

YOFC Cloud Computing Solution



Yangtze Optical Fibre and Cable Joint Stock Limited Company

Stock Code: 601869.SH 06869.HK

ADD: No.9 Optics Valley Avenue, Wuhan, Hubei, China(P.C.: 430073)

Tel: 400-006-6869 Email: 400@yofc.com

en.yofc.com

Facebook: Yangtze Optical Fibre and Cable Joint Stock Limited Company

LinkedIn: Yangtze Optical Fibre and Cable Joint Stock Limited Company

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Introduction to YOFCloud

Cloud Computing

As the new infrastructure of IT, Cloud Computing is an incremental, available, convenient and on-demand network access mode. Additionally, enterprises have become the driving force of Cloud Computing. The traditional IT has evolved to new IT via the construction of Private Cloud, Industry Cloud and Mixed Cloud. Because of different application in all industries and starting point of IT, each user has unique understanding about Cloud. YOFC will cooperate with all enterprises and keep progressing in practice, striving to build a proper fruitful Cloud. Cloud Computing has become a driving force of sharing economy and digital economy. Inter-Cloud connecting, sharing and interaction will be the final target of Cloud Computing. Based on the application characteristics of enterprises and industries, YOFC helps users to upgrade their private Cloud and special Cloud to mixed Cloud and multistage Cloud. YOFC builds the Cloud Exchange Center to share resources in the Cloud. During the process, YOFC sticks to the technical route marked by resources sharing, Cloud and network fusion, scenario-based delivery and cooperate with a lot of suppliers to provide E2E Cloud integration service to enterprises.

Introduction to YOFCloud



Introduction to YOFCloud Patents

- Based on Openstack, KVM, Ceph and OVN deep fusion, YOFCloud uses software to define computing, storage, network and security to realize four-in-one Cloud and network fusion. YOFC has strong R&D team and competitive strength in R&D, and it has formulated 12 patents.

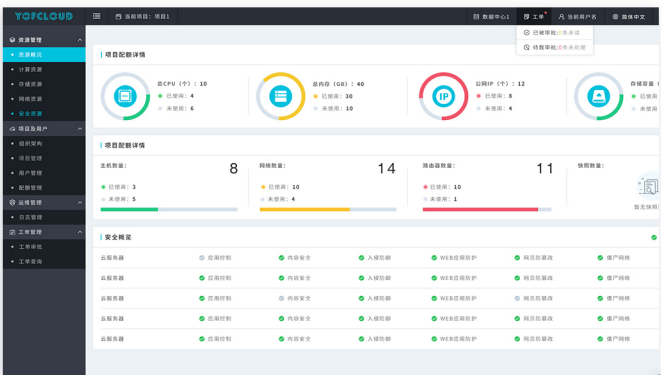
Name of Patents

- A Subnet Configuration Change Method Based on Openstack
- An Openstack Data Query Method that can Bypass Keystone Verification Based on Mybatis
- A method that Uses Micro Service to deploy Cloud Management Platform
- A Method to Configure Automatically Sound Card in the KVM Virtual Machine in OpenStack
- A Method to Configure Automatically USB3.0 in the KVM Virtual Machine in OpenStack
- Automatic Web App Test by Using Hierarchical Test
- A Method and System to Repair USB Flash Disk and Upgrade Linux System
- A Method and System to Make the GNOME Read-only Desktop System
- An USB Redirecting Filtering Method Based on Spice Cloud Desktop
- A Client Device and Method to Obtain Directly the Address of VM Console in Openstack
- A File Dragging Method Based on Spice Protocols
- A Network Link Environment Judgment Method Based on Spice Protocols

Introduction to YOFC Cloud management platform

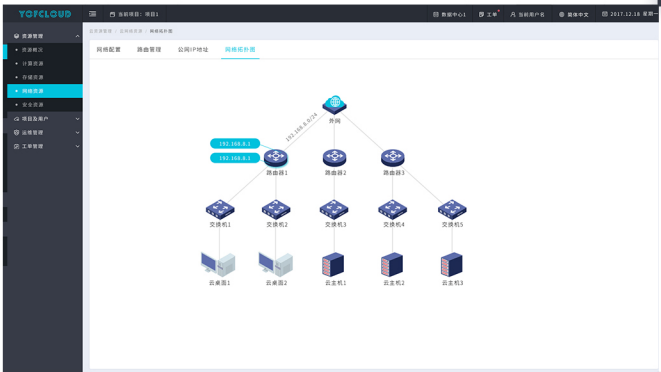
Introduction to Cloud Management Platform

- The YOFCloud is an advanced, stable and secure private Cloud platform, and it provides unique Cloud management products and help users to realize unified management of private Cloud and traditional IT and help enterprises to transform from traditional IT to Cloud data center. The YOFCloud uses software to define computing, storage, network and security to realize four-in-one Cloud and network fusion.



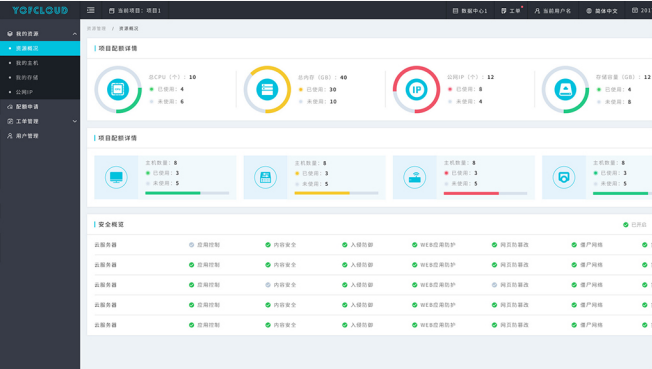
It supports displaying the usage status of physical resources and virtual resources in the whole data center.

It supports checking the status of all computing, storage, network and security.



It supports displaying network topology on Web and node dragging.

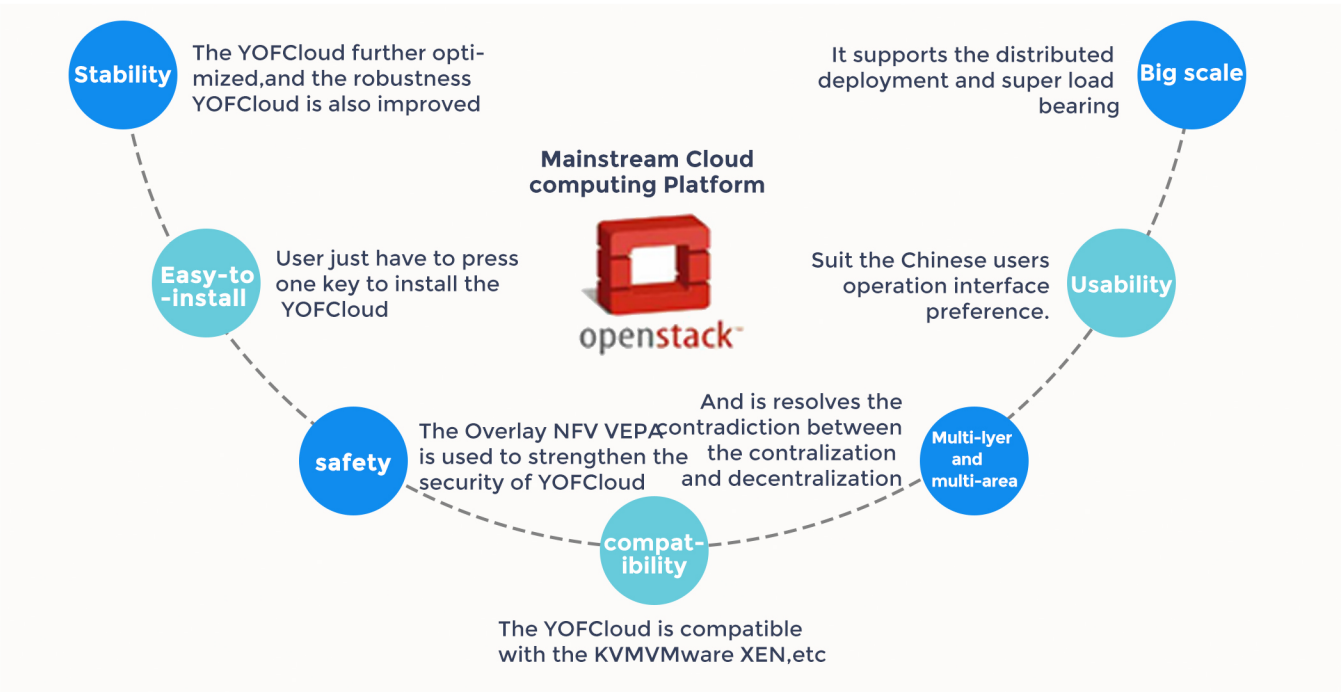
It supports displaying the overall usage status of quota of project.



