Huawei Cloud EulerOS (HCEOS) 2.0.2509

Service Overview

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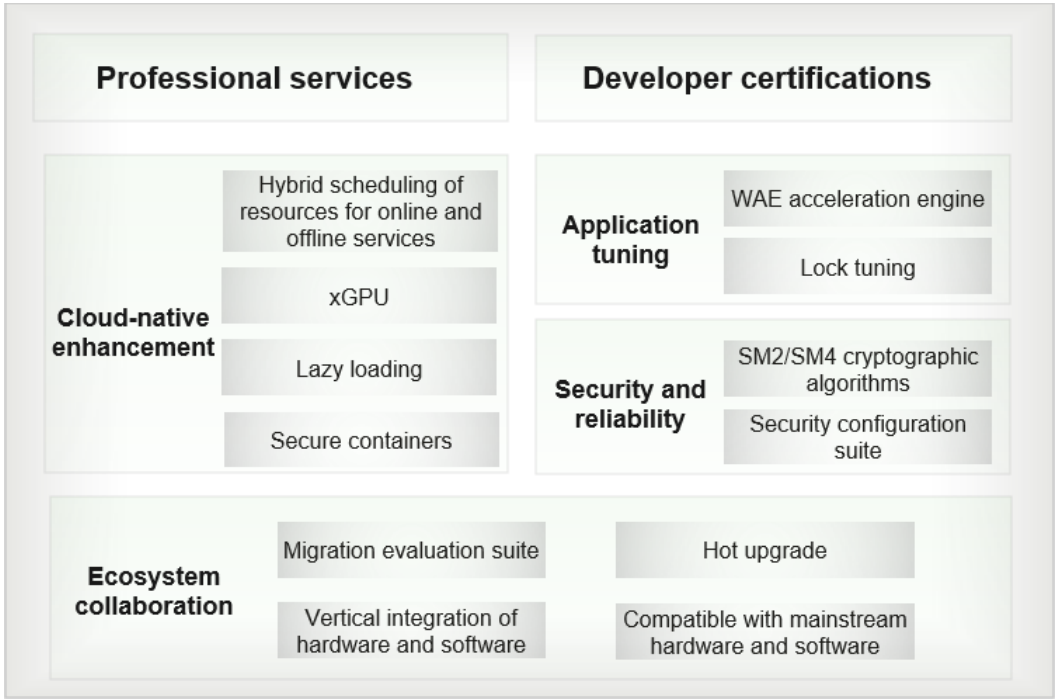
1 What Is Huawei Cloud EulerOS?

Definition

Huawei Cloud EulerOS (HCEOS) is an openEuler-based cloud operating system.

HCEOS offers cloud native, high-performing, secure, and easy-to-maintain capabilities. This accelerates service migration to the cloud and promotes application innovation. You can use it to replace operating systems such as CentOS and EulerOS.

Figure 1-1 Huawei Cloud EulerOS



Features

- Linux kernel 5.10: HCEOS uses Linux kernel 5.10 to deliver enterprise-class reliability and incorporates the latest Linux community-developed capabilities.
- Enhanced capabilities: Enhanced cloud native scheduling, hierarchical memory expansion, OS migration, and compatibility evaluation.

- Excellent security: The OS attains MLPS 2.0 and CC EAL4+ certifications.
- Various compilers: The OS uses gcc 10.3.1, binutils 2.37, and glibc 2.34 to enhance stability and compatibility with other software.
- Interaction with mainstream architectures: The OS takes advantages of architectures such as x86 and Arm, in terms of function adaptation, performance improvement, and stability hardening, to keep running smoothly and reliably on any platform.
- Compatibility with common open-source software: The OS is compatible with software such as MySQL, Tomcat, and Nginx, helping you efficiently deploy services.

