



ZStack Tech Workshop

Simple ⚡ Fast

Empower every enterprise to have their own cloud

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ZCCE
CCIE RS | CCIE SP
HCIE RS | HCIE CLOUD



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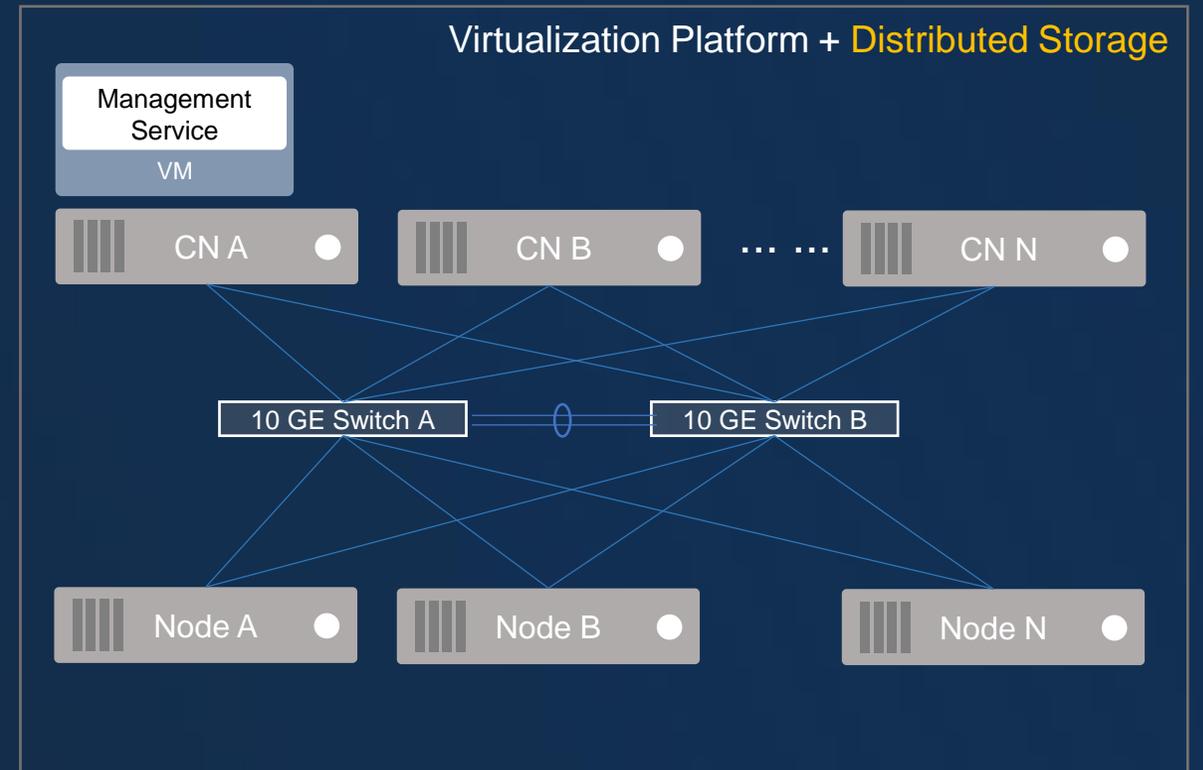
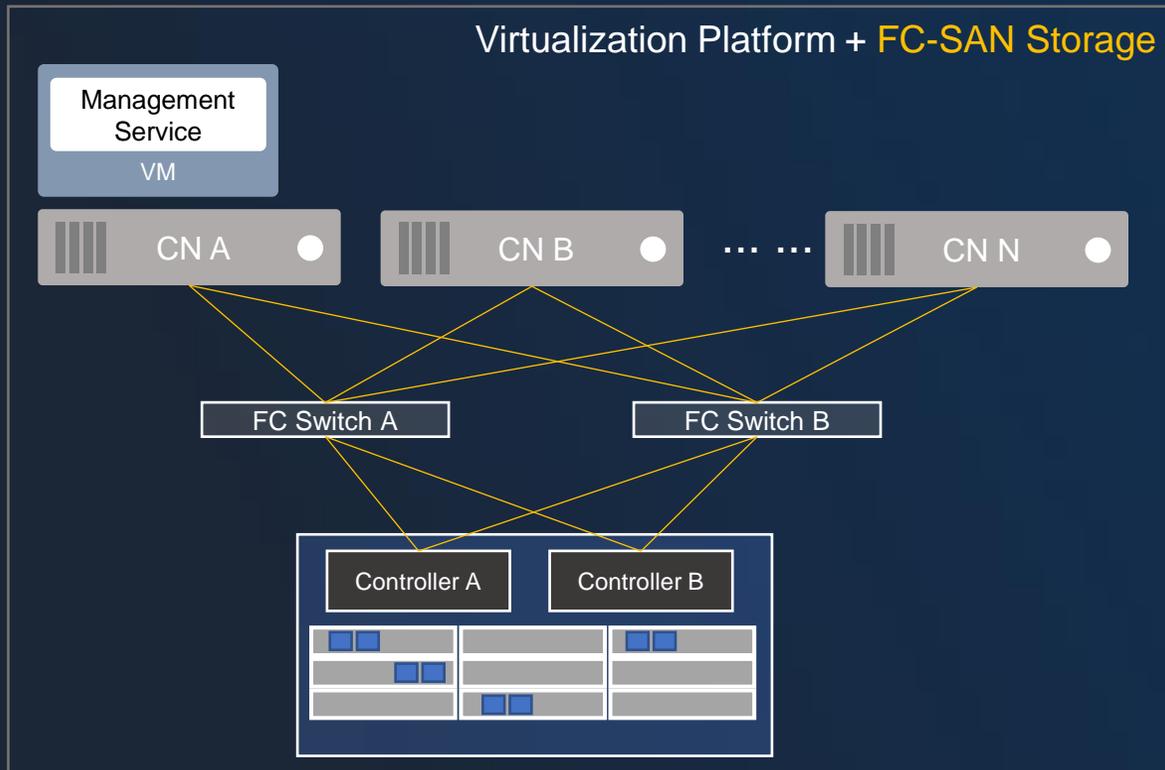
ZStack Functions

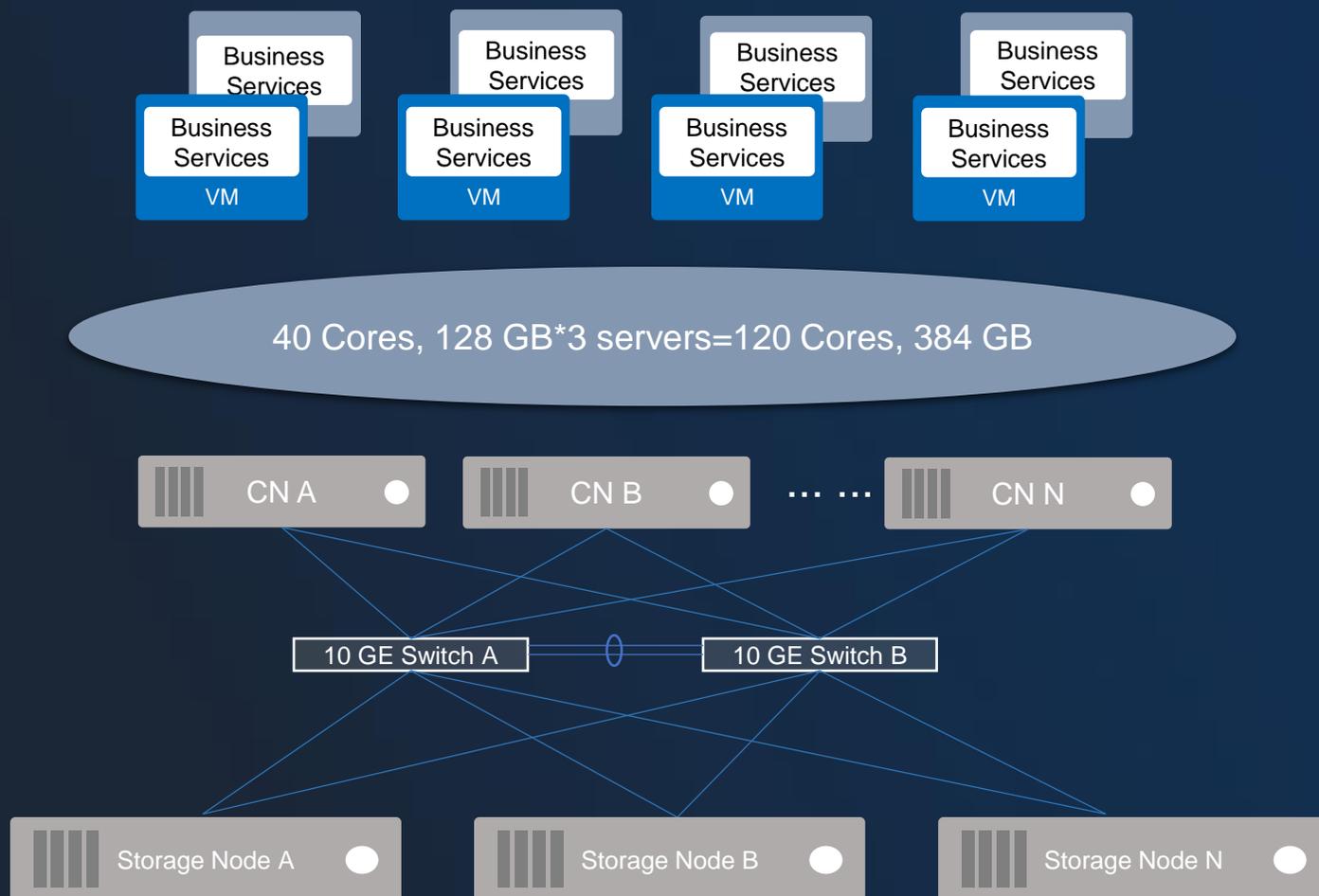
6

VMware v2v operation

01 Virtualization Platform Solutions

- **Compute nodes (CN)** are virtualization OS installed from physical servers;
- **Management nodes (MN)** are virtualization platforms deployed from other physical servers or VMs;
- **On the virtualization platforms, FC-SAN and distributed storage can be selected to connect to the terminals;**
- The link from compute nodes to FC-SAN or distributed storage is designed to be fully redundant to avoid single points of failure.





Resource Pooling

Suppose one server has 40 cores of CPU and 128 GB of memory. Then, 3 servers can have 120 cores of CPU and 384 GB of memory. If a VM is configured with 4C8G, a total of 30 VMs can be created.

Resource Scheduling

Virtualization platforms include a great many of resource scheduling features, such as high availability, hot migration, dynamic resource scheduling, and auto scaling, thereby achieving required scheduling between physical servers for VMs.

What else?