Advantages of YOFCloud Management Platform

Advantages

- Use the OpenStack Cloud Computing Framework**
The OpenStack is an industry-recognized and the most advanced open Cloud computing framework, and it has a wide range of supporting manufacturers and the most active community. The OpenStack has already become the well-accepted standard in the Cloud Computing field.
- Customizable Service Process**
YOFC uses a development mode that divides interface development and service development. By customizing service process based on the needs of clients, YOFC has become the closest Cloud platform system supplier to clients.
- High System Availability**
Prepare 3 copies for a management node, and users will not be interrupted when any key node is down. The YOFCloud uses the distributed data storage so that user data will not be lost when any node of the system is down.
- Smooth System Upgrade**
The YOFCloud uses the micro service mode to deploy system to realize seamless smooth system upgrade. In case of any failure in the system upgrade, the version rollback will be performed immediately to ensure system stability.
- Multistage Data Center**
The user's architecture builds a multistage data center. The lower stage can apply for resources from the upper stage so that resources can be allocated reasonably.
- Three-level Permission Management**
Work modes such as 3-level permission management and work order approval, etc. will be used to adapt to actual application scenarios and the management organization structure of users.
- Optimized Network Topology**
It uses hierarchical network topology to display the relation among network element and clearly show the status of network.
- Supporting Mobile officing**
It supports approving work orders on the Wechat. Users can work at anywhere and anytime.



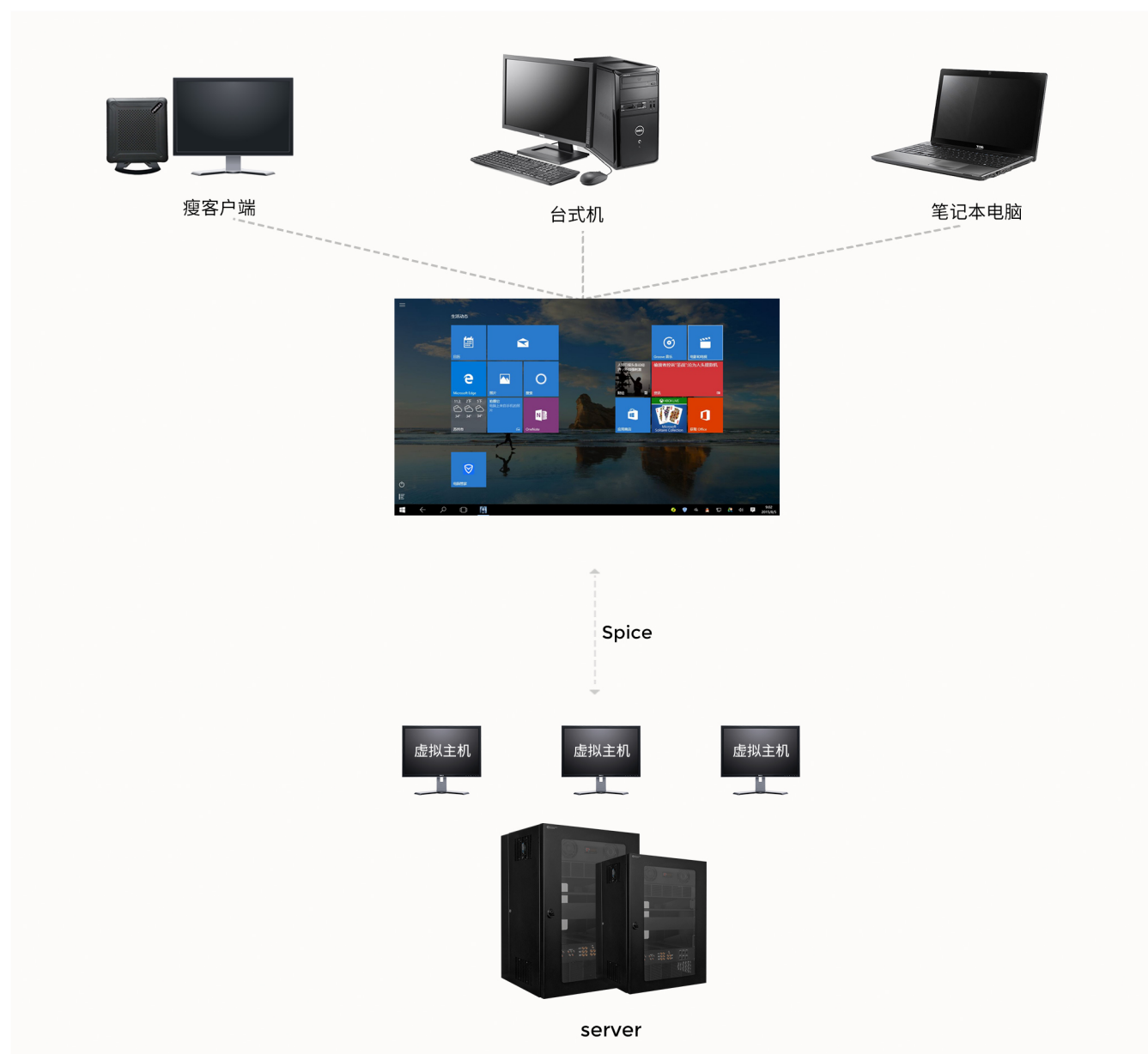
Introduction to YOFCloud Desk

Introduction to YOFCloud Desk

- The YOFCloud Desk computer deploys its computing and storage resources in the room of the Cloud Computing data center. YOFC uses the virtualization technology to virtualize the physical resources. To provide virtual desk service, clients integrate virtualized resources in VMs of different scales according to the needs of users.

Realization Mechanism of YOFCloud Desk

- The YOFCloud Desk computer deploys its computing and storage resources in the room of the Cloud Computing data center. YOFC uses the virtualization technology to virtualize the physical resources. To provide virtual desk service, clients integrate virtualized resources in VMs of different scales according to the needs of users.



Advantages of YOFCloud Desk



» Centralized Management and Control and Convenient O&M

- All desktop computers are operated in the YOFCloud Desk and centrally administrated.
- Users will file for application, and the administrator will approve the application and assign virtual desktop to users.

» Lower Cost

- The service life of server will be longer than that of common PC. The power consumption will be far lower than that of common PC, so the cost is lowered.
- A single server can run tens of desktops, greatly lowering the number of required O&M staff and labour cost of enterprises.



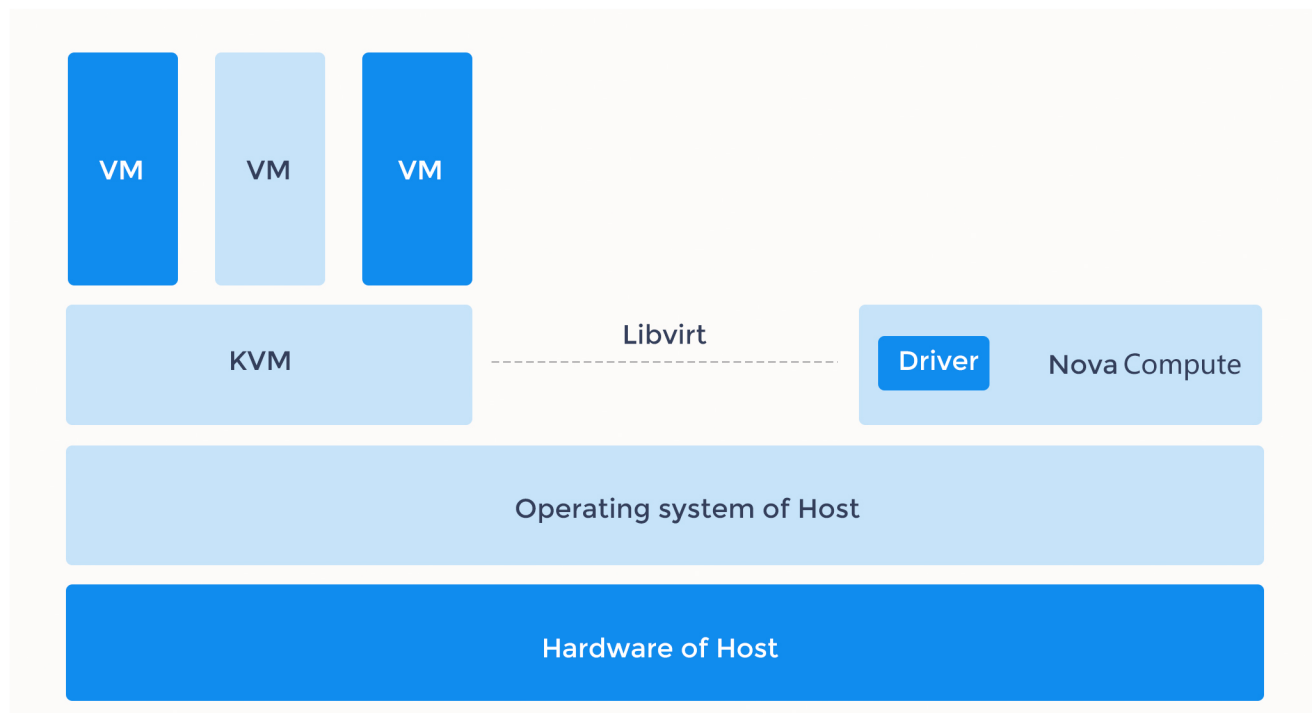
» Information Security

- All desktop hosts run in the Cloud platform, and all data of them are centrally stored. Copies of all data will be configured in the Cloud platform, so users do not have to save any data in his PC.
- The administrator can use the network strategy control and external strategy control, etc. to prevent clients from stealing data.

