



# H3C CloudOS

# Full-stack Cloud Platform

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New H3C Technologies Co., Limited

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## Overview

H3C CloudOS, a full-stack cloud platform, converges AI, Big Data, and IoT as well as the capability to meet all needs of scenarios in various industries. Leveraging the robust computing power, voluminous storage, and intelligent data analysis, it helps users to timely deliver outstanding application functionalities and processes in a complex, heterogeneous IT environment. In addition, the CloudOS helps various industries realize digital transformation by supporting their initiatives to embrace containers and microservices.

H3C CloudOS has realized unified management and smart dispatching of data center's heterogeneous resources, providing support for upper-level XaaS. Based on stable and reliable IaaS service, it efficiently leverages resources in data center infrastructure and helps to complete digitalization by upgrading them from cost centers to value centers through the automated delivery of unified operation & maintenances. By leveraging H3C's DevOps experiences, it helps users to develop business; operate unified management systems; shorten business delivery cycles; and build new business pipelines. Powered by microservices, it provides users with industry-leading microservices frameworks, which allow users to focus more on their businesses, benefit from speedy development and highly-efficient management enabled by microservice applications, and help users migrate their businesses to cloud platform. With fully supported IaaS and container services, it can integrate PaaS-related capabilities such as database-as-a-service, middleware service, application management services to effectively apply to multiple scenarios such as microservices and DevOps. As a result, problems and challenges related to the lifecycle of enterprise software are solved in all-round manner.

With cloud-enabled Big Data services, it offers users with a comprehensive series of solutions that deal with data acquisition and conversion, computing & storage, analysis & mining, BI display, and operations & maintenance management. These help users build systems to manage a massive amount of data, mine embedded value from data, and create new business opportunities.

Based on an optimized distributed training model and rich, self-defined software and Docker image library, it satisfies users' requirements of elastic and scalable AI computing resources and helps them to support digitalized and intelligent businesses.

## Market Development

H3C CloudOS is a result of eight years of R&D and innovation efforts and six years of commercial deployment, having been adopted by high-end users such as State Taxation Administration, The Beijing Municipal Administration Cloud, Sichuan Administration Cloud, Henan Health Cloud,

Suzhou Industry Cloud, China Pacific Insurance Company, China National Off-shore Oil Corporation, CASICloud, China Construction Bank, and Tsing Hua University.

H3C CloudOS has been widely used in various sectors including government, enterprise, finance, education, energy, transportation, healthcare, and converged media, offering customers with stable and reliable cloud computing capabilities.

## Highlights

### All-round convergence of ABC with flexible choices

H3C CloudOS brings innovation to AI (A), Big Data (B), and Cloud (C), in order to meet the needs of customers in these areas.

- For industries, it offers a solution that unify cloud, digitalization and intelligence.
- For applications, it offers one-stop services and support for cloud, digitalization, and intelligence.
- For resources, it offers a building-blocks methodology.

### Agile business development, fast online

H3C CloudOS significantly enhanced the PaaS' s capability. It not only provides micro-services for users' modern application processes, but also speeds up delivery with agile DevOps. For multi-module applications, it offers a unified support platform for both traditional applications and cloud-native applications - from R&D to their operation

- For multiple scenarios, it provides modular business capabilities such as containers, microservices, and DevOps
- For multiple services, it offers access capabilities for generic and customized services.

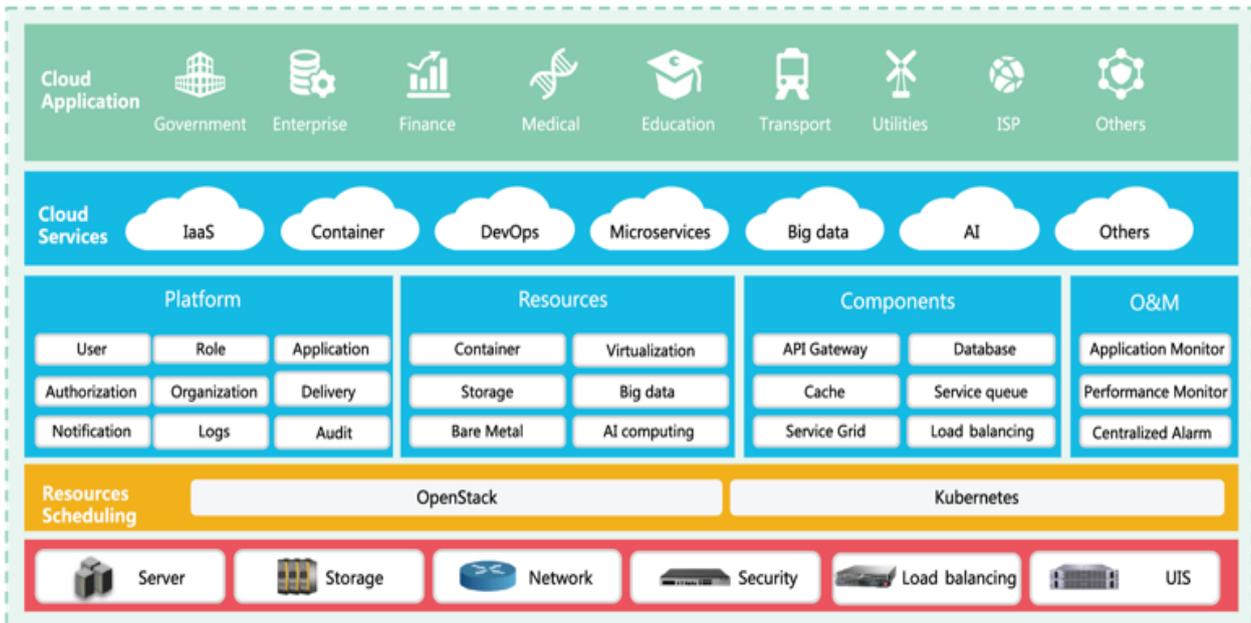
### A wide variety of applications with intelligent connection

