.0.0.0/0 to Its Enterprise
Router?

Destination	Next Hop
32.0.0.0/3	Enterprise router
16.0.0.0/4	Enterprise router
8.0.0.0/5	Enterprise router
4.0.0.0/6	Enterprise router
2.0.0.0/7	Enterprise router
1.0.0.0/8	Enterprise router

Enterprise Router
FAQs

2 How Do I Route Traffic to 100.64.x.x Through an
Enterprise Router?

2 How Do I Route Traffic to 100.64.x.x Through an Enterprise Router?

Scenarios

A route with 100.64.x.x as the destination and an enterprise router as the next hop cannot be added to a VPC route table.

Solutions

If you want to route traffic to 100.64.x.x through an enterprise router, you need to create a transit VPC. **Figure 2-1** shows the network diagram.

Figure 2-1 Transit VPC network diagram
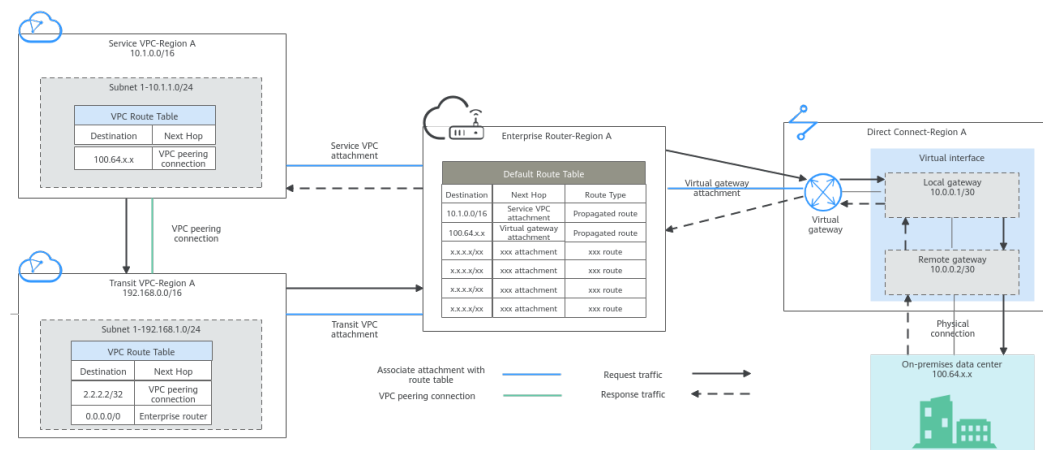
The request traffic from the service VPC to the on-premises data center will be forwarded through the transit VPC, but the response traffic will not. For details, see **Table 2-1**.

Enterprise Router
FAQs

2 How Do I Route Traffic to 100.64.x.x Through an
Enterprise Router?

Table 2-1 Network traffic flows

Path	Description
Request traffic: service VPC → transit VPC → enterprise router → virtual gateway → on-premises data center	1. The service VPC route table has a route with the VPC peering connection as the next hop to forward traffic from the service VPC to the transit VPC. 2. The transit VPC route table has a route with next hop set to the enterprise router to forward traffic from the transit VPC to the enterprise router. 3. The enterprise router route table has a route with next hop set to virtual gateway attachment to forward traffic from the enterprise router to the virtual gateway. 4. The virtual gateway is connected to the virtual interface. Traffic from the virtual gateway is forwarded to the physical connection through the remote gateway of the virtual interface 5. Traffic is sent to the on-premises data center over the connection.
Response traffic: on-premises data center → virtual gateway → enterprise router → service VPC	1. Traffic is forwarded to the virtual interface through the connection. 2. The virtual interface is connected to the virtual gateway. Traffic from the virtual interface is forwarded to the virtual gateway through the local gateway of the virtual interface. 3. Traffic is forwarded from the virtual gateway to enterprise router. 4. The enterprise router route table has a route with next hop set to the service VPC attachment to forward traffic from the enterprise router to the service VPC.