Computation Virtualization Technology Solution

Solution Features

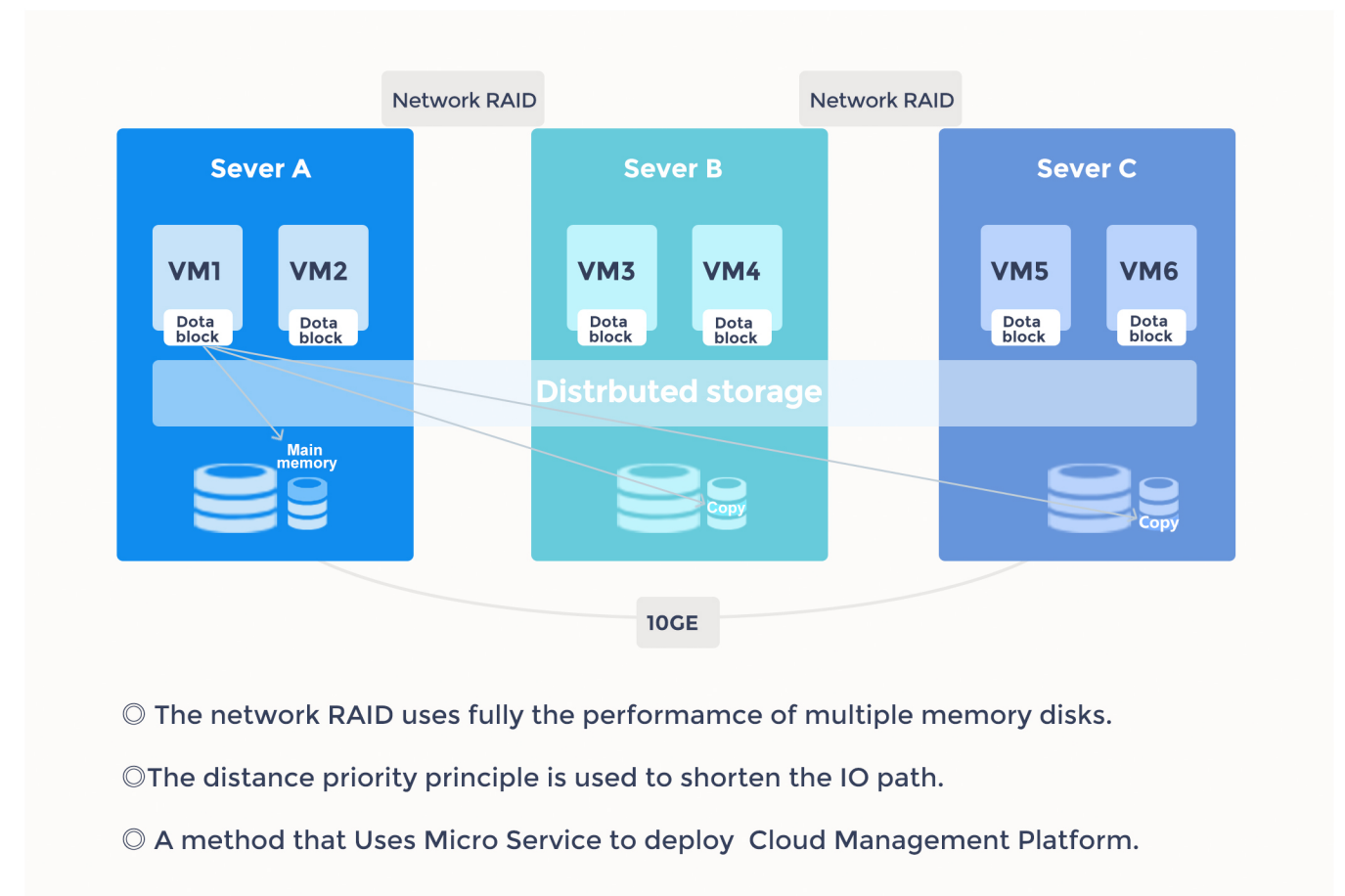
- In the solution, the KVM+QEMU+Libvirt architecture is used to build the computation resources pool.
- **Mature & Stable**
The KVM virtualization technology is the most widely used and the most stable virtualization technology in the virtualization technology field.
- **Efficiency (No Performance Loss after Virtualization)**
The KVM uses the Kernel mode to virtualize CPU and memory, therefore the performance of KVM barely changes when compared with that of a real PC.
- **Powerful Function**
 - Support x86 (32 bit and 64 bit), s390, PowerPC and IA-64, etc.
 - Support CPU and memory overcommitment.
 - Support semi-virtualization I/O (virtio)
 - Support hot plugging (CPU, block device and network device, etc.)
 - Support symmetric multi-processing.
 - Support live migration.
 - Support transparent transmission of PCI devices (SR-IOV).
 - Support the same page fusion in kernel (KSM).
 - Support Non-Uniform Memory Access.



Storage Virtualization Solution

Solution Features

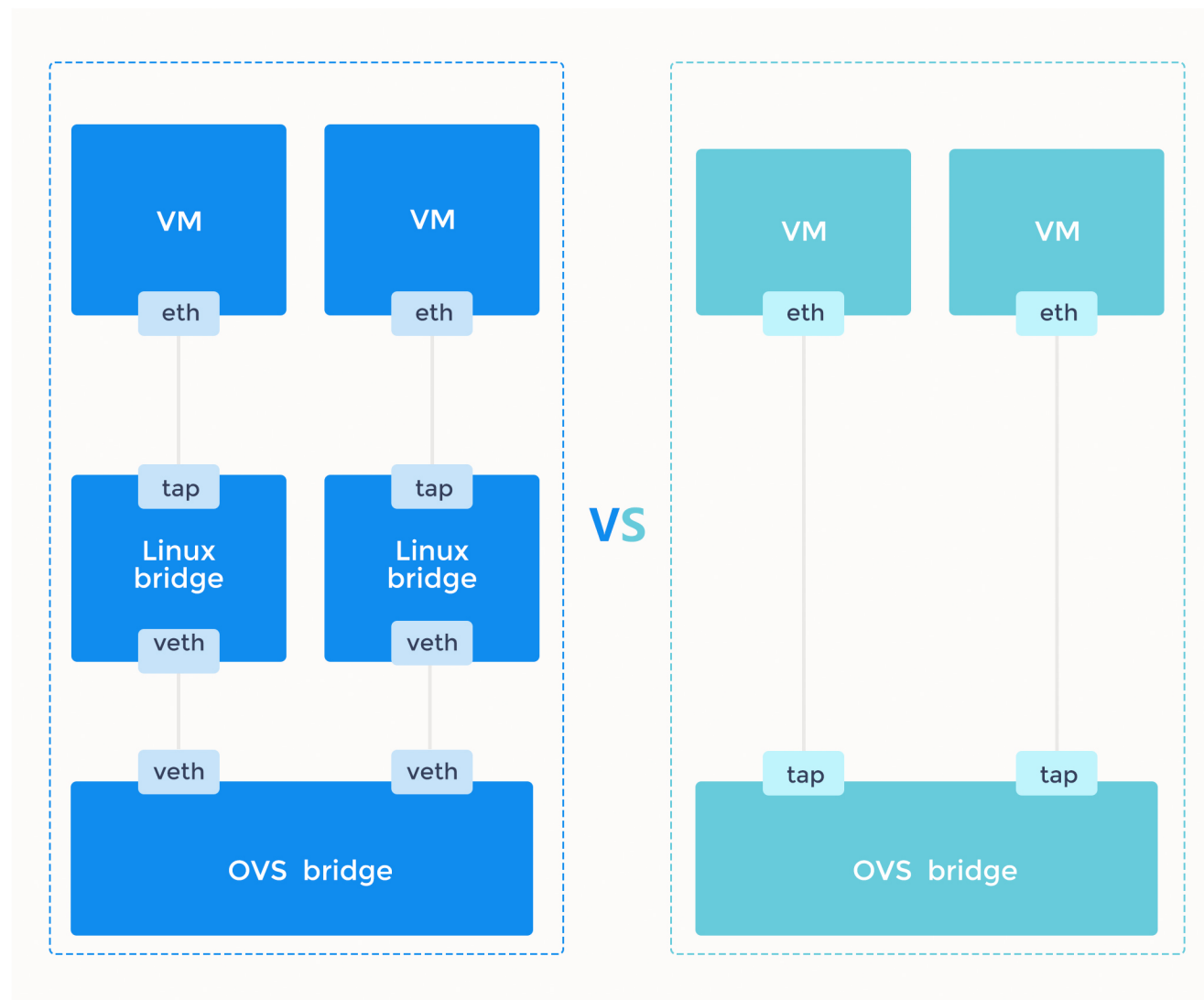
- The YOFCloud support distributed storage and SAN storage to provide storage for the VM.
- **Various Storage Solutions**
The YOFCloud support various storage solutions such as distributed storage and SAN storage, etc.
- **High Scalability**
It uses distributed storage clusters that can be easily scaled to the PB grade.
- **Dynamical Copies**
For distributed storage, each cope of data has multiple copies, and no data will be lost when any storage node is down.
- **Convenient O&M**
For the O&M staff, the united and centralized administration can greatly reduce the cost of O&M. The automatically timed snapshot and backup can be set in the YOFCloud to reduce the workload of the O&M staff in daily maintenance.
- **Lower costs**
Both SAN and distributed storage have the incremental storage and on-demand allocation feature so that memory space is fully used and overall storage cost is lowered.