H3C CloudOS adopts plug-in based open architecture, enabling in-depth integration for various industry applications. This results in richer service capabilities for users and faster business innovation.

- For users, it provides multiple industry applications
- For businesses, it offers various scenarios to speed up responses
- For partners, it provides a great platform for collaboration

## Architecture of H3C CloudOS

H3C CloudOS manages traditional IT resources and converges new technologies such as containers, DevOps, Big Data and AI. While ensuring cloud security, it allows automated delivery of IaaS, PaaS, and SaaS and one-stop experience of operation and maintenance functionalities.



## Self-service portal

H3C CloudOS comes with a self-service portal that allows tenants to apply for, use, and manage cloud services. Through this portal, users can apply for IaaS resources and services including those related to applications, Big Data, AI, and development tests.

## Rich content services directory

H3C CloudOS virtualizes IT resources. Users can apply IT resources based on their business needs. Cloud services that H3C CloudOS can now provide include:

IaaS services such as X86 virtual machines, cloud hard disks, cloud network disks, cloud firewall, cloud load balancing, cloud network, cloud database, public network IP, bare metal servers; PaaS services such as application warehouse, application management, Docker image repositories, application templates, and pipelines; development and test services such as project management, code management, and product management; NOSQL database , document services, in-memory database, offline computing, in-memory computing, stream computing, data integration, management of quality and metadata, workflow dispatching, and data warehousing.

### **Cloud network disk services**

Cloud network disk services provide users with storage for unstructured data such as documents. Storing users' individual data in a cloud and establishing the z data disk, allows unified data storage, ensures data security, enhances document and data monitoring. This services also support rights control for documents and provide classifications such as individual documents and shared documents, allowing units to share resources.

### **Application warehousing services**

These services offer users with application storage, allowing upload, download, edit, view, and deploy applications from the application warehouse. The platform also offers private or public application warehouse, allowing on-demand use and enhancing application security. The application warehouse supports unified management of container applications and traditional applications, further raising the storage capability of the application warehouse.

### **Application management services**

These services provide the management of applications that were rapidly built and deployed with application templates, warehouse, and blueprints. Users can view all services covered by an application such as basic information, container instances and update, edit, stop or delete that application. At the same time, such services can display topology and link information for the managed applications.

### **Docker image warehouse services**

These services are based on a private cloud environment developed by the Harbor project. Users can push, pull, edit, view, and deploy Docker images in a warehouse according to their needs. The platform offers both private and public Docker image warehouses. These services address security concerns with the scanning function that detects vulnerabilities when any Docker image is being pushed.

### **Application template services**

Based on self-defined YAML, application template services allow users to rapidly build and deploy their applications. After building templates, users can replicate or delete them according to their needs.

### **DevOps Pipeline services**

DevOps Pipeline service provide simple and easy-to-use automated CI/CD functionalities. Through self-defined pipeline tasks, users can achieve automated deployment and upgrade. At the same time, they can manage data they built, view built history and delete any built history.

## Multiple user roles

H3C Cloud divides users into three main categories: cloud administrators, tenant administrators, and end-users.

**Cloud administrators** - They are responsible for a data center's operation and maintenance. Besides infrastructure maintenance, cloud administrators have to manage tenants, processes, and billing. In large cloud data centers, operations and maintenance are two separate roles taken up by different people.

**Tenant administrators** - They are responsible for maintaining cloud resources for tenants. They can manage cloud hosts, cloud firewalls, cloud hard disks, cloud load balancing, and cloud database within their own organizations.

**End-users** - They belong to a tenant and they are the users of cloud resources. Through self-service portal, they can apply for and use cloud services.

## Optimal management of cloud operation

H3C CloudOS provides the management of cloud resources, enables cloud administrators to allocate resources, designs approval process, and manages users for each tenant.

Cloud administrators can monitor the health of cloud data center via a dashboard.

## Cloud resources allocation for tenants

Cloud administrators allocate quota of resources such as CPU, memory, hard disk, networking for tenants according to their scales. They can adjust quota of these resources when the need arises.