01 What Else?

Virtualization cannot deal with the management questions generated by the large-scale IT environment. For example:

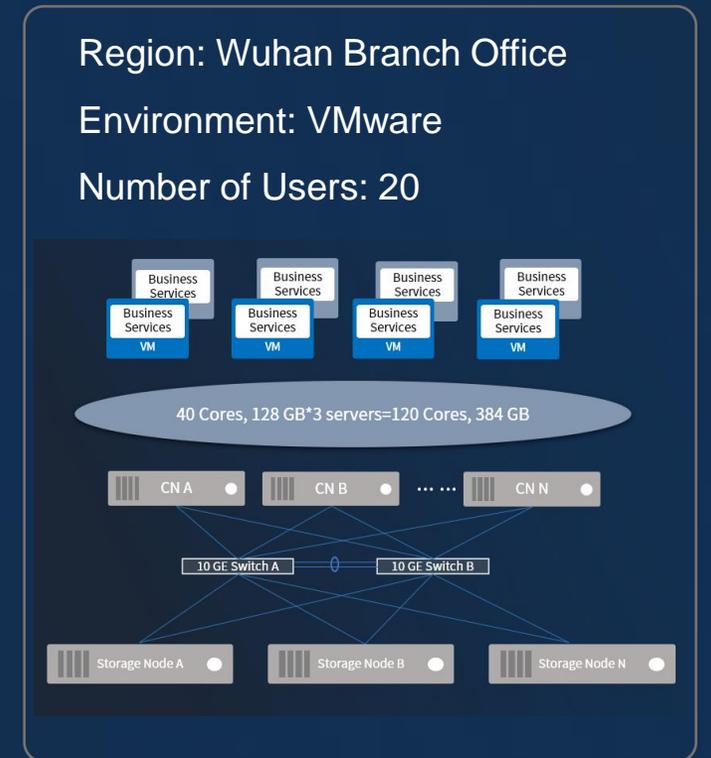
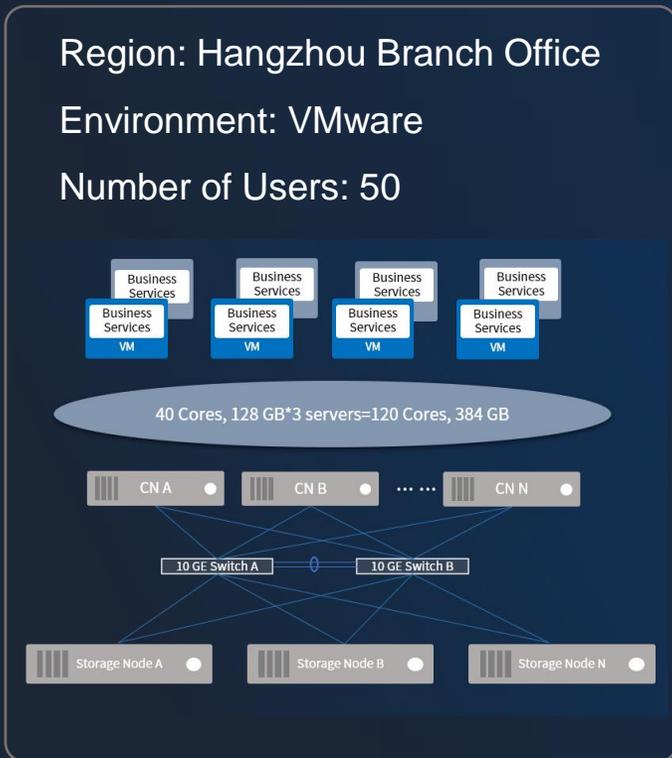
Multi-region: Manage IT resources located in different regions:

Multi-platform: Use a platform and system to centrally manage different resources on different clouds;

Multi-tenant: Automatically allocate and deliver resources to different users as needed.



Some features are left undone with virtualization, such as billing, self-service catalog, cost analysis, and configuration management.

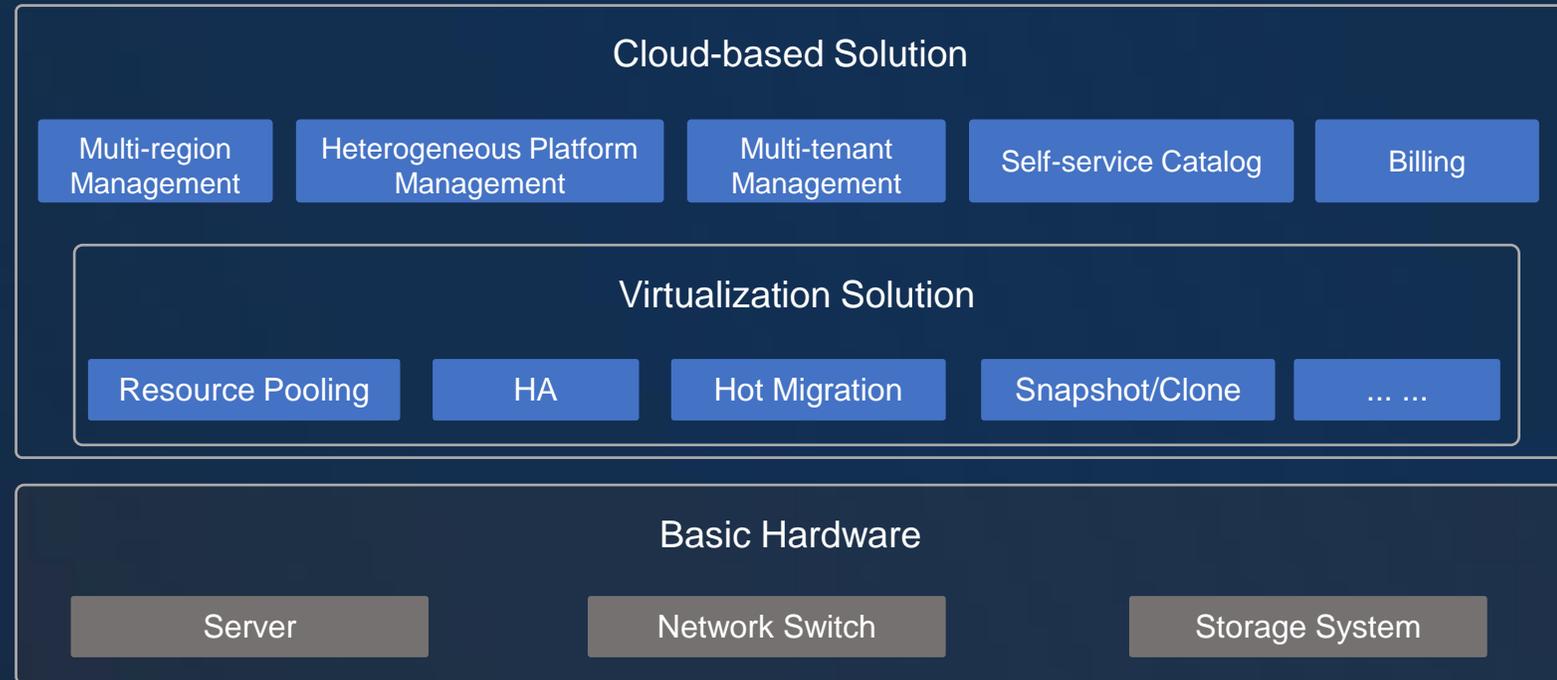


Virtualization

- Resource pooling
- Resource scheduling

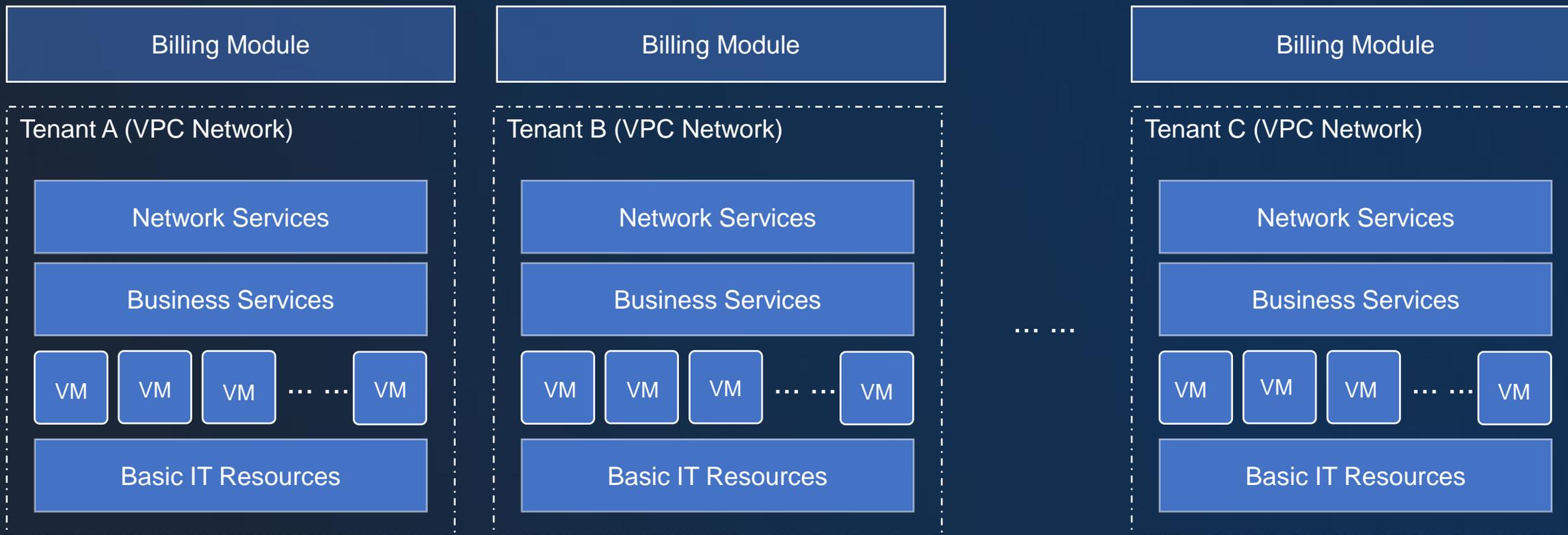
Cloud Platform

- Resource Pooling: Computing, network, and storage virtualization
- **Unified Management: Multi-zone and integration of heterogeneous platforms**
- **Granular Operations: Multi-tenant and billing**
- **Self-service: Service catalogs and self-service delivery**