Network Virtualization Solution

Solution Features

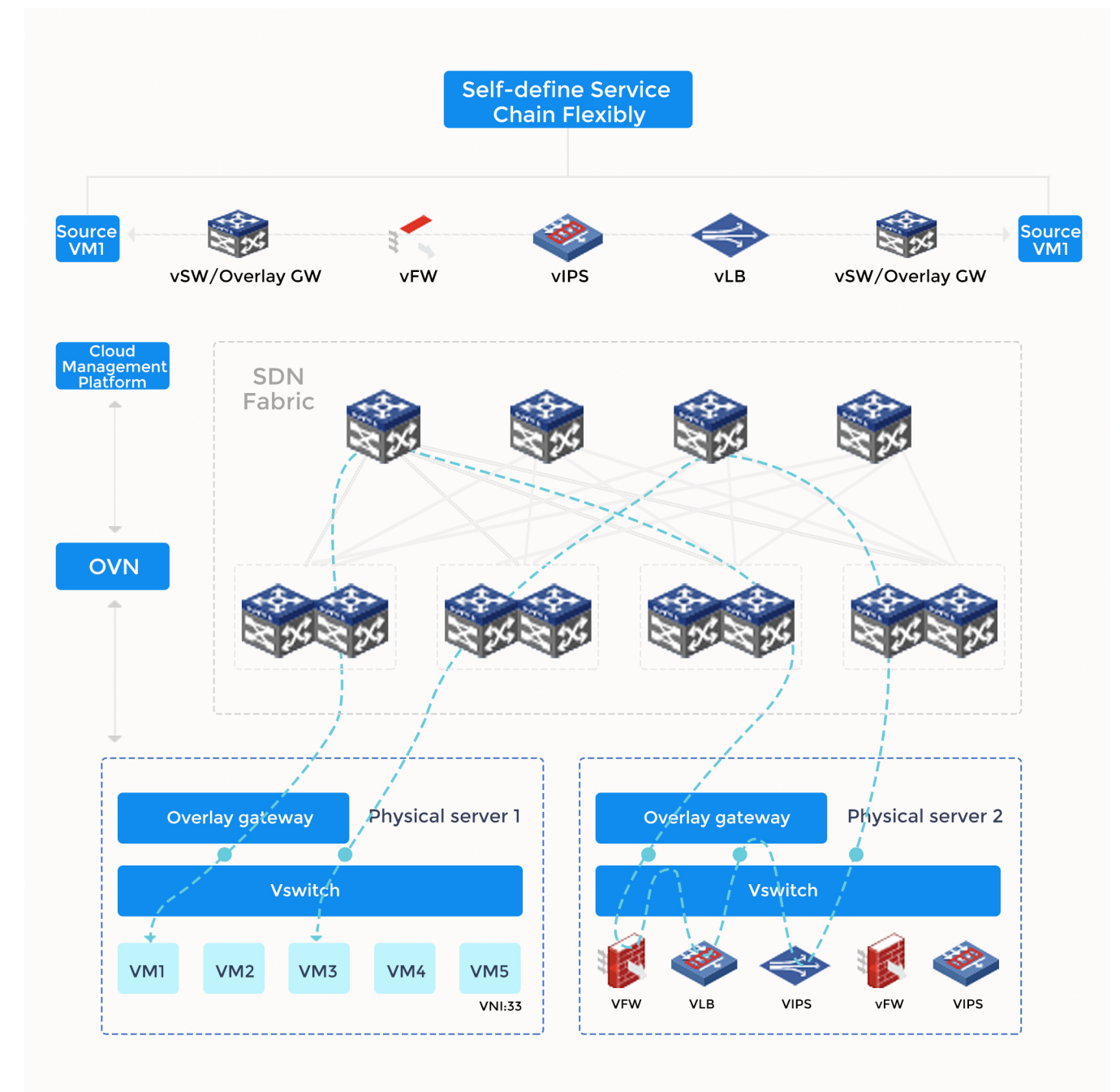
- The OpenStack+OVN integration technology is used to virtualize network.
- Bigger Scale of Cloud Cluster**
The YOFCloud can support more than 5000 PCs or VMs or container environment, and it uses the existing OpenStack OVS plugin to improve the performance and stability.
- Shorter Data Stream and Higher Efficiency**
To create a neutron port, the Security group just need to connect the tap port to the OVS bridge, greatly reducing the steps to take. More importantly, the Security group uses the conntrack function of the OVS, and the Security group can match according to the status of connection, improving the query efficiency of data stream table. Moreover, the status-equipped firewall and NAT can be integrated.
- Network Status Management**
Administrators can conveniently master the IO status of the whole network and the network QoS of VMs based on the status of network to optimize the network resources of the data center as much as possible.



