Intelligent Edge Cloud

FAQs

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HUAWEI

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1 Frequent Questions

When Would I Need IEC?

Do I Need to Reconstruct the Legacy System If I Want to Use IEC? How Can I Do That?

How Can I Migrate My Workloads to IEC?

How Is the IEC Service Billed?

What Are the Differences Between HUAWEI CLOUD Regions and IEC Edge Regions?

What Is the Relationship Between IEC Edge Sites and IEC Edge Regions?

How Can I Access Other Cloud Services in the HUAWEI CLOUD Region from IEC?

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2 Product Consultation

2.1 When Would I Need IEC?

IEC is a cloud service dedicated to scenarios such as interactive live streaming, interactive education, application acceleration, and self-built CDN. For details, see **Application Scenarios**.

Choose IEC if you want to save bandwidth cost, reduce network latency, and improve the response speed.

For example, in interactive live streaming, you can use IEC to run workloads such as audio and video transcoding, on-screen comment distribution, and content review to improve the experience of both steamers and audiences.

2.2 What Is the Relationship Between IEC and HUAWEI CLOUD?

IEC is a cloud service provided by HUAWEI CLOUD for **edge computing**.

- Deployment location: IEC is deployed closer to enterprises and areas with a large number of active users. Other cloud services are generally deployed in central regions of HUAWEI CLOUD (also known as the central cloud). IEC allows you to access the cloud and use cloud resources at areas closer to your businesses.
- User experience: IEC uses the same architecture as the central cloud and ensures consistent experience in using resources such as compute, storage, and network resources. IEC also provides IAM permission management and monitoring as you can experience on the central cloud.

2.3 What Are the Differences Between IEC, IES, IEF, IoT Edge, and CDN?

Table 2-1 compares IEC with IESIEF, IoT Edge, and CDN.

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Table 2-1 Differences between IEC and related products

Product	IEC	IES	IEF	IoT Edge	CDN
Outline	A distributed edge cloud service with wide coverage	A fully managed service that extends HUAWEI CLOUD infrastructure to the on-premises facility (IES is in the OBT. **Apply for the OBT permission**.)	Edge-cloud synergy based on cloud native technologies	IoT edge "cerebellum"	An intelligent virtual network constructed on existing Internet infrastructure
Capability	Provides multi-architecture computing to meet various requirements and allows you to deploy services nearby to reduce network latency.	IES extends the HUAWEI CLOUD infrastructure and cloud services to your on-premises data center to allow you to enjoy ultra-low latency and faster access to applications on the cloud.	Delivers applications from the cloud to the edge to simplify application deployment and manages applications on the cloud.	Focuses on edge device management and provides computing and intelligent services nearby to meet the requirements of real-time services and application intelligence.	Speeds up site response and improves site availability, breaking through the bottlenecks caused by low bandwidth, heavy user access traffic, and uneven distribution of network nodes.
Scenario	Live streaming, edge rendering acceleration, and cloud gaming	Innovative services, cloud migration, and local data storage	Campus video analysis, visual product inspections, and predictive maintenance	Smart campus, intelligent transportation, and smart manufacturing	Content acceleration, such as website acceleration and download acceleration

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Deployment Location	Carrier equipment room	On-premises data center	Any location	Any location	Carrier equipment room

2.4 Do I Need to Reconstruct the Legacy System If I Want to Use IEC? How Can I Do That?

It depends on your environment and requirements. Before you start, **consult the HUAWEI CLOUD professional team**.

Consider the following aspects when you determine whether to reconstruct your system:

- **Workload migration**

  Migrate workloads that are sensitive to network latency or need to be quickly deployed in batches nearby to IEC. Migrate workloads that often generate a large amount of data and need to run stably for a long time to the central cloud, or retain them on the central cloud if you have migrated them to the cloud. For details, see **How Can Migrate My Workloads to IEC?**

- **Consistent experience**

  IEC uses the same architecture as the central cloud and ensures consistent experience in using basic resources such as compute, storage, and network resources. You only need to check the **instance specifications** supported by IEC. If you want specifications other than those provided by IEC, contact customer service.

- **Data processing and communication methods**

  Consider data processing and communication method changes that might be caused by workload migrations.

  For example, you have a website deployed in the CN North-Beijing4 region, the database and website are deployed on different cloud servers, and you use OBS for data storage. The database, website, and OBS communicate with each other over the private network. Now you plan to deploy the website on an IEC edge instance, the edge instance will need an EIP to communicate with the database and OBS over the Internet, and the network latency for the website to obtain the data stored in OBS buckets will increase accordingly. In this case, you need to evaluate whether your legacy system supports this feature and whether the system can be reconstructed.