Huawei Cloud EulerOS Images

Version	Image	Description
Huawei Cloud EulerOS 2.0	Huawei Cloud EulerOS 2.0 Enterprise Edition (64-bit, x86)	x86-compatible standard image
Huawei Cloud EulerOS 2.0	Huawei Cloud EulerOS 2.0 Enterprise Edition (64-bit, Arm)	Arm-compatible standard image

2 Product Advantages

- Vertical integration of cloud services: HCEOS works with the cloud platform to provide synergy between guest and host OSs so that applications can perform better. Using HCEOS improves the competitiveness of Elastic Cloud Server (ECS), Cloud Container Engine (CCE), Elastic Load Balance (ELB), and database services.
- Cloud-native hybrid deployment: Online and offline containerized applications can be deployed in the same cluster to maximize resource utilization. This is an industry-leading resource allocation solution. You will get cloud-native infrastructure with less resource consumption, faster startup, and higher resource utilization.
- Efficient deployment: HCEOS helps VM start up faster. It improves the efficiency of batch deployment.
- Secure and reliable: The OS attains MLPS 2.0 and CC EAL4+ certifications.
- openEuler ecosystem: Huawei has been one of the top five contributors to Linux for many consecutive years and has made outstanding contribution to the Linux kernel. HCEOS supports mainstream southbound and northbound software and hardware. It is a great alternative to CentOS.

3 Application Scenarios

- As the preferred choice for ECSs and BMSs to improve resource utilization and achieve compelling service performance

  HCEOS is an excellent choice for enterprises, financial institutions, and manufacturers planning to deploy or migrate their applications and services to the cloud.

  - Application-specific optimization: When database, big data, HPC, virtualization, and container applications are deployed in HCEOS, MySQL and Nginx services deliver better performance than when they are deployed in other OSs.
  - Faster startup: Only required basic components are loaded to suit specific ECSs and BMSs, so they can bootup faster.

- As the preferred choice for CCE containers to reduce costs and improve efficiency

  If online and offline services are deployed separately, lots of resources are left idle and the overall resource utilization is low.

  - Optimized CPU utilization: HCEOS uses a hybrid deployment engine and resource isolation technologies to ensure that the CPU usage of CCE containers reaches 40% to 60% while keeping the QoS lower than 1%. In this way, applications will not suffer from frame freezing and you can enjoy smoother experience.
  - Optimized auto scaling: HCEOS functions as an image that contains the minimum component set for CCE containers.

- As an alternative to CentOS

  The discontinuation of CentOS has created significant challenges for the O&M of existing sites and the construction of new sites. HCEOS is a good solution because it is:

  - Secure and reliable: HCEOS attains MLPS 2.0 and CC EAL4+ certifications.

- For cloud-device synergy

  HCEOS supports both cloud-based and device-side application development, making it an ideal choice for cloud-device synergy.

  Applications are developed in a way that the cloud and device sides work together (for example, APIs developed for device-cloud interaction), and

resources can be flexibly expanded on demand while services are running. This helps applications to gain the strengths of both device and cloud.

4 Related Services

HCEOS needs to work with other services, such as ECS, BMS, IMS, VPC, and EVS, to provide a convenient, reliable, and secure system environment.