Multi-tenant Management

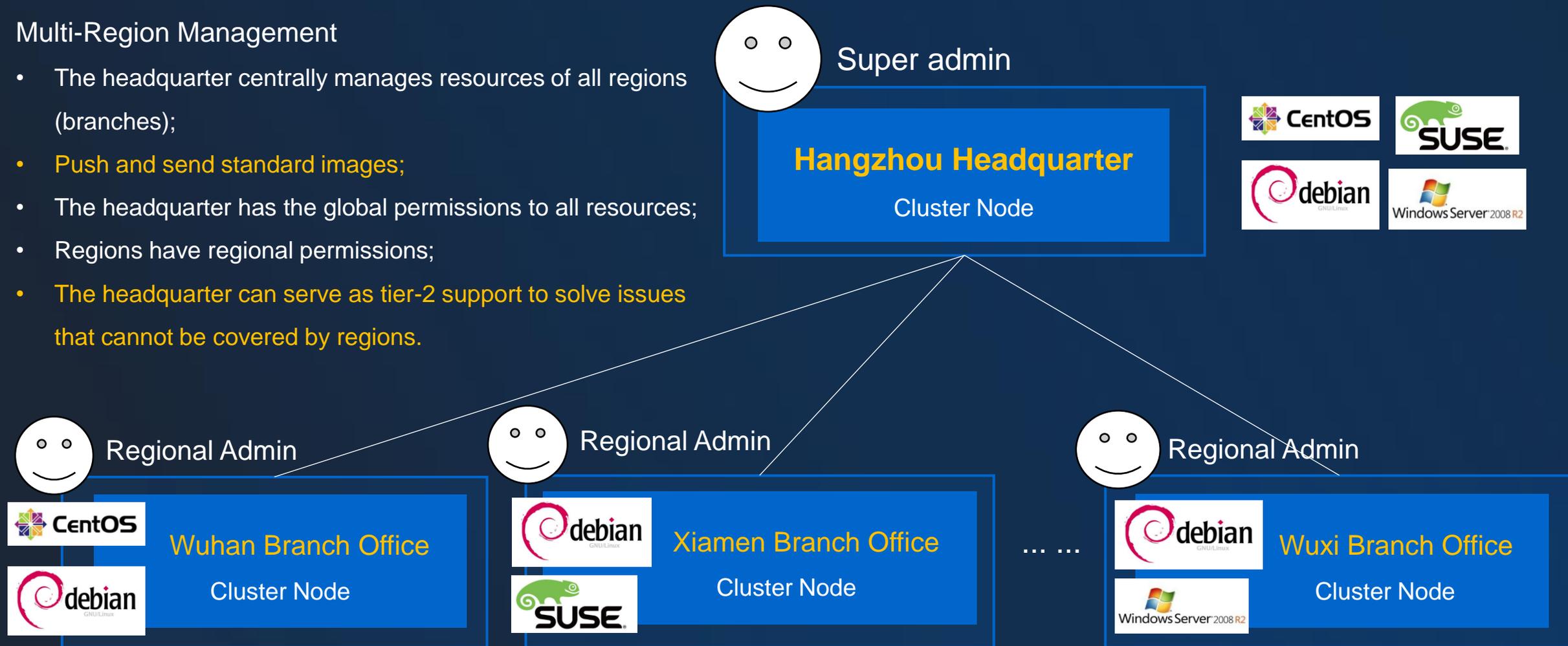
- Resources and networks (networks can be customized) are isolated among tenants/projects;
- Resource billing are available for tenants/projects.



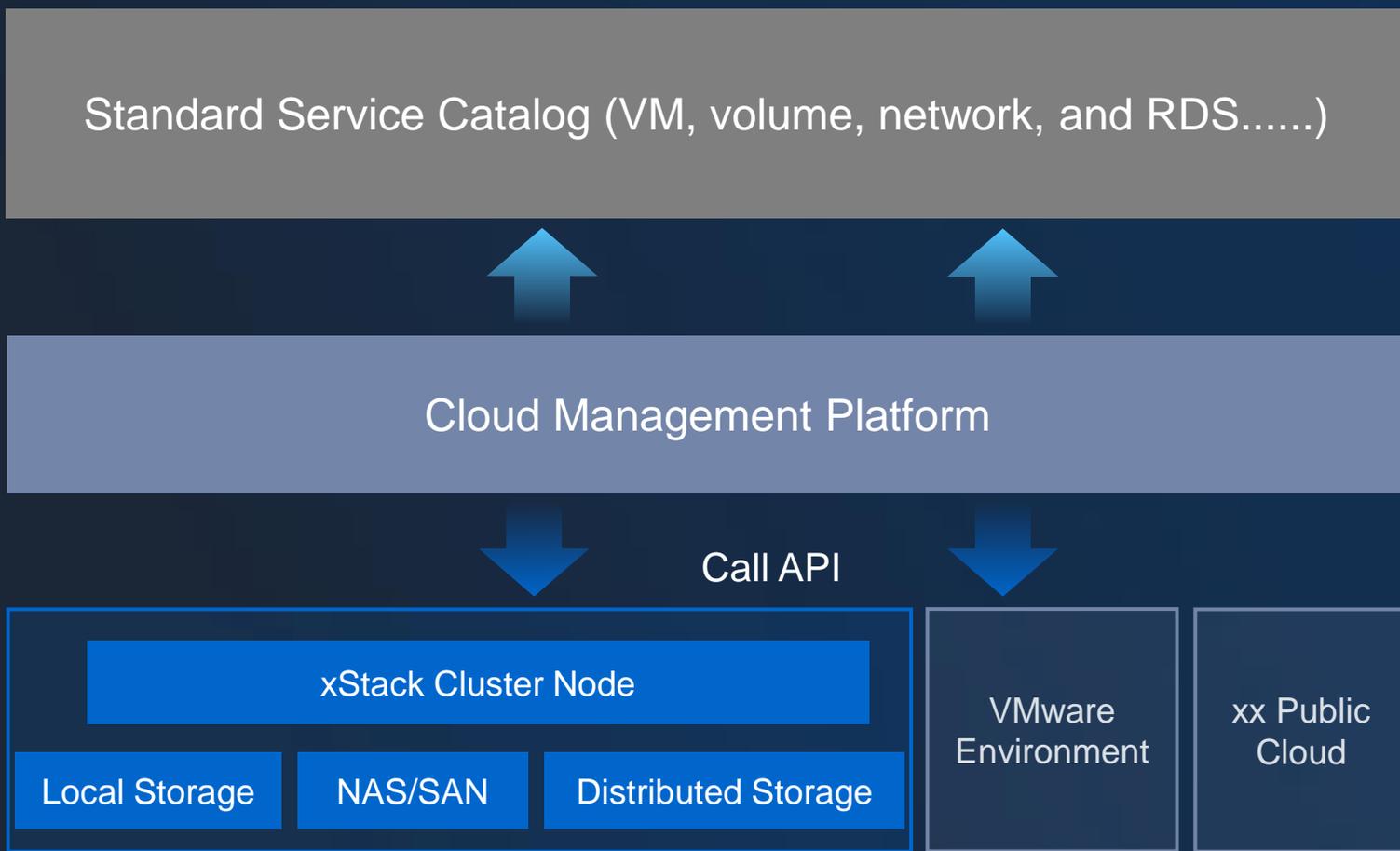
01 Cloud-based Solution – Multi-Region Management

Multi-Region Management

- The headquarter centrally manages resources of all regions (branches);
- **Push and send standard images;**
- The headquarter has the global permissions to all resources;
- Regions have regional permissions;
- **The headquarter can serve as tier-2 support to solve issues that cannot be covered by regions.**



01 Core Functions – Heterogeneous Platform Management



Heterogeneous Platform Management

- Enterprises have various IT architecture platform;
- APIs can be called to use resources of heterogeneous platforms;
- Differences of heterogeneous platforms are avoided;
- Standard service catalogs are presented to users.

Cloud Platform vs CMP

- Clouds can manage and provide self-service resource delivery.
- CMP has similar features like clouds, but resources are delivered by third-party environments;
- Generally, CMP can integrate with a wide range of third-party platforms.



Simple

Easy Deployment. Easy Maintenance

- One-click download, complete installation & deployment within 30 min
- One host to set up a POC environment
- One management node to manage the whole cloud platform
- One maintenance technician can handle maintenance with ease.
- Upgrading single ZStack Management node in few steps.



Scalable

Unified Management of Various Resources & On-demand Delivery

- Unified management of different virtual platforms
- Providing load balance, scalability and dynamic scheduling to deliver service resources on demand.
- Providing standard HTTP RESTful APIs to seamlessly integrate third-party CMPs, PaaS and OA.
- One management node can manage 10000 computing nodes.



Strong

Operations are extremely fast, with powerful feature set.

Number of VM created	Time Cost
1	0.51 seconds
10	1.55 seconds
100	11.33 seconds
1000	103 seconds
10000	23 minutes