2.5 How Can I Migrate My Workloads to IEC?

- **Migrating workloads from ECS to IEC**

  a. Create a private image from the ECS that you want to migrate on the IMS console.

  b. Use the created private image as the source to create an edge private image on the IEC console.

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c. Use the edge private image to create an edge instance on the IEC console.

   For details, see **Creating an Edge Private Image Using IMS**.

- **Migrating workloads from your on-premises data center or another public cloud platform to IEC**

  Use the Internet to migrate your workloads. If you have a large volume of workloads, contact the HUAWEI CLOUD professional team to obtain an appropriate migration solution. For details, see **Service Consultation**.

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3 Billing

3.1 How Is the IEC Service Billed?

IEC is billed in the pay-per-use mode. You will be charged based on the usage duration of edge instances and edge disks, and the edge bandwidth.

For billing details, see **Billing**..

3.2 How Can I Purchase IEC Resources?

To use IEC, **top up** your HUAWEI CLOUD account.

IEC is billed in the pay-per-use mode. You will be charged based on the usage duration of edge instances and edge disks, and the edge bandwidth.

3.3 How Can I Stop Being Charged for Using IEC?

- To stop being charged for edge bandwidth, **delete the bandwidth**.
- To stop being charged for edge instances and edge disks, delete all edge instances.

Deleted edge instances cannot be recovered. Exercise caution when performing this operation.

3.4 What Is the Enhanced 95th Percentile Bandwidth Billing of IEC?

IEC provides enhanced 95th percentile bandwidth billing based on traffic. Enhanced 95th percentile bandwidth is a pay-per-use billing mode, which does not require prepayment. The monthly fee is settled at the end of each calendar month.

Enhanced 95th percentile bandwidth billing allows you to use more bandwidth after you pay for the baseline bandwidth. You are charged based on the required duration and the bandwidth volume after eliminating some top sampled usage from a billing period.

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Billing Formula

Monthly peak bandwidth x Monthly peak bandwidth price x Shared bandwidth in-use days/Calendar days of a month

Billing Cycle

Bills are generated for each calendar month.

Monthly Peak Bandwidth Price

The price is preset and has nothing to do with the number of days contained in a month.

Shared Bandwidth Retention Days

The instance retention period is calculated based on your actual usage time. For example, if you apply for an instance at 12:00 a.m., it is counted as half a day.

Shared bandwidth in-use days = Number of collected bandwidth values in a month/288

Monthly Peak Bandwidth

The monthly peak bandwidth is calculated based on the enhanced 95 percentile billing mode in which some peak bandwidth values are discarded. It must be higher than the monthly baseline bandwidth. If the monthly peak bandwidth is less than or equal to the monthly baseline bandwidth, you will be charged based on the monthly baseline bandwidth. Otherwise, you will be charged based on the actual monthly peak bandwidth.

Daily Baseline Bandwidth

Daily baseline bandwidth = Baseline percentage (20%) x Shared bandwidth

In enhanced 95 billing mode, the shared bandwidth can be adjusted in real time, and the adjustment takes effect immediately. After the shared bandwidth is adjusted, the baseline bandwidth changes accordingly. The daily baseline bandwidth is calculated based on the maximum baseline bandwidth set for a day. For example, if the bandwidth is adjusted from 400 Mbit/s to 300 Mbit/s and then to 600 Mbit/s during a day, the daily baseline bandwidth is 120 (600 x 20%) Mbit/s.

Monthly Baseline Bandwidth

The bandwidth can be adjusted frequently to suit the traffic requirements during a month.

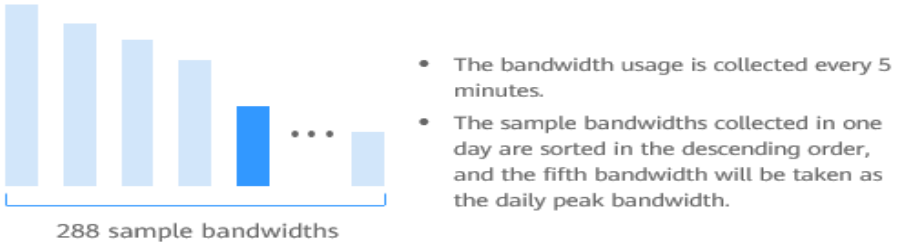
The monthly baseline bandwidth is calculated based on the following formula (only the integer is retained in the calculated result): Monthly baseline bandwidth = (Baseline bandwidth 1 x Number of days using baseline bandwidth 1 + Baseline bandwidth 2 x Number of days using baseline bandwidth 2 + ... + Baseline bandwidth n x Number of days using baseline bandwidth n)/Number of days using all baseline bandwidths in a month.