Security Virtualization Solution

Solution Features

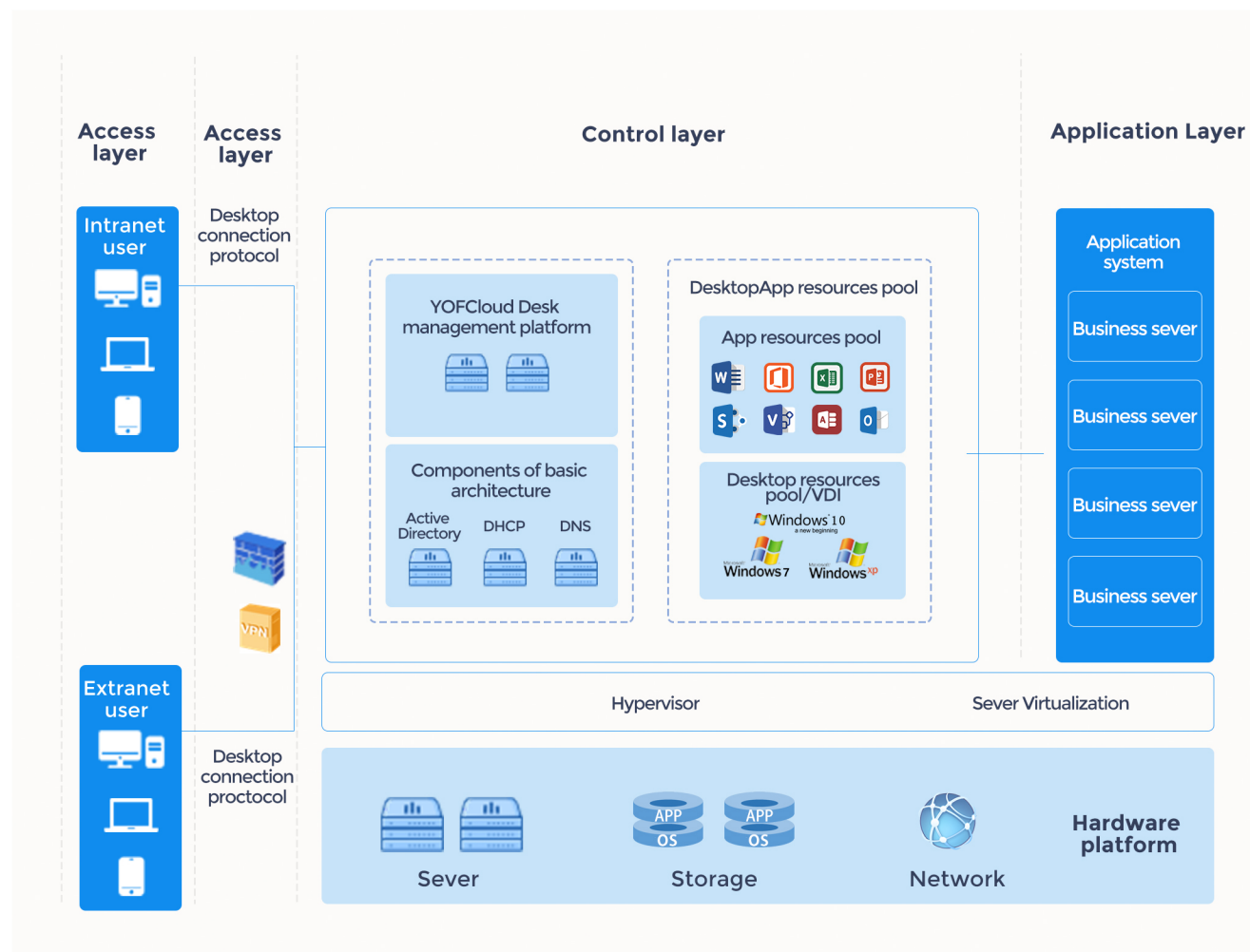
- To enable users to self-define security in multi-user Cloud Computing environment, YOFC puts forward security virtualization solution and deploy security tools such as virtual firewall, IPS, IDS and traffic analysis, etc. on servers to form a security resource pool.
- The YOFCloud integrates rich Cloud security service. Users can apply for these Cloud security services from the YOFCloud when needed like using their own security equipment.



Desktop Cloud Solution

Solution Features

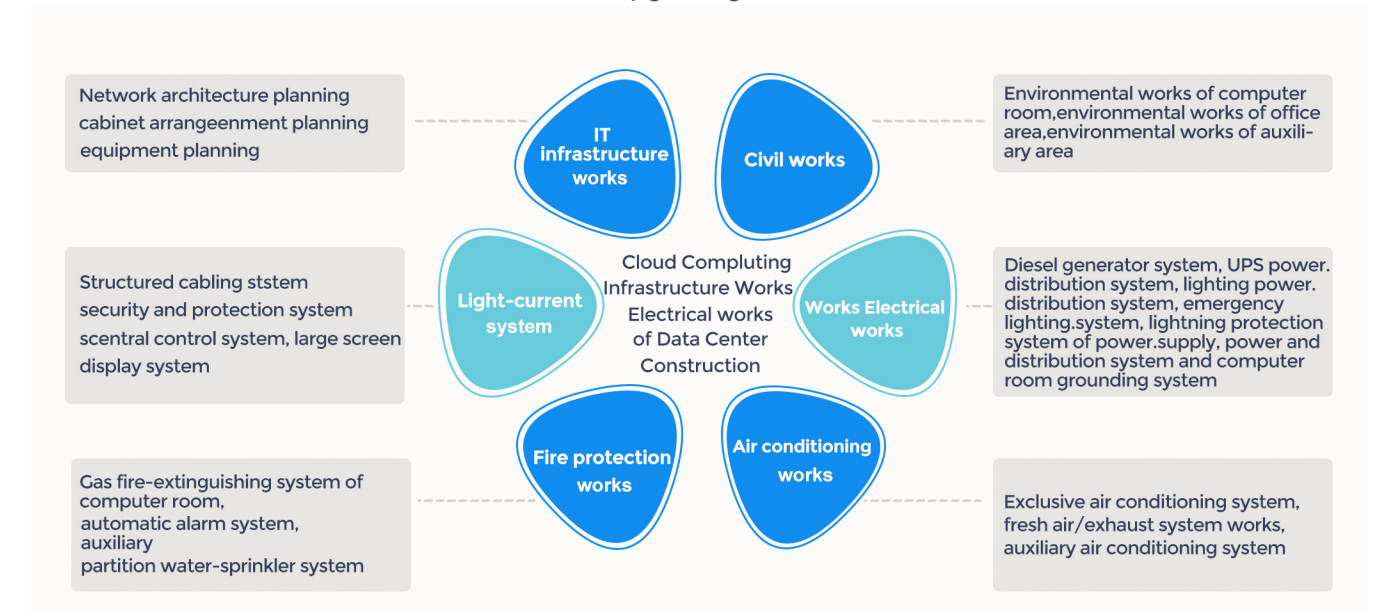
- Network Status Detection**
 The YOFCloud can detect the status of network at any time, respond to network interruption event and remind users to check the status of network.
- Optimize Coding and Decoding**
 The YOFCloud uses the stream coding and decoding to improve the image quality, reduce the network delay and use less bandwidth to render more stable displaying effect.
- Lower CPU Usage Rate**
 The hardware acceleration is supported in decoding clients to reduce the usage rate of client CPU.
- Optimize Desktop Protocols**
 It supports the data transmission encryption function, local equipment in redirecting to VM and real-time displaying and control of status of VM.
- Support File Dragging**
 Users can use file dragging to send local files to remote desktop.



Cloud Data Center Solution

Solution Features

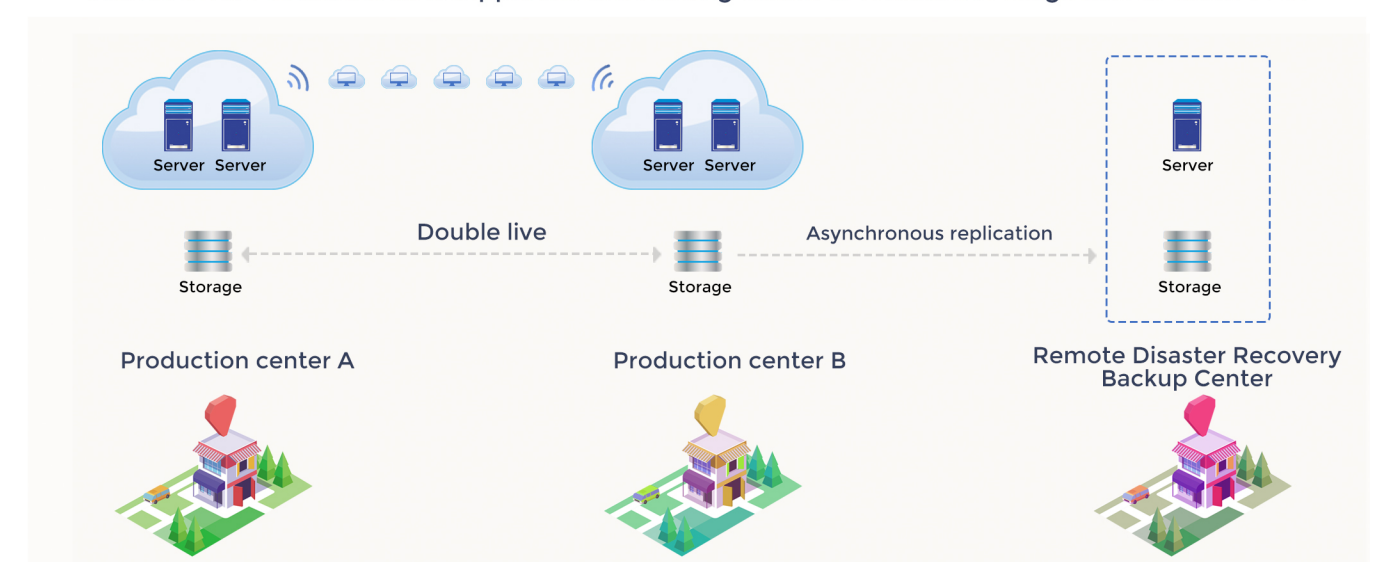
- YOFC provides consultation and construction services such as planning and design of infrastructures of Cloud Computing data center, implementation of delivery, verification and joint debugging, operation & maintenance consultation, relocation and upgrading and certification consultation, etc.