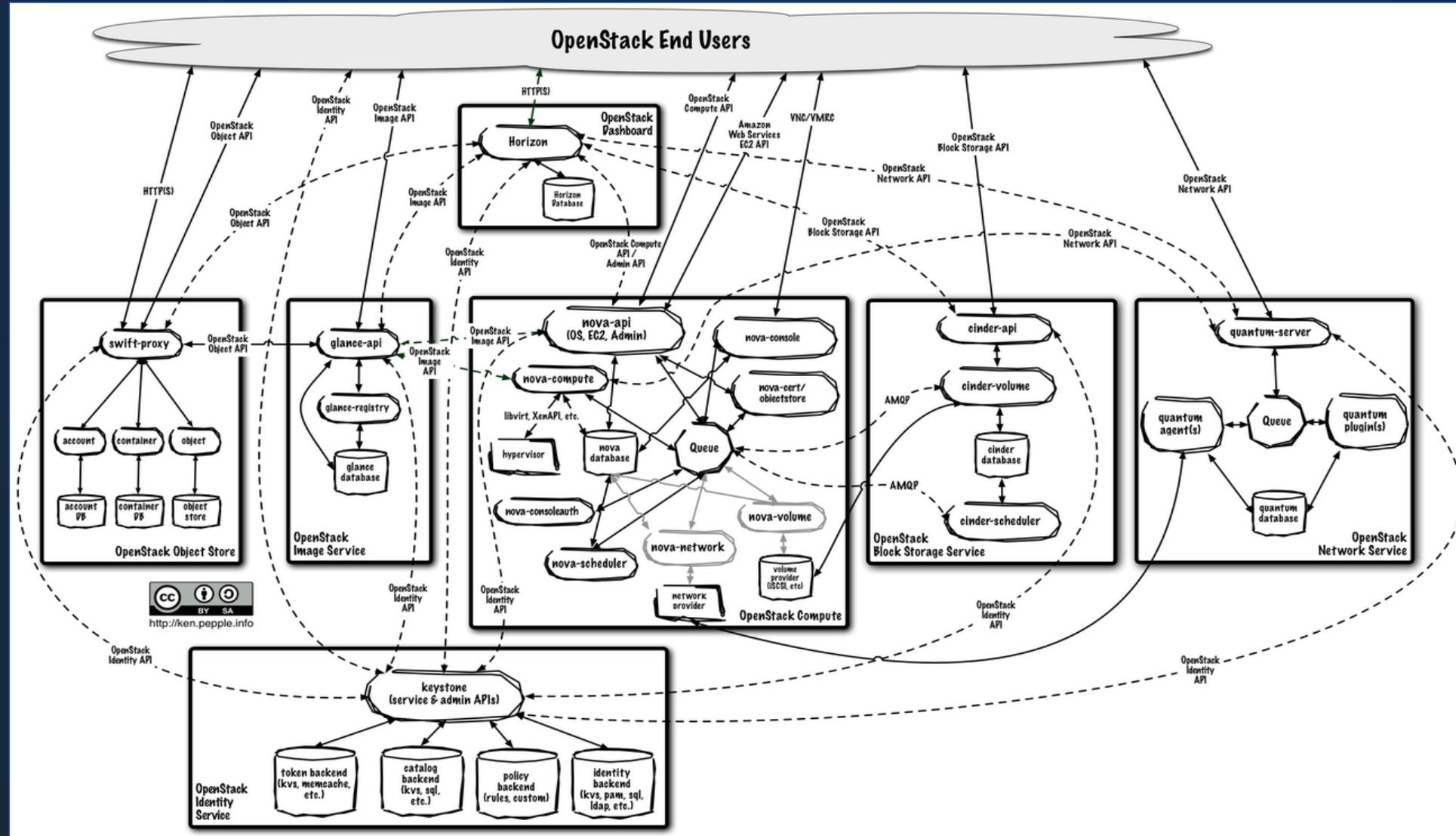
Smart

Seamless upgrading. One-click upgrade

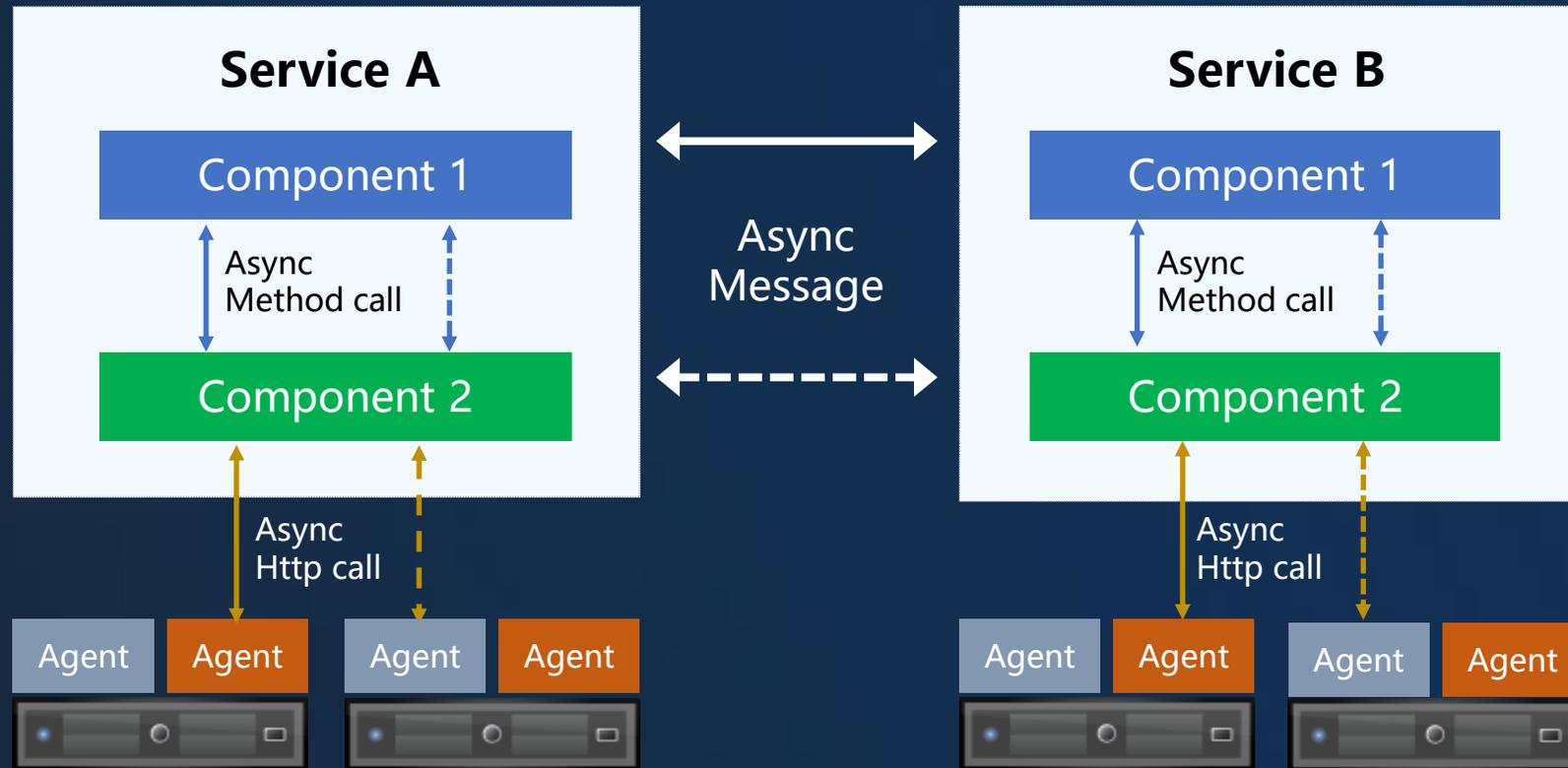


01 Cloud Microservice Architecture

Pure microservice architecture has some flexibility, but not enough ease of use, stability, and scalability.



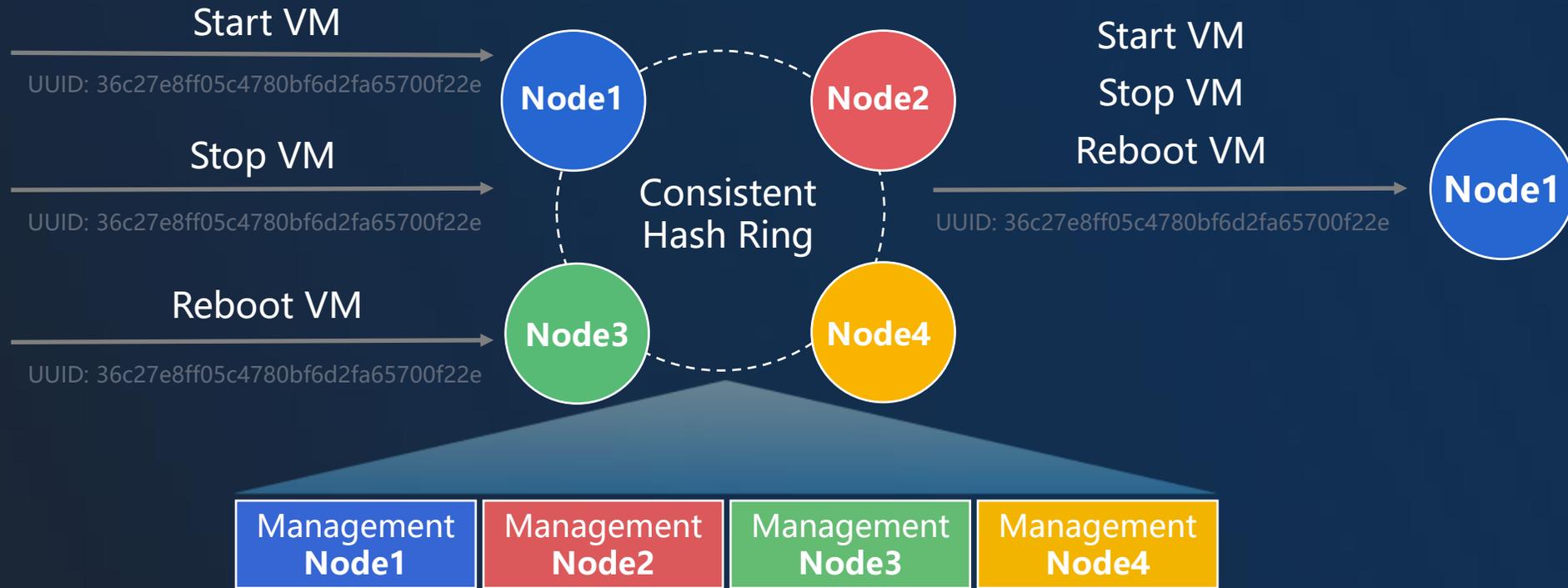
01 Fully Asynchronous Architecture



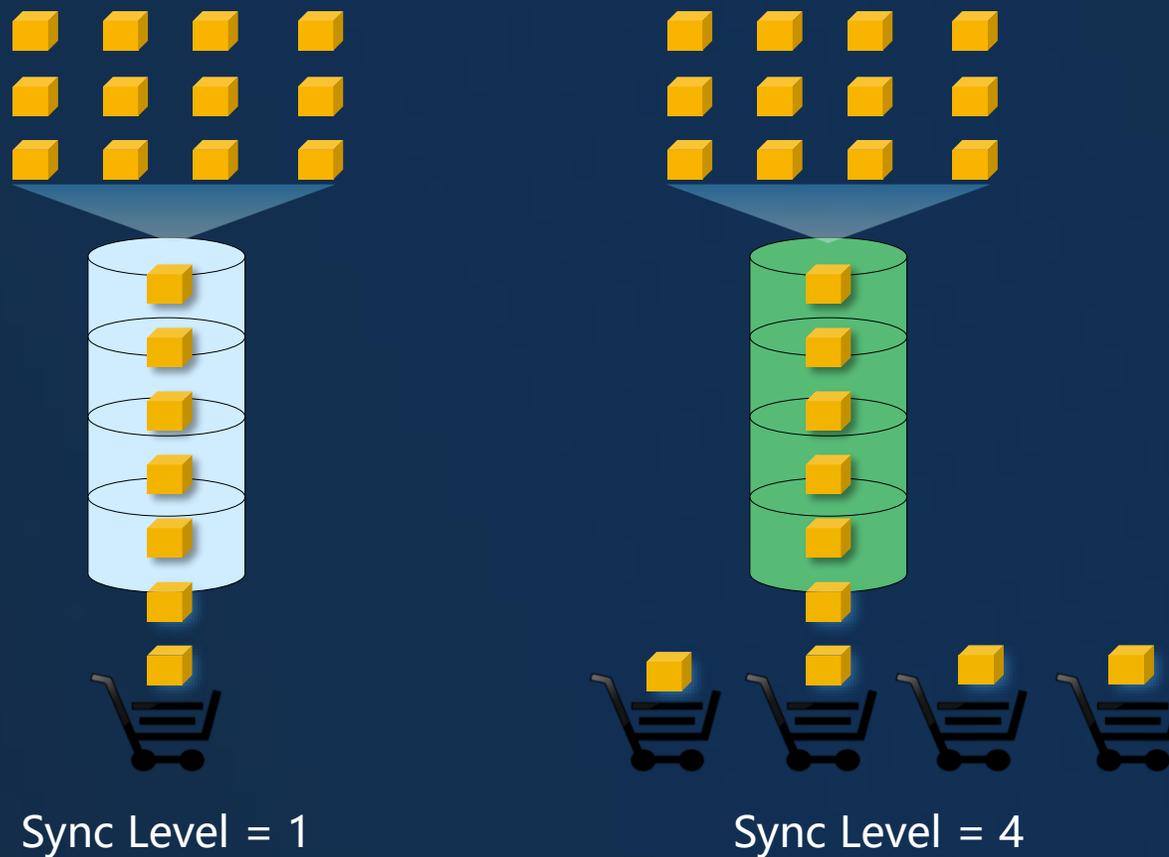
A thread pool of 500 threads can serve 10,000+ concurrent APIs.

01 Stateless Service Architecture

Consistent hash rings guarantee that requests for the same resource will only be processed by the same microservice.



The degree of concurrency can be controlled by a queue for each operation on each resource.