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Calculation Method for the Monthly Peak Bandwidth

- Daily peak bandwidth
  - Inbound and outbound traffic data is collected every five minutes.
  - The averages of both inbound bandwidth and outbound bandwidth within five minutes are calculated, and the larger one is used as the bandwidth for that collection.
  - After all meter readings within a day are obtained, they are sequenced in descending order. The top four peak bandwidth values are discarded, and the fifth peak bandwidth value is used as the daily peak bandwidth.

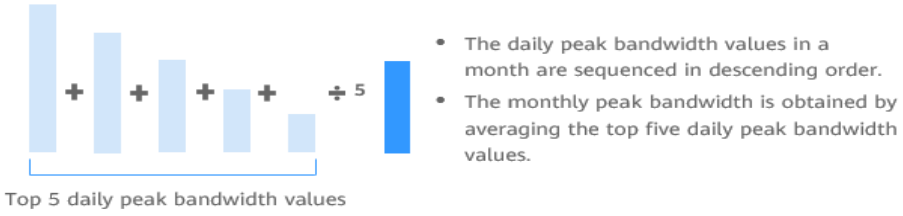
    Figure 3-1 Daily peak bandwidth

    If less than five peak bandwidth values are obtained in a day, the last value in the peak bandwidth sequence is used as the daily peak bandwidth. The daily peak bandwidth is an integer (any fractional parts are discarded).
- Monthly peak bandwidth

  At the end of each month, the daily peak bandwidth values are sequenced in descending order. The average of the top five daily peak bandwidth values is the monthly peak bandwidth (retain only the integer).

  Figure 3-2 Monthly peak bandwidth

  If less than five daily peak bandwidth values are obtained, the average of all the daily peak bandwidth values in the month is the monthly peak bandwidth. The monthly peak bandwidth is an integer (any fractional parts are discarded).

  The larger value between the baseline bandwidth of the month and the average of daily peak bandwidth values is used as the monthly peak bandwidth. If the baseline bandwidth of a month is greater than the average of the daily peak bandwidth values, the monthly peak bandwidth is equal to

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the baseline bandwidth of the month. Otherwise, the monthly peak bandwidth is equal to the average of daily peak bandwidth values.

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4 Permissions

4.1 Why a Message Is Displayed Indicating that I Do Not Have the Permissions to Access the IEC Console?

This message appears when you log in to the IEC console as an IAM user that has not been assigned required permissions.

Log in to the IEC console using your account and assign required permissions for the IAM user.

For more information, see **Creating an IAM User and Granting IEC Permissions**.

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5 Regions and Sites

5.1 What Are the Differences Between HUAWEI CLOUD Regions and IEC Edge Regions?

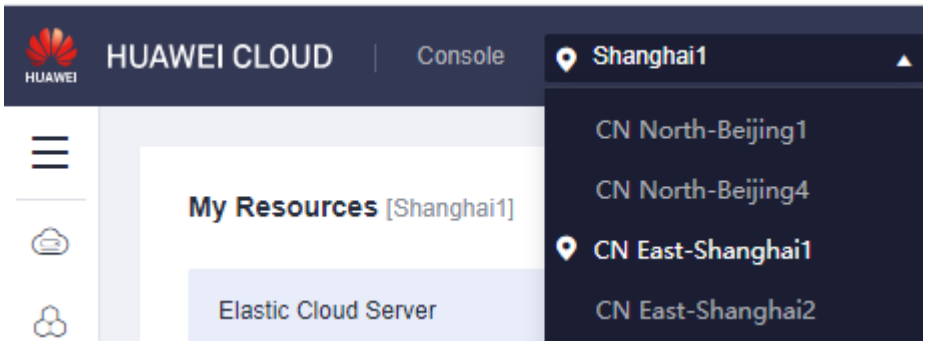
- HUAWEI CLOUD regions

Regions are divided from the dimensions of geographical location and network latency. Public services, such as Object Storage Service (OBS), Virtual Private Cloud (VPC), and Image Management Service (IMS), are shared within the same region. To reduce access latency, you can select a region closest to you.

HUAWEI CLOUD provides region-specific services such as Elastic Cloud Server (ECS), and global services such as CDN. From this perspective, IEC is a global service. When you grant **Tenant Administrator** and **Tenant Guest** permissions, select HUAWEI CLOUD regions where IEC is available. For details, see **Permissions Management**.

Figure 5-1 shows how to select a region on the management console.

Figure 5-1 HUAWEI CLOUD regions



- IEC edge regions

  When you use IEC, your workloads are distributed at different edge sites deployed at one or more locations.