Figure 4-1 Related services

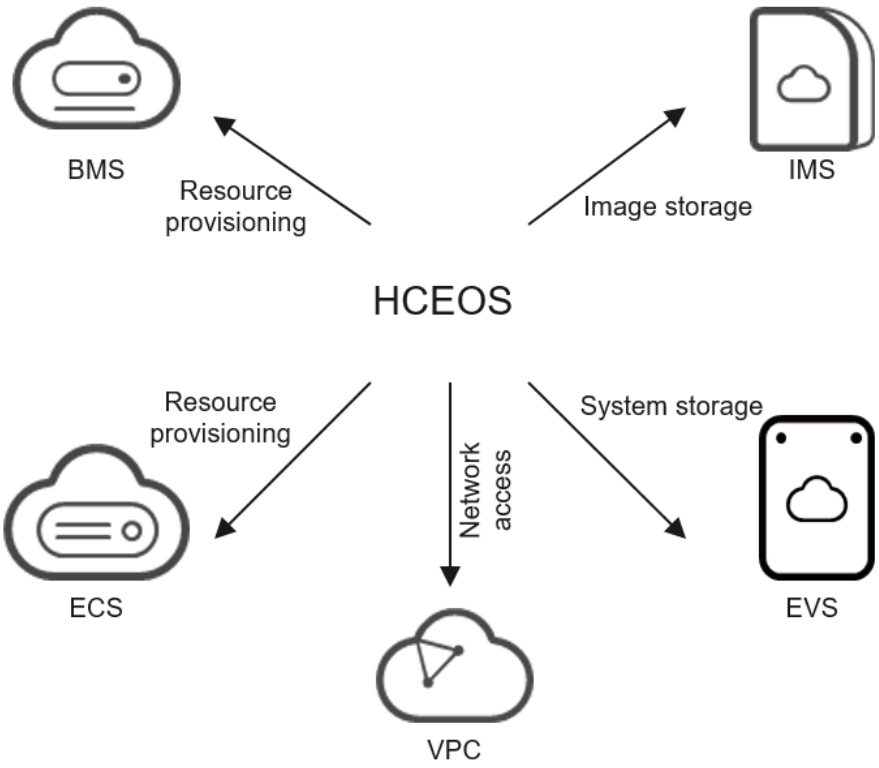


Table 4-1 Related services

Cloud Service	Description
Elastic Cloud Server (ECS)	An ECS is a cloud server where an OS runs. It provides computing resources for HCEOS.

Cloud Service	Description
Elastic Volume Service (EVS)	EVS is used to store files required for running HCEOS. In addition, HCEOS can manage EVS storage resources of a cloud server and provide them as files or file systems for upper-layer services.
Image Management Service (IMS)	IMS provides HCEOS images, including public, private, and shared images.
Bare Metal Server (BMS)	A BMS is another type of cloud server where an OS runs. Like an ECS, a BMS provides computing resources for HCEOS.
Virtual Private Cloud (VPC)	A VPC provides network resources for cloud servers. With VPC, you can configure a secure and flexible network environment for HCEOS.

5 OSs That Can Be Migrated

The following table lists the mapping between HCEOS and OSs that can be migrated.

Table 5-1 Supported x86-compatible OSs

OS Series	Source OS	Target OS
CentOS	64-bit: CentOS 7.9/7.8/7.7/7.6/7.5/7.4/7.3/7.2/7.1/7.0 64-bit: CentOS 8.3/8.2/8.1/8.0	Huawei Cloud EulerOS 2.0 Enterprise Edition (64-bit, x86)

Table 5-2 Supported Arm-compatible OSs

OS Series	Source OS	Target OS
CentOS	64-bit: CentOS 7.9/7.8/7.6/7.5 64-bit: CentOS 8.2	Huawei Cloud EulerOS 2.0 Enterprise Edition (64-bit, Arm)

6 Support Plans

HCEOS provides the "5+5+3" lifecycle mode. Each version has a 13-year lifecycle.

- 5-year mainstream support: compatibility with new hardware (such as CPUs, disks, and network interfaces) and features, and issue and CVE fixing
- 5-year extended support: issue and CVE fixing
- (Optional) 3-year beyond end of support: triggered by customer issues (bug fixing and CVE fixing are not proactively provided)

7 Ecosystem Certification

As a commercial release of openEuler, inherits and is compatible with the software and hardware ecosystems of openEuler 22.03 LTS. It is also further optimized to provide more comprehensive functions and performance.

In addition to the deliverables required by openEuler, HCEOS requires you to provide the following deliverables:

- For software compatibility evaluation, you need to provide an HCEOS software compatibility evaluation report. You can generate the report by referring to "User Guide" > "Migrating an OS" > "Using x2hce-ca to Evaluate the Compatibility" in **Huawei Cloud EulerOS (HCEOS) 2.0.2509 Usage Guide (for Huawei Cloud Stack 8.6.0)**.
- For hardware compatibility evaluation, you need to provide an HCEOS hardware compatibility evaluation report. You can generate the report by referring to "User Guide" > "Tools" > "Hardware Compatibility Test Tool" in **Huawei Cloud EulerOS (HCEOS) 2.0.2509 Usage Guide (for Huawei Cloud Stack 8.6.0)**.