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Hardware Selection

- **Server:** Any manufacturer, obtain the configuration through the server's official website ;
- **CPU:** Intel/AMD, ARM, at least 1 CPU (8 Threats);
- **RAM:** At least 8G Memory;
- **Network card:** Management NIC-1GB,IPMI-1Gb, service NIC-10Gb~25Gb
- **RAID:** The system disk must be RAID1, support RAID 1 and JBOD mixed modes;
- **HBA:** FC HBA, not recommended using Emulex;
- **HDD:** SAS/SATA, recommended using 600GB~4TB, commonly using 1~2 TB;
- **SSD:** Except for distributed storage, recommended using 3DWPD SSD;
- **GPU:** All graphics cards can be passthrough, needs motherboard support IOMMU. vGPU support AMD/NVIDIA, NVIDIA requires its license;
- **Other cards:** Support all PCI/E card passthrough, a few failure cases require server, card, and OS vendors to participate in troubleshooting.

Newly built: The latest RAID controller drivers may not be available on Linux, need to be installed manually;

Reuse the old: Adjust according to the structure.

- **CPU:**
 - Model: E5-XX-v3/Gold. ZStack recommends planning the cluster based on the CPU model.
 - Cores and threads: BIOS hyper-threading is turned on by default. Non-x86 CPU does not support hyper-threading technology.
- **xPU:**
 - GPU: all GPU models support passthrough in x86 server, some NVIDIA/AMD GPU models support vGPU.
 - TPU/NPU/DPU: pass-through support by PCI/E.

- **ZStack Supported Storage**

- **Local Storage:** Host local drive
- **NFS:** Standard NFS protocol
- **Shared Mount Point:** MooseFS, GlusterFS, OCFS2, GFS2 ...
- **Ceph:** ZStack SDS, Ceph Community
- **Shared Block:** FC-SAN, IP-SAN
- **AliyunNAS:** Aliyun distribute file storage
- **AliyunEBS:** Aliyun distribute block storage

- **Recommended storage:**

- Main recommendation **SAN and Ceph.**

- **Precautions:**

- In distributed storage, MON node must be SSD, and plan an SSD cache disk, a 10G network is a must.
- Share Mount Point, the file system must be in the whitelist of libvirt.
- NFS, be attentive to NFS permission settings.

Note:

ZStack supports mounting different storage types in the same cluster, but has a number of limitation.

In ZStack, the L2-network is the interface name, and the L3-network is the IP segment.

- **General network:**
 - Can be divided into service networks, management networks, storage networks, hot migration networks, VTEP network, VDI network and etc. based on the scenarios.
- **SRIOV:**
 - Needs NIC support SRIOV and PCI/EP passthrough.
 - VF has a similar performance with PF.
- **IB network:**
 - Configured as IPoIB model. Generally used in high-performance, not commonly used, Ethernet network can be substituted.

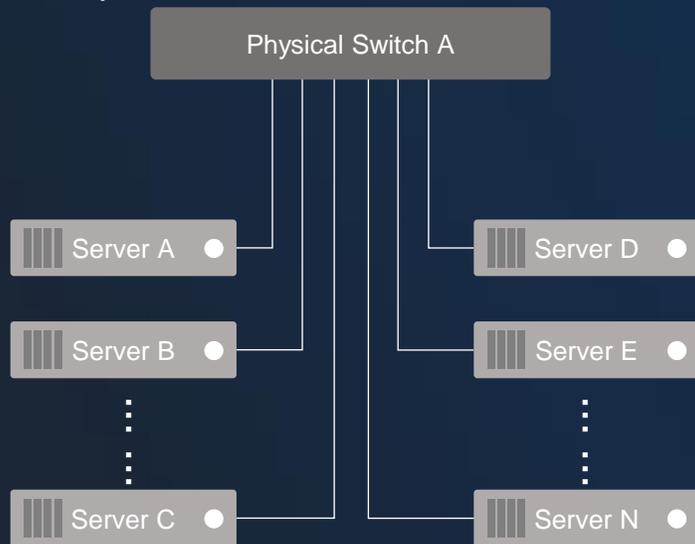
02 Physical Network Basics – VLAN

VLAN (Virtual Local Area Network)—the Most Common Network Technology

- Divides a physical LAN into multiple broadcast domains or a logical collection of virtual LANs that cannot directly communicate with each other;
- Improves network performances, network securities, and network management capacities.:
- **Major Technology Workflow: Add a 4-byte VLAN tag in Ethernet frames, namely VLAN Tag, such as VLAN 10.**

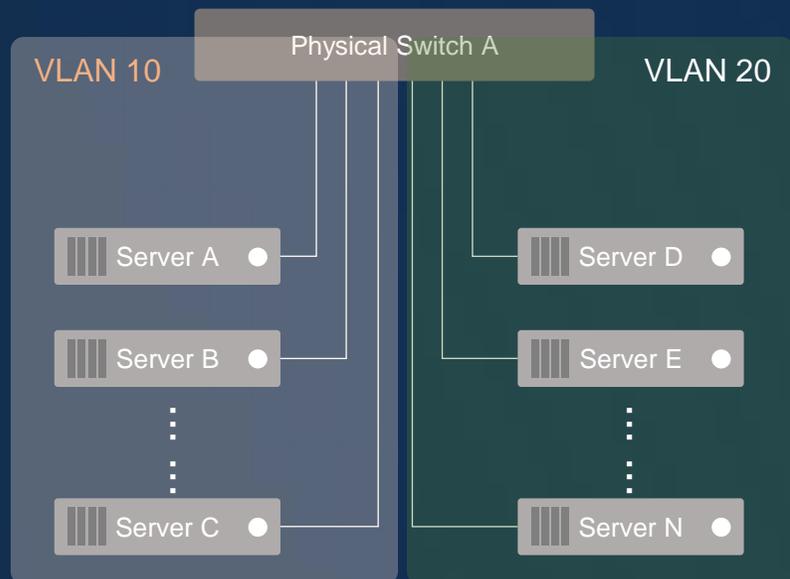
Non-VLAN Network

- All servers on the same broadcast domain will affect performances.



VLAN Network

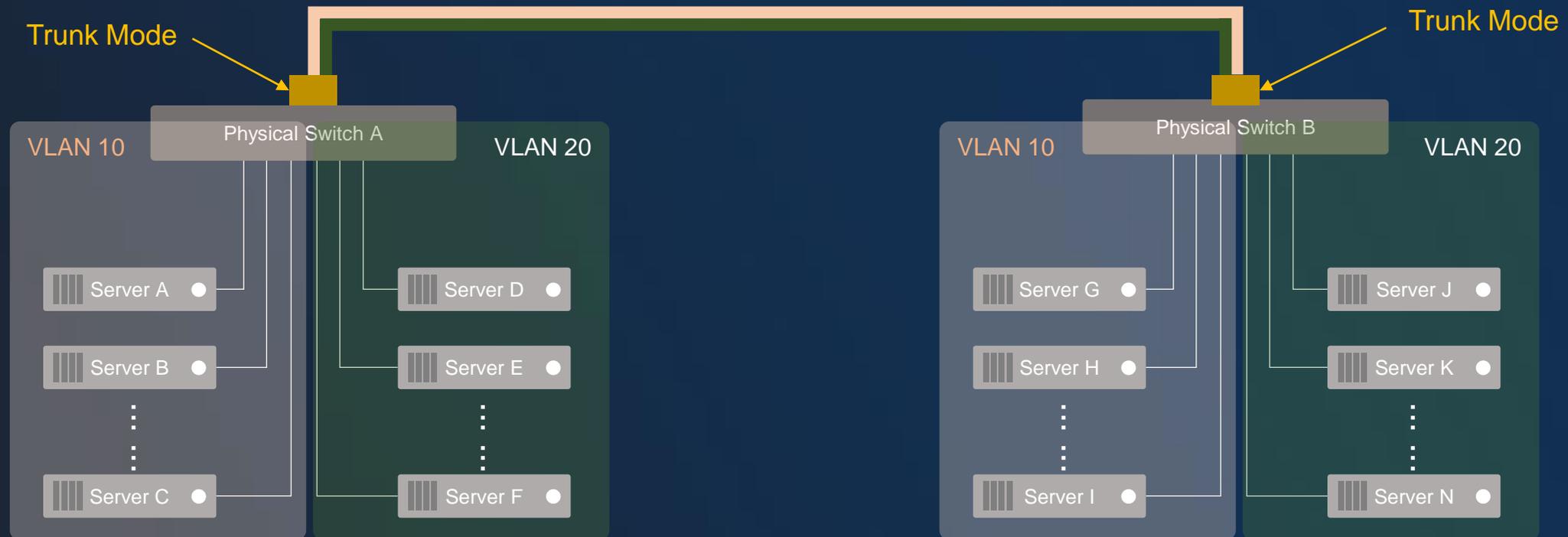
- VLAN-divided broadcast domains can improve network management capabilities.



02 Physical Network Basics – Trunk

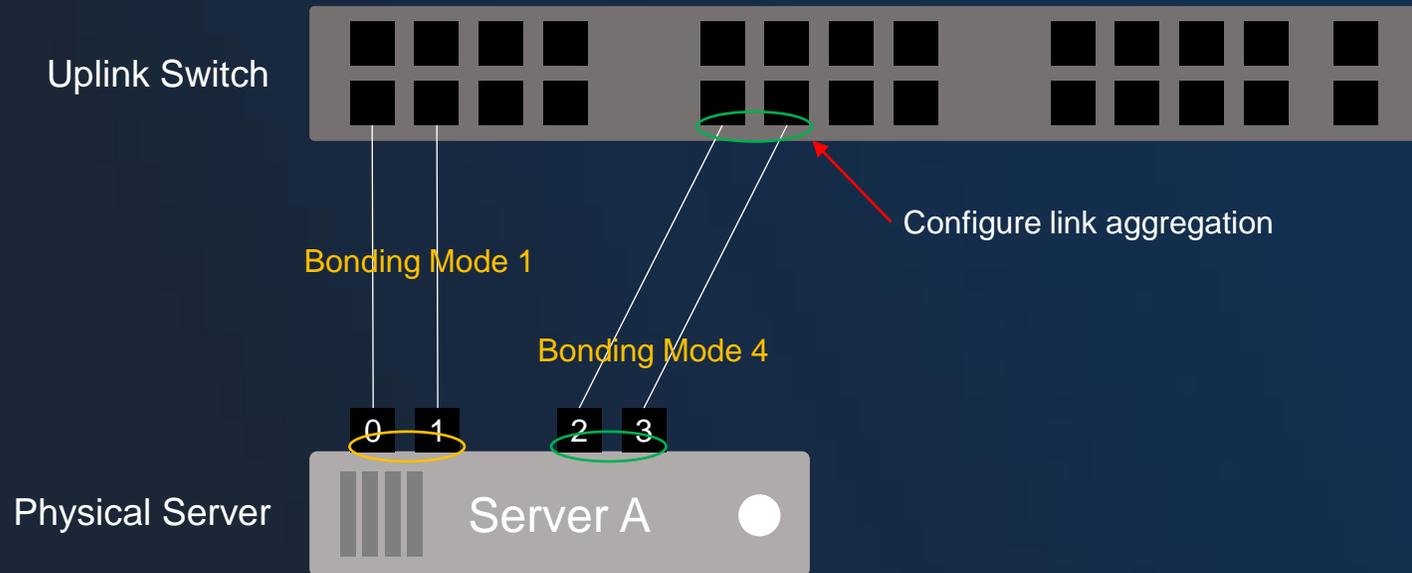
Trunk

- Three types of links: Access, Trunk, and Hybrid
- **Access Port:** Belongs to one VLAN (Only this VLAN is allowed); Generally, used to connect servers – Port is untagged;
- **Trunk Port:** Carries multiple VLANs on a single physical link, and receives and sends multiple VLAN messages; Generally, used to connect switches to other switches;
- **Hybrid Port:** Similar to Trunk, workflows are slightly different as data frames are sent. Used for either connecting switches or servers.