  An edge site is a city-level site established by one or more carriers and is close to applications. Edge sites provide physically isolated resource pools and

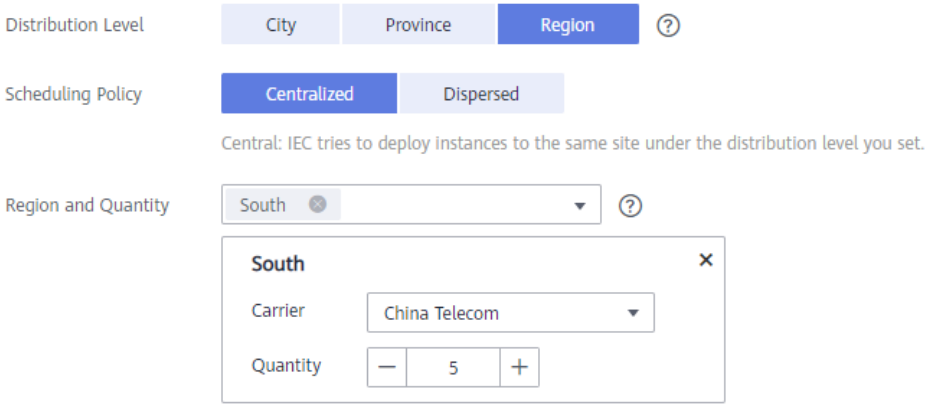
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multiple-architecture computing, storage, and network capabilities. Your workloads can be flexibly deployed at the nearest edge sites to reduce network latency and costs.

An edge region is an area divided based on the physical location of edge sites. One edge region includes multiple edge sites that are close to each other. IEC provides three levels of edge region: city, province, and region. **Figure 5-2** shows the edge locations at different levels.

For more information about the relationship between edge sites and edge locations, see **What Is the Relationship Between IEC Edge Sites and Edge Locations?**

Figure 5-2 Edge regions



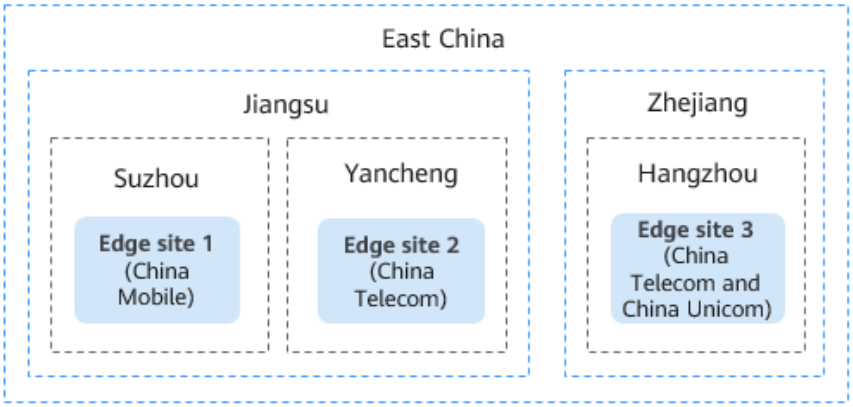
5.2 What Is the Relationship Between IEC Edge Sites and IEC Edge Regions?

- An edge site is a city-level site established by one or more carriers and is close to applications. Edge sites provide physically isolated resource pools and multi-architecture computing, storage, and network capabilities. Workloads can be flexibly deployed at the nearest edge sites to reduce network latency and costs.
- An IEC edge region is an area divided based on the physical location of edge sites. One edge region includes multiple edge sites that are close to each other. IEC provides three levels of edge region: city, province, and region.

  Figure 5-3 shows the relationship between IEC edge sites and edge locations.

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Figure 5-3 Relationship between edge sites and edge locations



- Region-level edge location East China includes two provincial edge locations: Jiangsu and Zhejiang.
- Provincial-level edge location Jiangsu includes two city-level edge locations: Suzhou and Yancheng. Provincial-level edge location Zhejiang includes one city-level edge location: Hangzhou.
- Edge site 1 is established by China Mobile in Suzhou. Edge site 2 is established by China Telecom in Yancheng. Edge site 3 is established by China Telecom and China Unicom in Hangzhou.

The locations mentioned in the figure are for reference only. The actual IEC edge locations are subject to those displayed on the IEC console.

5.3 What Is the Relationship Between IEC Sites?

Each IEC edge site is a city-level site established by one or more carriers. Edge sites are physically isolated from each other and the network is disconnected.

You can create an edge service across sites. That is, an edge service can contain multiple edge sites.