Cloud Disaster Recovery Backup Solution

Solution Features

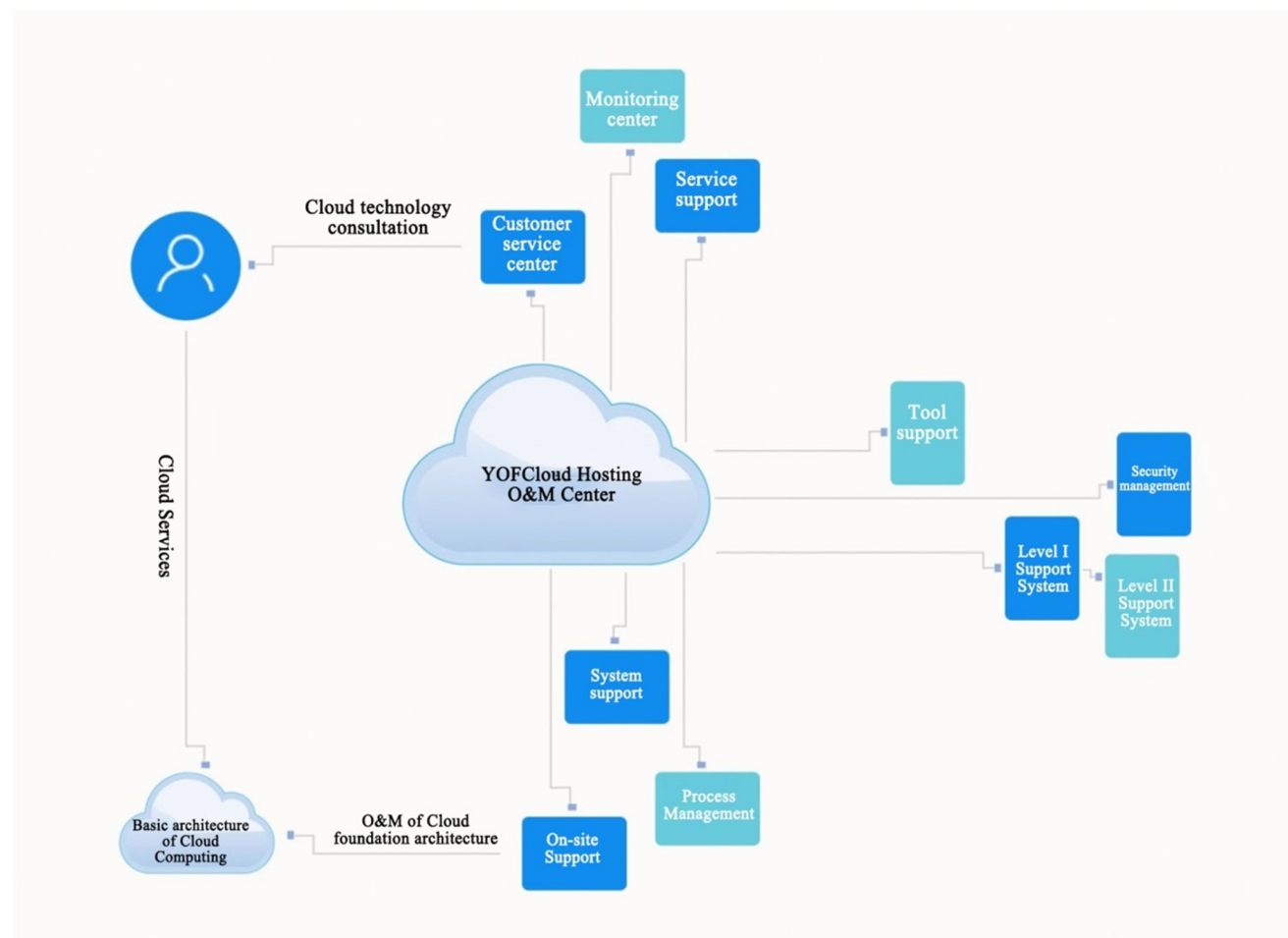
- For Apps requiring high service continuity, users can select the “two places and three centers” disaster recovery backup mode.
- Build two active data centers (within 100km) in one city and a remote disaster recovery backup center in another city. Those two data centers will provide services at the same time to ensure security and stability of service.
- The hardware acceleration is supported in decoding clients to reduce the usage rate of client CPU.



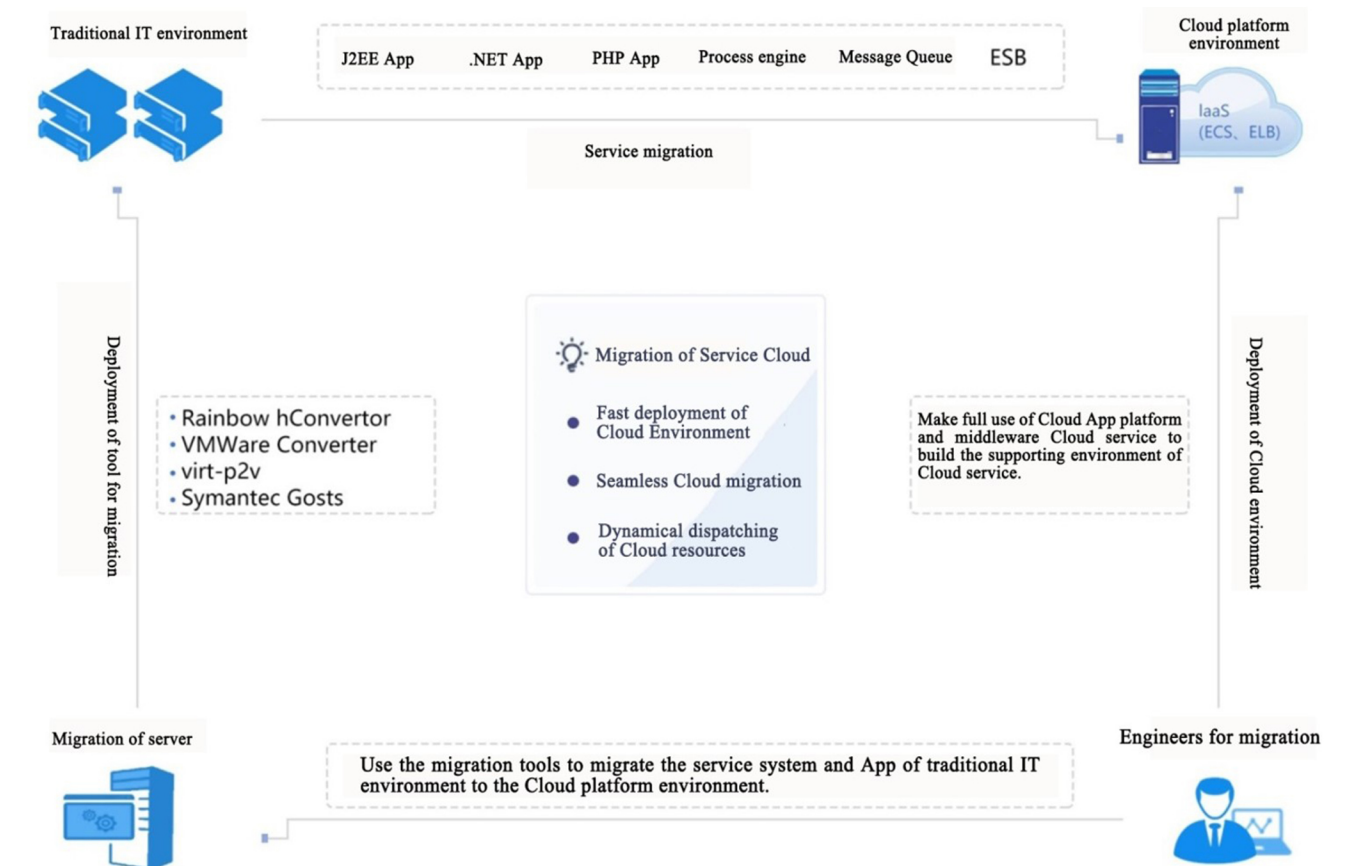
Cloud O&M Solution

Solution Features

- Dynamical Cloud storage capacity management, optimized resources configuration and prediction of service risks
- Smart failure positioning
- Provide consultation support service for Cloud Computing, security, storage and network, etc.
- Provide complete need handling, event handling, monthly/quarterly patrol inspection report.
- Support capability that can cover the whole data center
- Risk visualization and early warning
- standardize and process-ize O&M management and meet the ITIL best practices.
- 7*24 hour uninterrupted hosting O&M service