Bond

- Combines multiple network interfaces into a single logical interface to provide redundancy and bandwidth aggregation;
- **Major Application Scenario:** When a switch/physical server port fails over, network connectivity is not affected.



Bonding Mode=1

Active-backup. Another slave interface becomes active if one active interface fails.

Bonding Mode=4

IEEE 802.3ad Dynamic link aggregation policy. Creates aggregation groups that share the same speed and duplex settings. (Configure the link aggregation on the uplink switch)

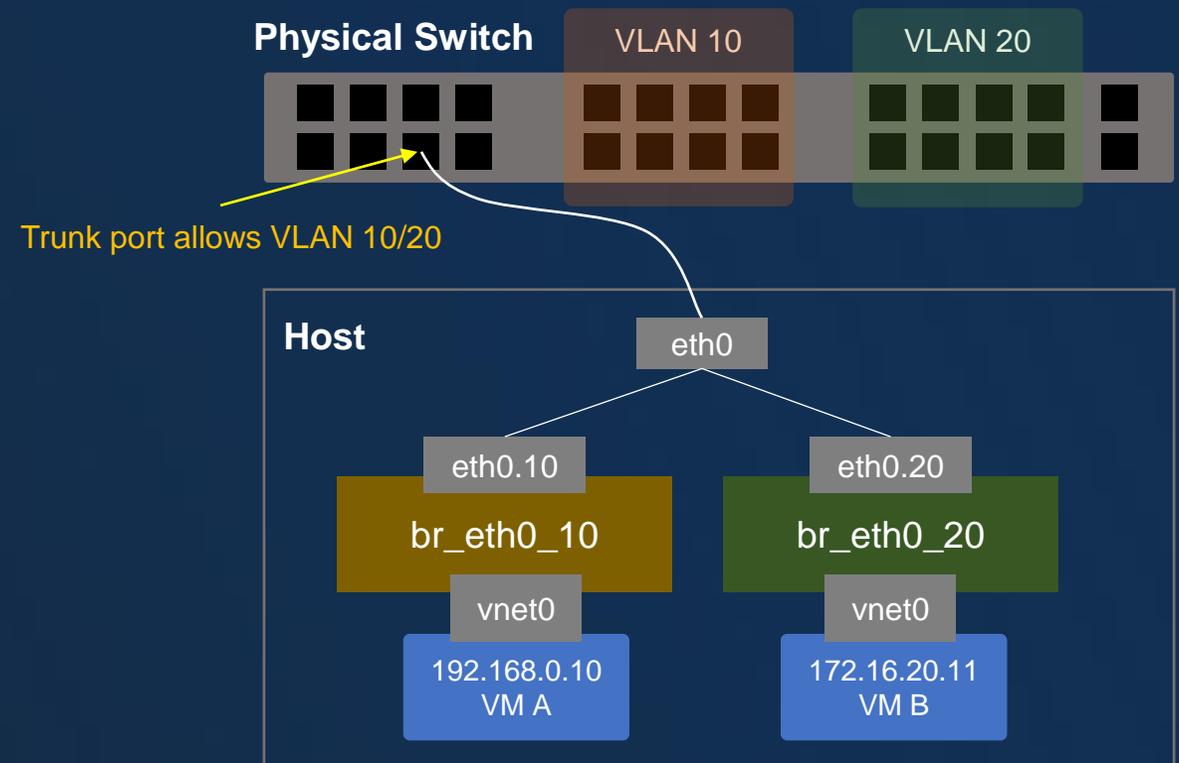
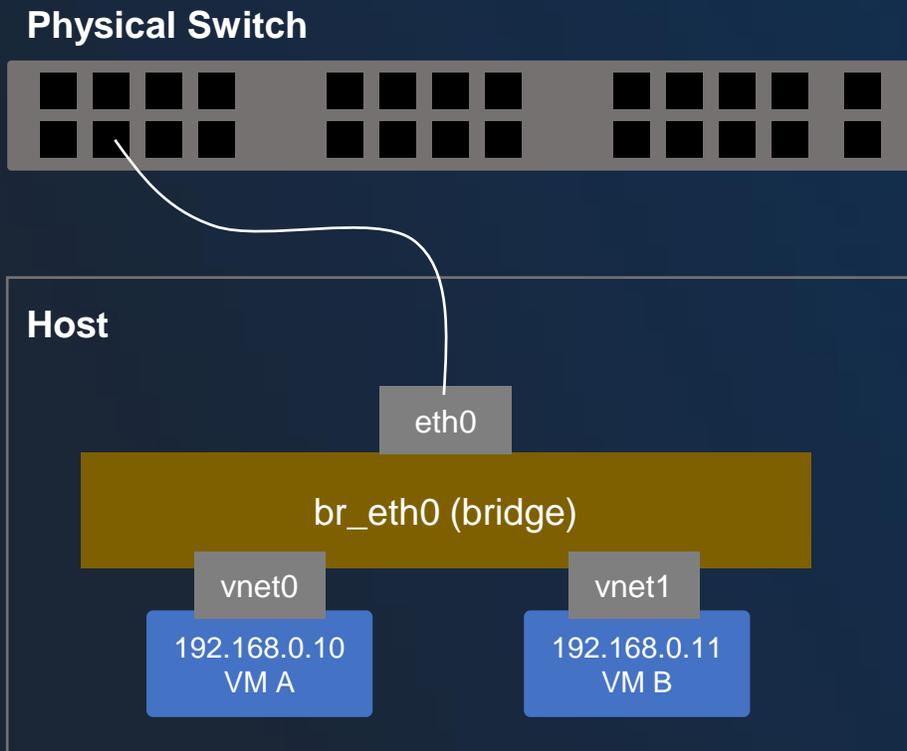
Bond Mode=0, 2, 3, 5, and 6

Have different bonding mechanisms.

02 Linux Network Basics – Network Bridge

Linux Bridge

- A switch device used for L2 network communication in Linux. It can be understood as one virtual switch running on the operating system (e.g. br0 in the following figure) The same as physical switches, the uplink port, eth0 (physical interface), connects physical networks, while the downlink port, vnetx, connects virtual networks of VM instances;
- Configure the VLAN sub-interface (e.g. eth0.10) for eth0 and create the corresponding bridge (e.g. br_eth0_10) to achieve interconnections between VLAN configurations and external physical VLAN networks.



02 Network Types on the Cloud

Typical Network Types on the Cloud

Management Network

- Provides network services used by management nodes, such as sending commands to check node heartbeats and create VM instances;
- VM Migration Network: Migrates VM instances from one compute node to other compute nodes;
- Backup Network: Backs up VM instances to one storage location.

Business Network

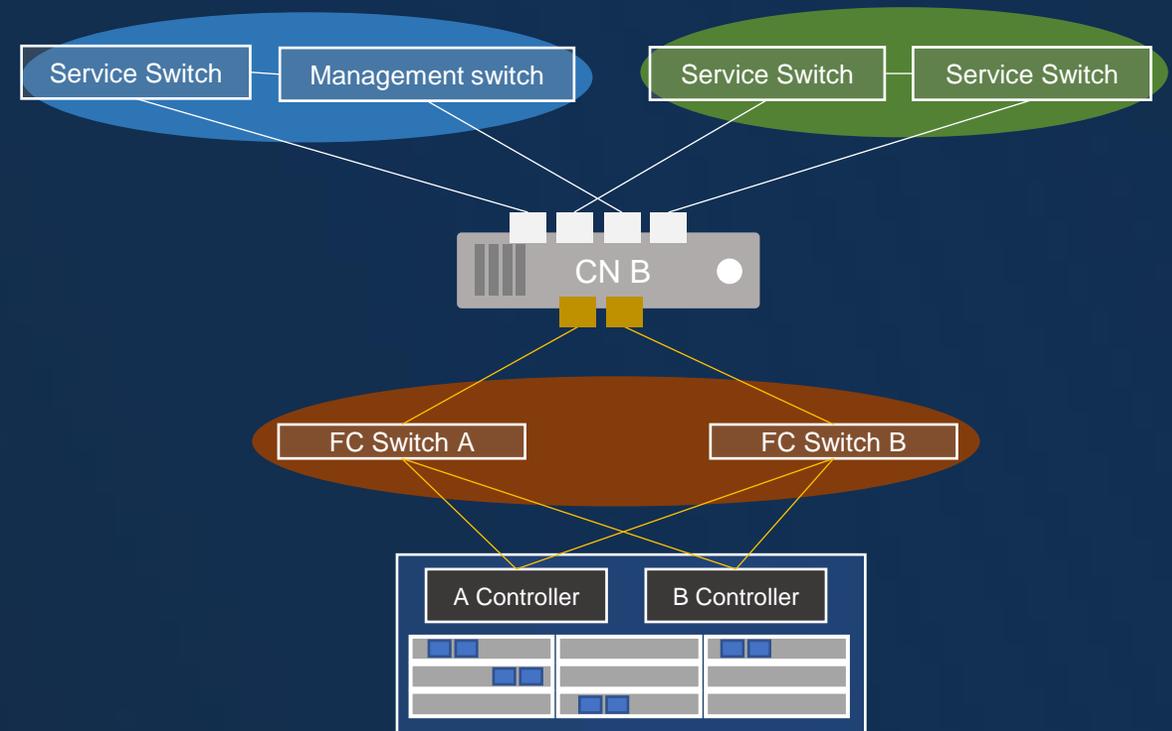
- Operates services of VM instances;
- Matches the actual networking environments. If users plan different business networks for different businesses, there will be a group of business networks.

Storage Network

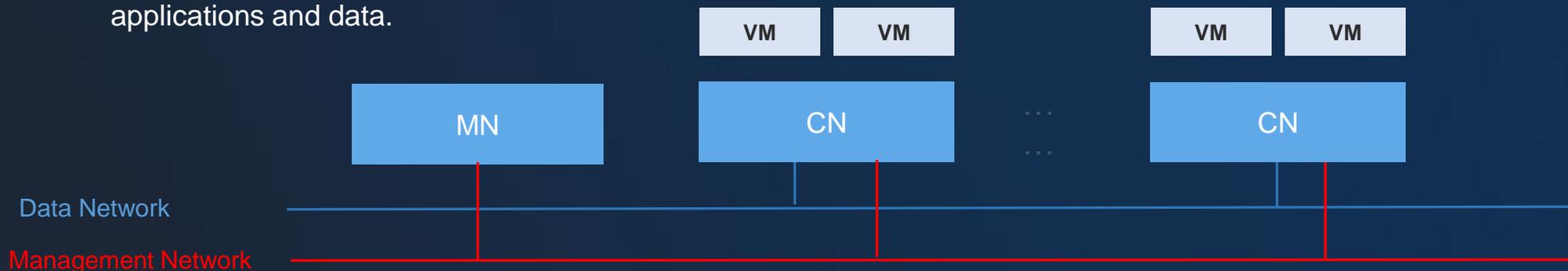
- Provides storage resources to the Cloud;
- For NAS/distributed storage, the network is an IP-based network;
- For SAN storage, the network is an FC-based network.