## Service process design

H3C CloudOS provides the optimal management of the approval process of cloud resources for industry users such as governments, enterprises, and educational institutes. Tenants need to submit their request for resource. And cloud resources will be pushed to users' self-service portal after approval.

## Monitoring tenants' cloud resources

Cloud monitoring services are used to monitor tenants' application resources deployed in a cloud data center. These services collect indicators from cloud resources to monitor the availabilities of different applications; and set alarms according to indicators. These services can monitor different resources such as cloud hosts (either Windows or Linux), databases (for example MySQL and MS SQL), middleware (For example Tomcat, weblogic, websphere and glassfish), and the availability of Internet applications through network protocols such as HTTP and ICMP. These services allow tenants to gain full understanding of their cloud resources utilization, performance, and operation. With alarm service, tenants can respond timely to ensure normal operation. Cloud administrators can customize approval processes for different tenants.

## Collaboration with partners in the industry

H3C CloudOS offers rich REST API ports to allow third parties integration.

Collaborate with vendors such as Eisoo to provide solution like unified backup.

### Open-standard cloud interfaces

H3C CloudOS provides an open cloud business platform by offering rich REST API interfaces for third-party application deployment. The interfaces covers IaaS/PaaS/SaaS layers and provides compatible API for Openstack. The open cloud service platform can be achieved based on the open-standard interfaces.

H3C CloudOS provides more than 150 REST API interfaces for services including the management of tenants, hosts, hard disks, networking, firewall, load balancing, tickets, and operation logs. This allows our platform compatible with various application systems in many areas such as carriers, governments, utilities and finance.

### AnyBackup: Cloud backup solution for H3C Cloud

Eisoo offers its enterprise-grade data protection solution AnyBackup for H3C Cloud. It's a highly-efficient, reliable, cost-effective data protection service, having been the No. 1 backup brand in Chinese market for three consecutive years. Equipped with protection power for virtual, physical and cloud environments, Anybackup allows easy setup and maintenance of disaster recovery centers and helps customers to face challenges such as the increasingly complex IT environment, exponential growth of data, growing TCO, and the lack of protection functions in products.

Product characteristics:

- Single solution to protect virtualized, physical and cloud environment
- Protect virtualized machines effectively to meet the requirement of new cloud data centers

## Value to Users

### Excellent user experience: ABC converged to unified management portal

H3C CloudOS adopts the latest platform concepts, seamlessly converging the different business platforms of AI (A), Big Data (B), and Cloud (C). Our platform not only satisfy the business needs for different users, but also provides the unified daily management for business applications through unified interfaces and ports. This unified platform offers excellent user experience, and helps users to solve difficulties including management of multiple data centers, data collection and analysis.

## Enhanced application management: Applications fast onboard

H3C CloudOS brings R&D and IT operation & maintenance teams to a unified platform. As a result, they can build, deploy, and manage applications more easily and at the same time shorten the development cycle and allow both traditional and cloud-native applications to fast onboard.

## Easy interfacing with third-party applications, quick business innovation

Third-party business applications can integrate with H3C CloudOS according to its specifications. This brings richer functionalities to customers and allows them to use their own applications on H3C CloudOS platform. The result is a faster business innovation.

## Ordering List

Cloud OS		
Model	Name	Description
3130A3M4	LIS-CAP-CLOUDOS-ENT	H3C CloudOS Enterprise Edition Software
3132A05W	LIS-CAP-CLOUDOS-ENT-1	H3C CloudOS Enterprise Edition License, 1 CPU
3130A3LX	LIS-CAP-CLOUDOS-ENT-PLU	H3C CloudOS Enterprise Plus Edition Software
3132A05Y	LIS-CAP-CLOUDOS-ENT-PLU-1	H3C CloudOS Enterprise Plus Edition License, 1 CPU
3130A3ME	LIS-CAP-CLOUDOS-EX-OSS	H3C CloudOS Object Storage Service License
3130A3LS	LIS-CAP-CLOUDOS-EX-NAS	H3C CloudOS File Storage Service License
3130A3M5	LIS-CAP-CLOUDOS-EX-SS-PLU	H3C CloudOS Security Plus Service License
3130A3M1	LIS-CAP-CLOUDOS-EX-DB-BAS	H3C CloudOS DB Service Base License
3130A3M6	LIS-CAP-CLOUDOS-EX-DB-MYSQL-ENT	H3C CloudOS DB Service License For MySQL Enterprise Edition
3130A3M7	LIS-CAP-CLOUDOS-EX-APP-STD	H3C CloudOS Application Service Suite Standard Edition License
3130A3LU	LIS-CAP-CLOUDOS-EX-APP-ENT	H3C CloudOS Application Service Suite Enterprise Edition License
3132A05X	LIS-CAP-CLOUDOS-EX-CS-1	H3C CloudOS Container Service License, 1 Host



The Leader in Digital Solutions

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