Cloud Migration Solution



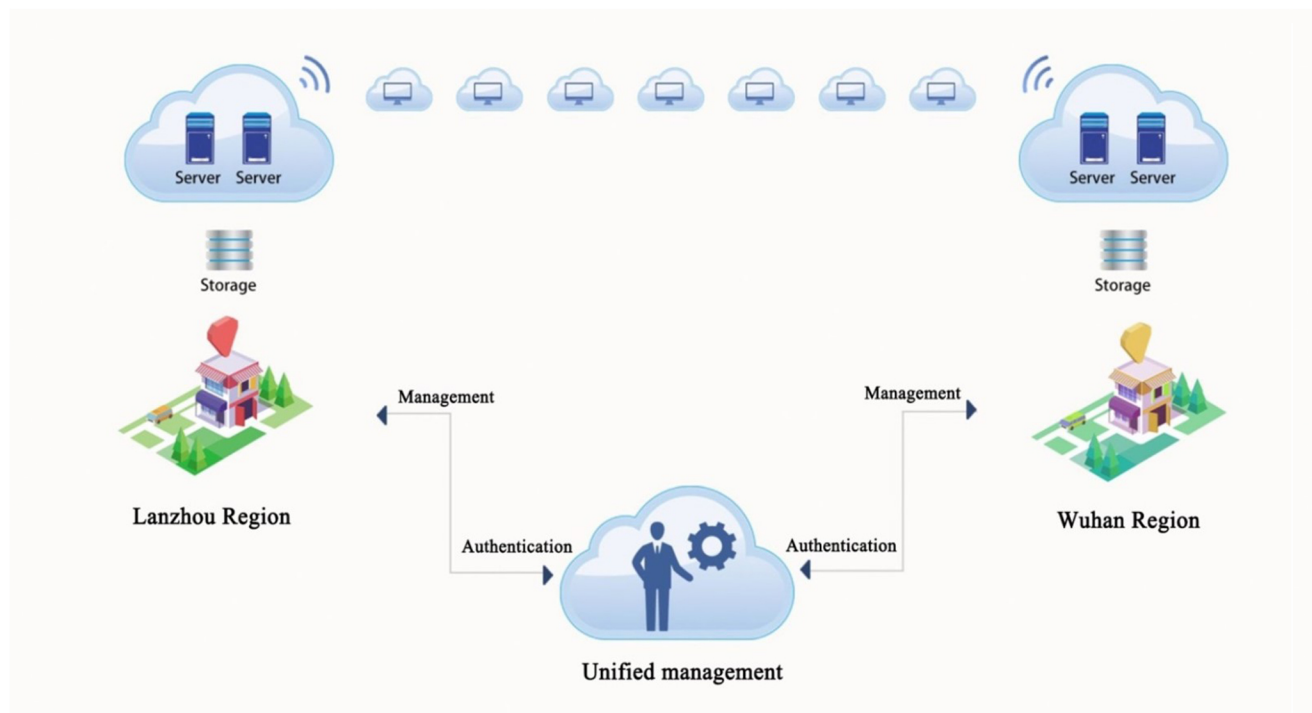
Case: Cloud Data Center (Enterprise Cloud)

Customer Demands

- Build and manufacture Photoelectricity Cloud for the enterprise and provide Cloud services to surrounding regions.
- Take over the administration of existing VMware and migrate the VM to a central Cloud management platform.
- New services need to go online quickly. Servers are not enough and cannot be provided timely. Currently, CPU and memory, etc. are widely left unused. Computer room, cabinet space and power supply are not enough. So the existing technical architecture needs to be optimized to shorten the timespan for the application system to go online.

Output Solution

- The “two-level architecture and united management” idea shall be used in the Cloud construction.
- Two-level architecture: build united global nodes and multiple regional nodes, and connect regional nodes and global nodes.
- Provide services to the surrounding parks when needed to avoid repeated construction and lower the cost of construction.



Customer Value

- The scheme is based on the open openstack+kvm architecture, which is good for O&M of the project.
- The schemes uses the global+region deployment, which is good for the expansion of resources pool and united O&M management in the later stage.
- Provide services to the surrounding parks when needed to avoid repeated construction and lower the cost of construction.
- Two places will share one O&M platform to reduce the O&M cost and streamline the O&M staff team.

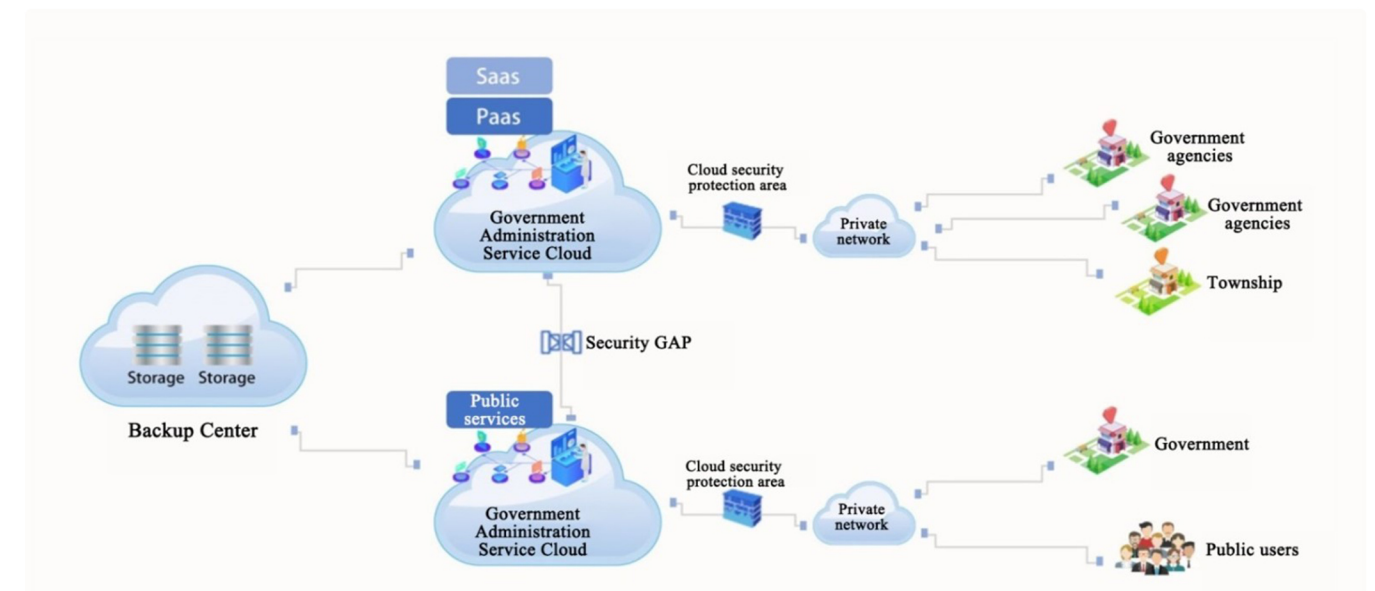
Case: Cloud Data Center (Government Administration Cloud)

Customer Demands

- Build a complete O&M service management system.
- Perform daily status monitoring, fault response and resources allocation and control, etc. on all nodes of the whole network.
- Be responsible for collecting network operation data to perform service traffic and data traffic direction analysis and network development planning.
- Elastic Cloud host service, bare computer Cloud service, Cloud network service, virtual Cloud host backup service, united management platform and heterogeneous computing of resources

Output Solution

- 7 parts: decoration of computer room, lighting system of computer room, modular computer room system, refrigerating system, computer room environment monitoring system, fire extinguishing system and hardware equipment platform.
- Deliver the Cloud management platform, computing, storage, network and security resources and provide virtualized services to departments of government.



Customer Value

- Build the on-demand hardware allocation mechanism so that CPU, memory, mirror and Cloud hard disk can be available at any time and can be flexibly scalable.
- Centrally administrated, operated and maintained Cloud platforms
- Avoid repeated construction and improve the usage rate of resources and facilitate
- Facilitate the construction of Big Data platform.