Example: Physical Networks of A Server

- The server is configured with 4 GbE/10 GbE ports and 2 FC ports;
- 2 NICs are bound for the management network used to manage nodes and migrate VM instances;
- 2 NICs are bound for the business network used to provide business access services;
- 2 FC-port multipath is used to provide storage resources to the Cloud.

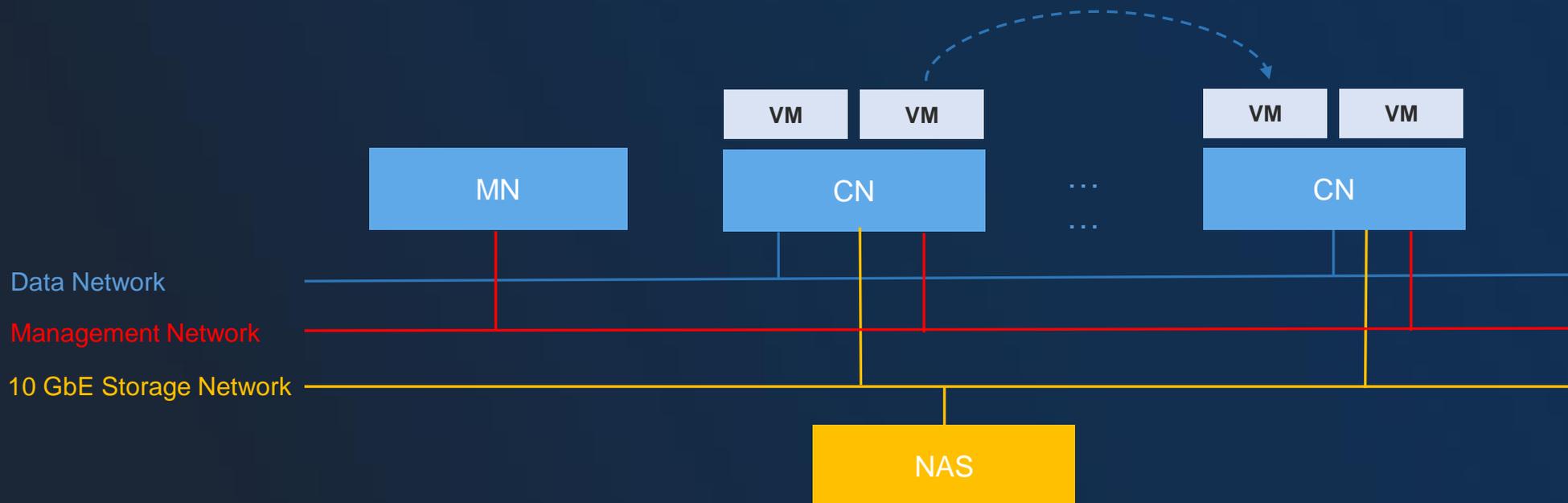


- KVM virtualization resides on compute nodes;
- Compute nodes have local storage space that can be used to store virtual disks (volumes);
Data of VM instances rely on RAID technology of nodes;
- Requires lower investments, saves storage network resources, while brings about high performances for VM instances;
- Characteristics: Low investment, high performance, large scale.
However, due to high availability concerns for business layers, hot migrating VM instances is not allowed.
- Scenarios: Software development and testing environment , distributed applications, separation between applications and data.



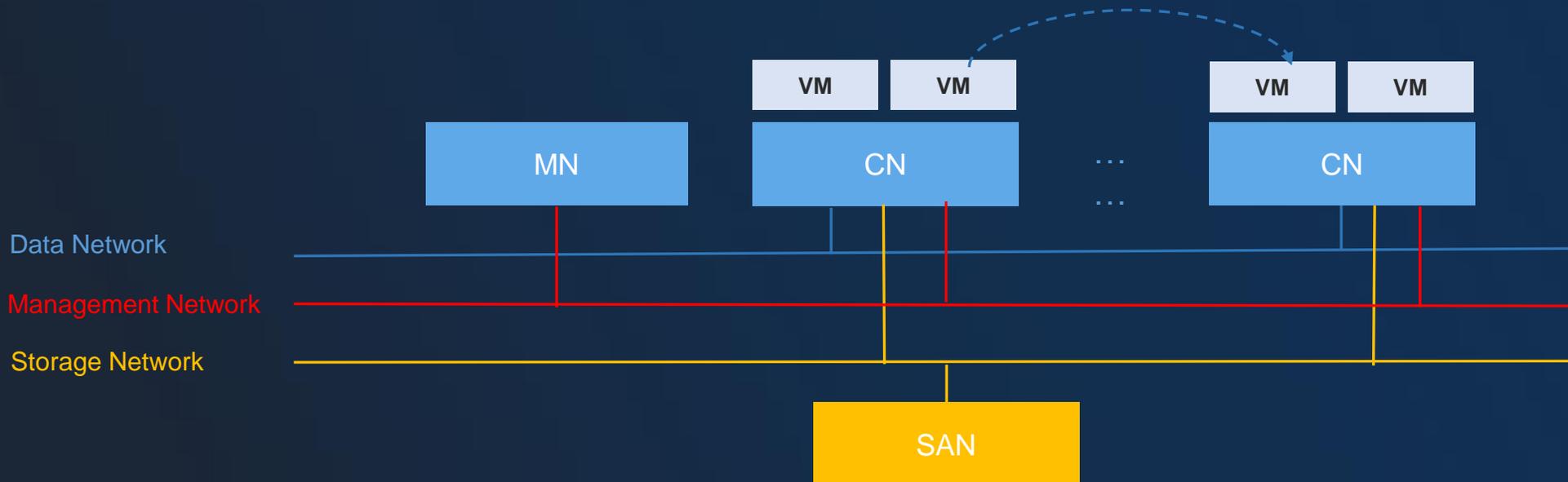
02 NAS Storage

- Volumes reside on centralized storage, while their data are protected by storage dual-control and RAID technologies;
- We recommend that you establish a 10 GbE storage network and purchase centralized storage; Ensure that VM instances are configured with high availability;
- Characteristics: Storage network, VM HA, and data security; IO performances will be affected (8 ~ 10 node/storage);
- Scenarios: Traditional applications, tight application data, SLA insurance, and data security;

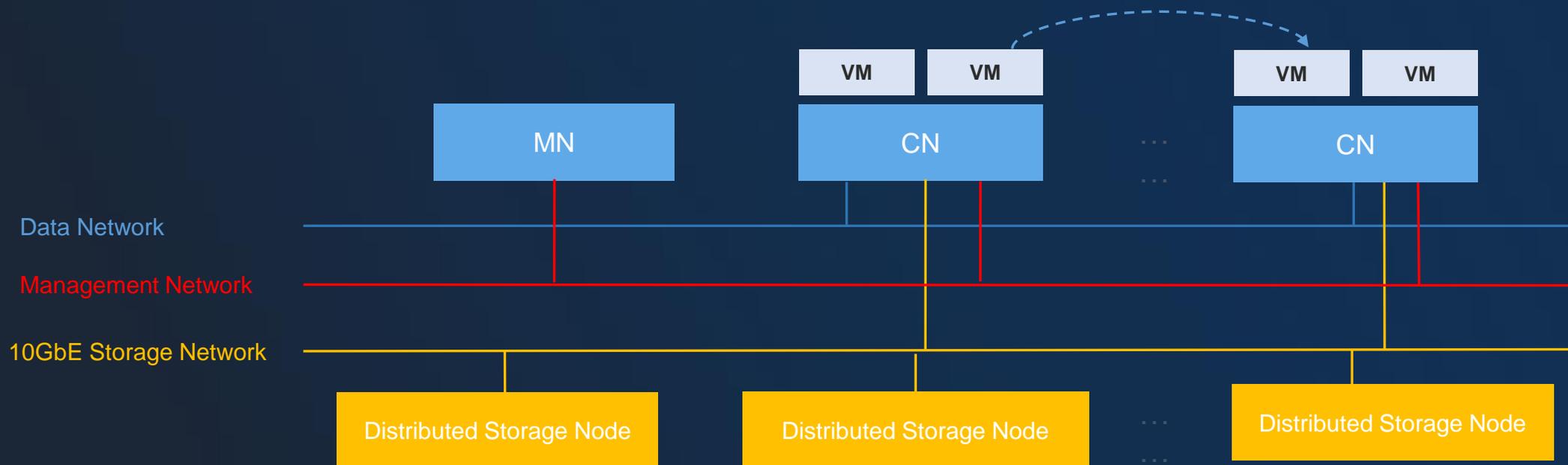


02 SAN Storage

- Volumes reside on centralized storage, while their data are protected by storage dual-control and RAID technologies;
- We recommend that you establish a 10 GbE storage network, purchase centralized storage, and provide VM HA; Characteristics: Storage network, VM HA, and data security; IO performances will be affected (8 ~ 10 node/storage);
- Scenarios: Traditional applications, tight application data, SLA insurance, and data security;



- Volumes reside on distributed storage, while their data are protected through replicas and erasure code;
- We recommend that you establish a storage network, use x86 servers to provide storage services, and offer VM HA;
- Characteristics: Storage network, VM HA, data replicas, scale-out of computing resources;
- Scenarios: Tenancy platforms, general applications, tight application data, SLA insurance, and large-scale scenes.



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The screenshot shows the ZStack website's navigation menu. The 'Help & Support' link is highlighted with a red box. A dropdown menu is open, showing options: 'ZStack Documentation', 'Product Manuals', 'API Reference', 'Tutorials' (highlighted with a red box), 'ZStack Service', and 'Techniial Support Center'. Below the menu, the 'Installation and Deployment' section is visible, with a red box around the 'Quick Installation and Usage Tutorial' link.

The screenshot shows a Google search for 'how to install zstack'. The search bar contains the text 'how to install zstack' and is highlighted with a red box. The search results show 'About 4,330 results (0.37 seconds)'. The top result is from assistanz.com, titled 'ZStack installation and initial setup - Assistanz', with a video thumbnail showing 'STEPS TO CREATE PORT FORWARDING IN KUBERNETES' and a duration of 4:26. The second result is from YouTube, titled 'How to Install ZStack in 30 Mins - YouTube', with a video thumbnail showing 'How to Install ZStack' and a duration of 8:06. This second result is highlighted with a red box.