The required resources and routes are as follows:

- **Table 2-2**: Required service VPC, transit VPC, enterprise router, and Direct Connect connection that connects the cloud and the on-premises data center

- **Table 2-3**: Required routes of the service VPC, transit VPC, and enterprise router

Table 2-2 Resource planning

Resource	Quantity	Description
VPC	2	Service VPC that your services are deployed and needs to be attached to the enterprise router ● VPC CIDR block: 10.1.0.0/16 ● Subnet CIDR block: 10.1.1.0/24

Enterprise Router
FAQs

2 How Do I Route Traffic to 100.64.x.x Through an
Enterprise Router?

Resource	Quantity	Description
		Transit VPC that is connected to the service VPC over a VPC peering connection and needs to be attached to the enterprise router • VPC CIDR block: 192.168.0.0/16 • Subnet CIDR block: 192.168.1.0/24
Enterprise router	1	Three attachments on the enterprise router: • Service VPC attachment: service VPC • Transit VPC attachment: transit VPC • Virtual gateway attachment: virtual gateway of Direct Connect

Direct Connect	1	• Connection
		• Virtual gateway that needs to be attached to the enterprise router
		• Virtual interface
		  – Local gateway: 10.0.0.1/30
		  – Remote gateway: 10.0.0.2/30
		  – Remote subnet: subnet of the on-premises data center (100.64.x.x)

Table 2-3 Route planning

Route Table	Destination	Next Hop	Route Type
Service VPC	100.64.x.x	VPC peering connection	Static route (custom)
Transit VPC	2.2.2.2/32 **NOTE** 2.2.2.2/32 is mandatory and must be added.	VPC peering connection	Static route (custom)
	0.0.0.0/0	Enterprise router	Static route (custom)
Enterprise router	10.1.0.0/16	Service VPC attachment	Propagated route
	100.64.x.x	Virtual gateway attachment	Propagated route

Step 1 **Submit a service ticket** to request 100.64.x.x as the destination for **Step 4**.

Step 2 Create a transit VPC, attach it to the enterprise router, and associate the transit VPC with the default route table of the enterprise router.

Enterprise Router
FAQs

2 How Do I Route Traffic to 100.64.x.x Through an
Enterprise Router?

- The subnet of the transit VPC cannot overlap with that of the service VPC, or the VPC peering connection to be created in **Step 3** cannot take effect.
- The transit VPC cannot have the following situations. Otherwise, the default route (0.0.0.0/0) to be configured in **Step 4** cannot forward traffic.
  - An ECS in the VPC has an EIP bound.
  - The VPC is being used by ELB (either dedicated or shared load balancers), NAT Gateway, VPC Endpoint, and DCS.

Step 3 Create a VPC peering connection between the service VPC and transit VPC.

Creating a VPC Peering Connection with Another VPC in Your Account

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NOTICE

You do not need to add routes for the VPC peering connection. For details about the routes to be added, see **Step 4**.

Step 4 Add routes to the VPC route tables.

For details about required routes, see **Table 2-3**.

1. Add the route to the service VPC route table.
2. Add two routes to the transit VPC route table.

----End

Enterprise Router
FAQs

3 How Do I Enable Two Attachments of an
Enterprise Router to Learn Routes from Each Other?

3 How Do I Enable Two Attachments of an Enterprise Router to Learn Routes from Each Other?

If you want two attachments of an enterprise router to learn routes from each other, the router and each attachment must have a unique ASN. In this way, the enterprise router advertises the learned route information between the attachments.

If you want a global DC gateway and a VPN gateway attached to an enterprise router to learn routes from each other, their ASNs can be as follows:

- Enterprise router: 64525
- Global DC gateway attachment: 64512 (BGP ASN of the global DC gateway)
- VPN gateway attachment: 64515 (BGP ASN of the VPN gateway)

☐ NOTE

VPC attachments do not support route learning.