Relevant Cases

- Government Administration Cloud Project of a County
- Prison safety protection upgrading project of a province (17 prisons)
- Smart Health Project

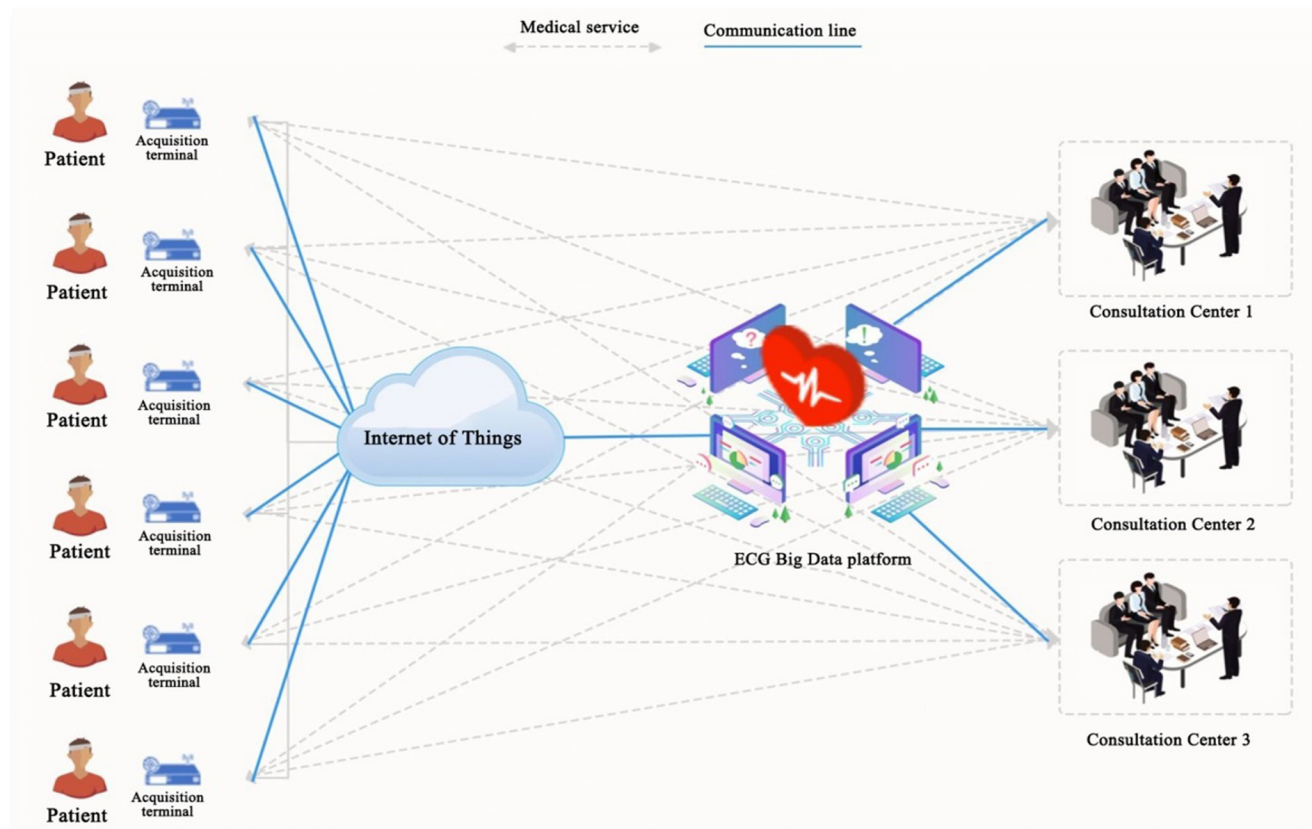
Case: Cloud Data Center (Smart Health)

Customer Demands

- To serve clinical patients and solve clinical problems, the ECG Big Data Center needs to be built to quickly circulate good medical resources, serve people, and promote the information technology construction in relevant medical and health services such as mobile health care, community health care and home health care, etc.
- To better release the advantages of advanced medical resources, use the technologies and health care services in the telemedicine of the ECG Big Data platform managed by the ECG Big Data Center to serve the underdeveloped regions.

Output Solution

- Build relevant IT hardware platform of the Smart Health Care Big Data platform;
- Build relevant software system of the Smart Health Care Big Data platform;
- Build a smart computer room operation & maintenance space;
- Build a hospital presentation space;
- Regional ECG data acquisition service;



Customer Value

- Centralized and structured data storage are good for smart computing;
- Use information technology to send outstanding medical resources in developed regions to the underdeveloped regions;
- Use the network to break the limitations of hospitals and build an effective consultation mechanism.

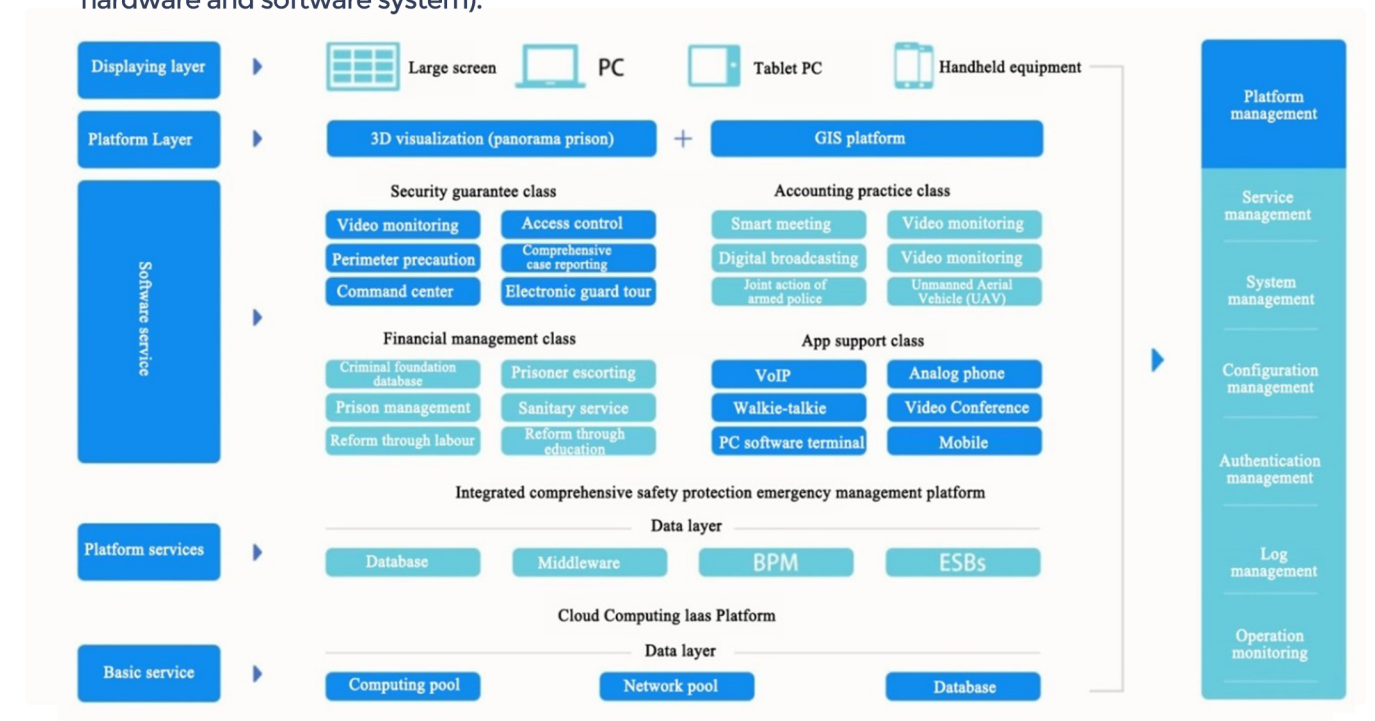
Case: Cloud Data Center (Smart Prison)

Customer Demands

- Replace aged the information infrastructure and old equipment, the performance of which do not meet the need in prison monitoring and administration operation.
- Solve the information and resources sharing problem.
- Improve all kinds of safety protection systems so that they can fully play their roles.
- Put forward solution to the situation where high IQ prisoners poise to challenge the monitoring.
- Use information technologies to build complete, scientific and reasonable upgrading quality evaluation system.

Output Solution

- Build a comprehensive prison management and commanding and decision-making system (including hardware and software system).



Customer Value

- Monitor and control the movements of criminals at all time and all places, improve the security protection degree of prison and emergency response capability to maximally ensure the safety of prison.
- Promote the innovation and normalization of prison management methods and encourage strict, just, civilized and incorruptible law enforcement.
- Promote the standardization and normalization of prison work and improve the efficiency and effective-ness of prison management.
- Facilitate prisons to know about all information and movements of criminals timely and accurately, use advanced facilities and methods to constantly improve the quality of education and educate and change criminals more specifically and effectively.

Relevant Cases

- Dawn prison project of a city
- Prison safety protection upgrading project of a province (17 prisons)
- Juvenile detention facility project of a province

Clients of YOFCLOUD



Government

- Government Administration Cloud of a City
- Smart City Project of a City
- Computer Room Relocation of a Housing Management Bureau
- Procuratorial Work Cloud of a procuratorate
- Cloud Platform of Information Collection System of a Province

Education

- Affiliated middle school of a university
- Education examination database Cloud platform of a province
- Construction project of a vocational school



Enterprise

- Desktop Cloud Project of a Company
- A Enterprise in Xiamen
- Data Center Project of a Company



Medical Care

- Health Department of a Province



YOFCLOUD Software Copyright



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