5.4 In Which Cities Does IEC Have Sites Deployed?

IEC has sites in cities such as Yangzhou, Dongguan, and Shijiazhuang.

You can log in to the IEC console and view all sites on the **Set Instance Distribution** page during edge service creation.

5.5 Where Is the Geographic Location of the Host Where the IEC Instance Resides?

An IEC instance belongs to a specific edge site. The geographic location of the edge site is the geographic location of the host where the instance is located.

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An edge site is a city-level site established by one or more carriers and is close to terminal applications. Plenty of IEC edge sites are available in the Chinese mainland.

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6 Edge Instances

6.1 What Is the Relationship Between IEC Instances and HUAWEI CLOUD ECSs?

Edge instances on IEC are independent of ECSs. They have similar functions, but are used in different scenarios.

An edge instance is a cloud server that consists of CPU, memory, OS, and hard disk and is dedicated for edges.

Edge instances you create on the IEC console or by calling the IEC API belong only to IEC and are not related to ECSs you create on the ECS console or by calling the ECS API. You cannot manage edge instances through ECS. Similarly, you cannot manage ECSs on IEC.

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7 Edge Images

7.1 What Is the Relationship Between IEC Images and IMS Images?

IEC images can be public or private images.

- Public image: Its functions are similar to those of the public image provided by HUAWEI CLOUD **IMS**. However, the two have no relationship, and each carries different services.

  You cannot manage IEC public images on HUAWEI CLOUD IMS. Similarly, you cannot manage public images created on HUAWEI CLOUD IMS on IEC.

- Private image: You can use an IMS private image to create an edge private image.

  You can create a private image or select an existing private image on **IMS** and use the private image to create an edge private image on the IEC console.

  The edge private image created on the IEC console using an IMS private image is independent of the source IMS private image. Modifications to the source IMS private image do not affect the edge private image. The created edge private image cannot be modified. If the edge image cannot meet your requirements, you can create a new one.

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8 Edge Networks

8.1 What Is the Relationship Between the VPC and EIP in the Context of IEC and the VPC Service and the Elastic IP Service?

Edge network services are independent of cloud network services, such as the VPC service and the Elastic IP service. Edge network services are dedicated for edges. They have similar functions as cloud network services, but are used in different scenarios.

For example, an edge VPC you create on the IEC console or by calling the IEC API belongs only to IEC and is not related to the VPC you create using the VPC service. An edge VPC you create on IEC cannot be managed through the VPC service, and a VPC you create on the VPC console cannot be managed using IEC.

8.2 How Can I Access Other Cloud Services in the HUAWEI CLOUD Region from IEC?

You can use the Internet to access other cloud services.

For example, if you have created an ECS (**ECS01**) with an EIP (**EIP01**) bound on the ECS console and have created an edge instance (**instance01**) on the IEC console, you can log in to **instance01** and access **ECS01** using **EIP01**.

8.3 What Are the Differences Between EIPs, Private IP Addresses, and Virtual IP Addresses?

- An EIP can be used to access the Internet and can be bound to only one instance.
- A private IP address is used for communication within an internal network and cannot be used to access the Internet.

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- A virtual IP address is an IP address that is not allocated to an edge instance NIC.

For more information, see **Edge Network Overview**.

8.4 What Are the Differences Between Security Groups and Network ACLs?

Table 8-1 lists the differences between security groups and network access control lists (ACLs).

Table 8-1 Differences between security groups and network ACLs

Category	Security Group	Network ACL
Targets	Operates at the instance level	Operates at the subnet level
Rules	Supports only **Allow** rules.	Supports both **Allow** and **Deny** rules.
Priority	If security group rules conflict, the overlapping elements of these rules take effect.	If network ACL rules conflict, the rule with the highest priority takes effect.
Usage	Automatically applies to instances in the security group that is selected during instance creation. You must select a security group when creating instances.	Applies to all instances in the subnets associated with the network ACL. Selecting a network ACL is not allowed during subnet creation. You must create a network ACL, associate subnets with it, add inbound and outbound network rules, and enable network ACL. The network ACL then takes effect for the associated subnets and instances in the subnets.
Packets	Only packet filtering based on the 3-tuple (protocol, port, and peer IP address) is supported.	Only packet filtering based on the 5-tuple (protocol, source port, destination port, source IP address, and destination IP address) is supported.

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9 Capacity Expansion

9.1 Does IEC Support Capacity Expansion?

Yes.

If needed, you can add edge instances to the edge services in the **Running** state to expand capacity.

For details, see **Expanding an Edge Service**.

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A Change History

Released On	Description
2021-04-12	Added some frequent questions.
2020-10-30	This issue is the first official release.

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