Minimum Requirements	Regular Requirements
4 core CPU	Intel Xeon E5-2650 v4/2 24-core CPUs, 48 threads
8 GB memory	256 GB memory
40 GB capacity	2 TB capacity
1 GbE network	10 GbE network
For ZStack lab experience	For production environment

03 Get the ISO File Ready for Installation

ZStack-defined ISO Characteristics

- 01 Customization based on CentOS 7.6
- 02 User-defined TUI
- 03 Software as nodes
- 04 Offline local Yum repositories
- 05 Script for automating network configurations
- 06 UTC/GMT+08:00, English, US keyboard language

ZStack-defined ISO Installation Mode

- 01 ZStack Enterprise Management Node
- 02 ZStack Community Management Node
- 03 ZStack Compute Node
- 04 ZStack Expert Mode

In a future move to alios/Chinses Linux dist OS

Demo

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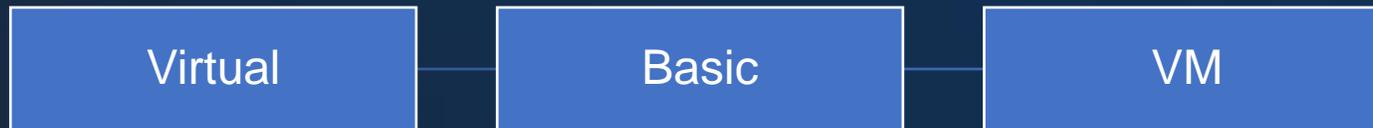
VMware v2v operation

ZStack Cloud

Edition	Scenario
Basic	Virtualization
Standard	Virtualization + SDN
Enterprise	Cloud
Enterprise Enhanced	Enterprise + Enterprise Management

Modules

Add-On Modules	Scenario
Enterprise Management	Self-service, role-based account management
Hybrid Cloud Management	Native hybrid cloud with Alibaba cloud
Bare Metal Management	Bare metal management
Elastic Baremetal Management	Baremetal as a service
Backup Service	Backup as a service
Continuous Data Protection	Continuous data protection
Migration Service	ESXi to ZStack, KVM to Zstack
VMware Management	vCenter management



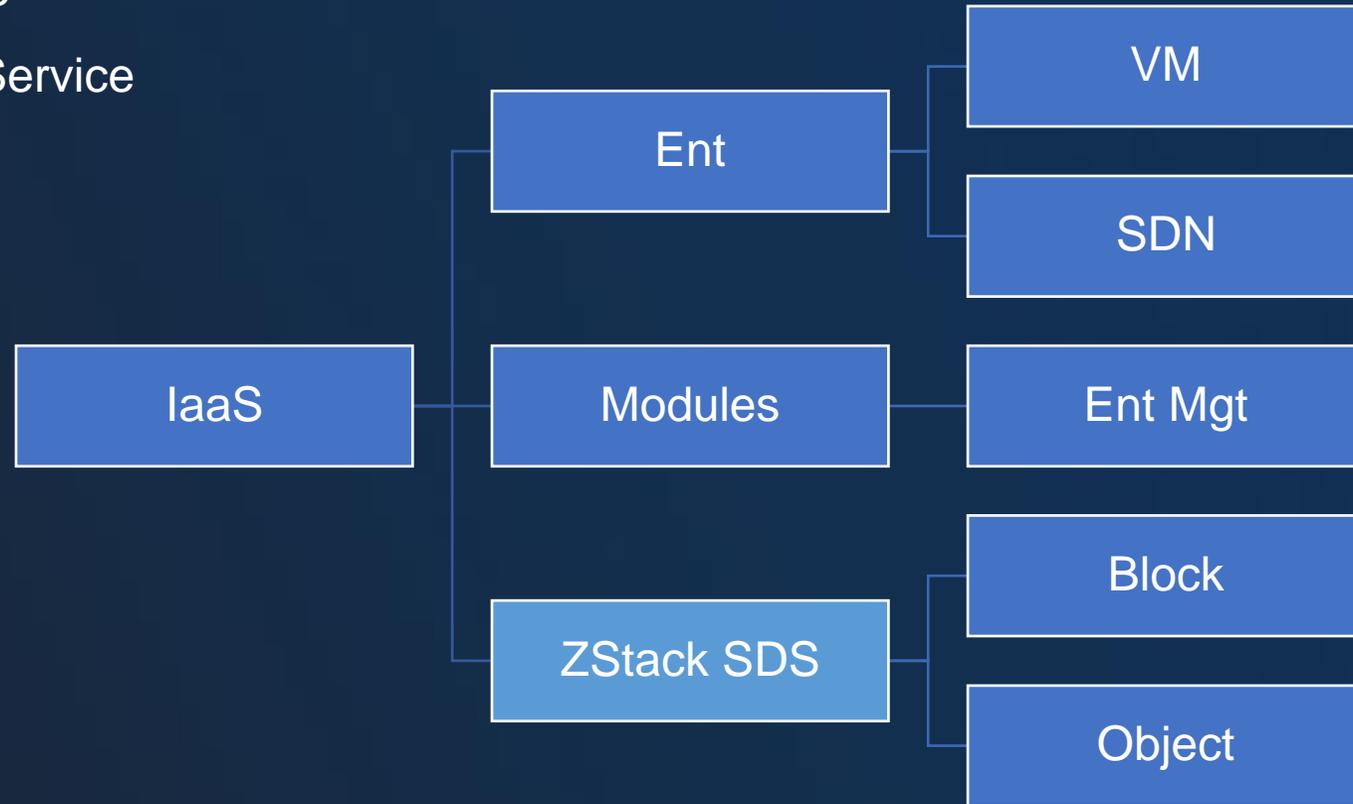
04 Infrastructure as a Service

Hyper-Convergence Infrastructure

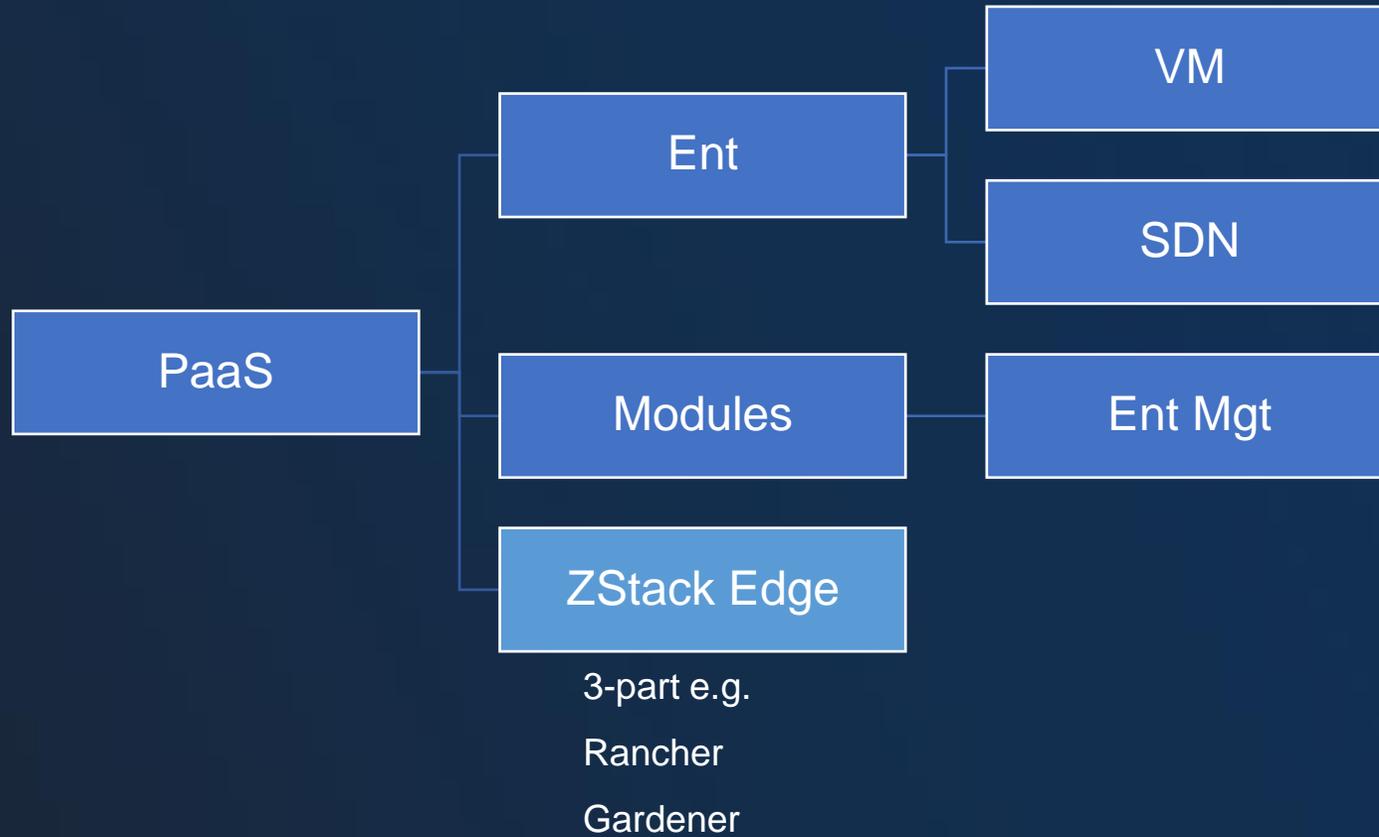
Storage as a Service

Load Balance as a Service

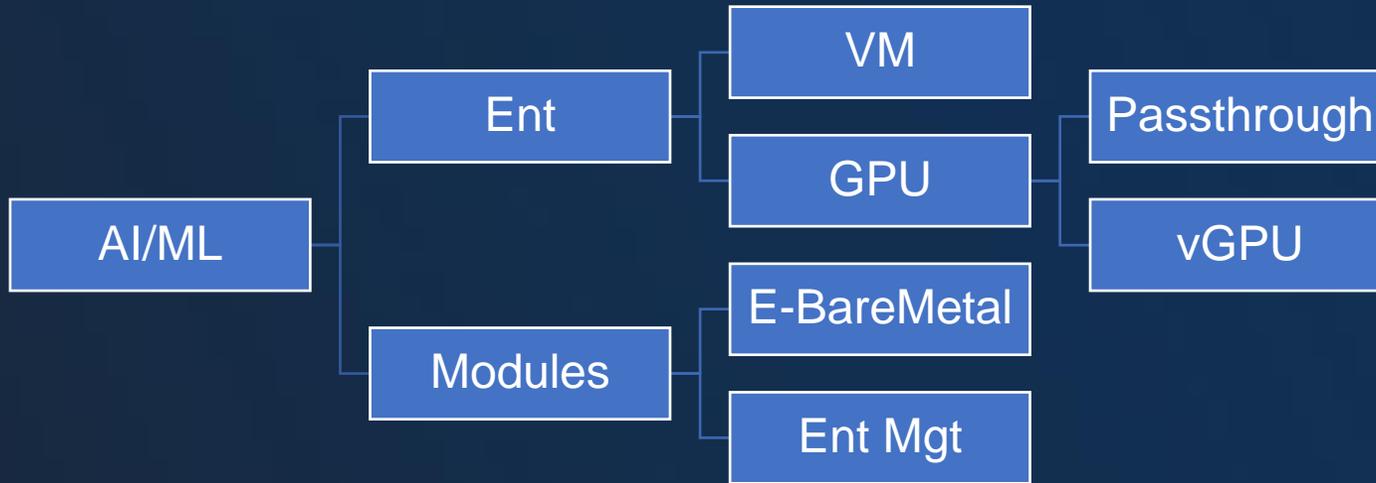
VCPE



04 Platform as a Service

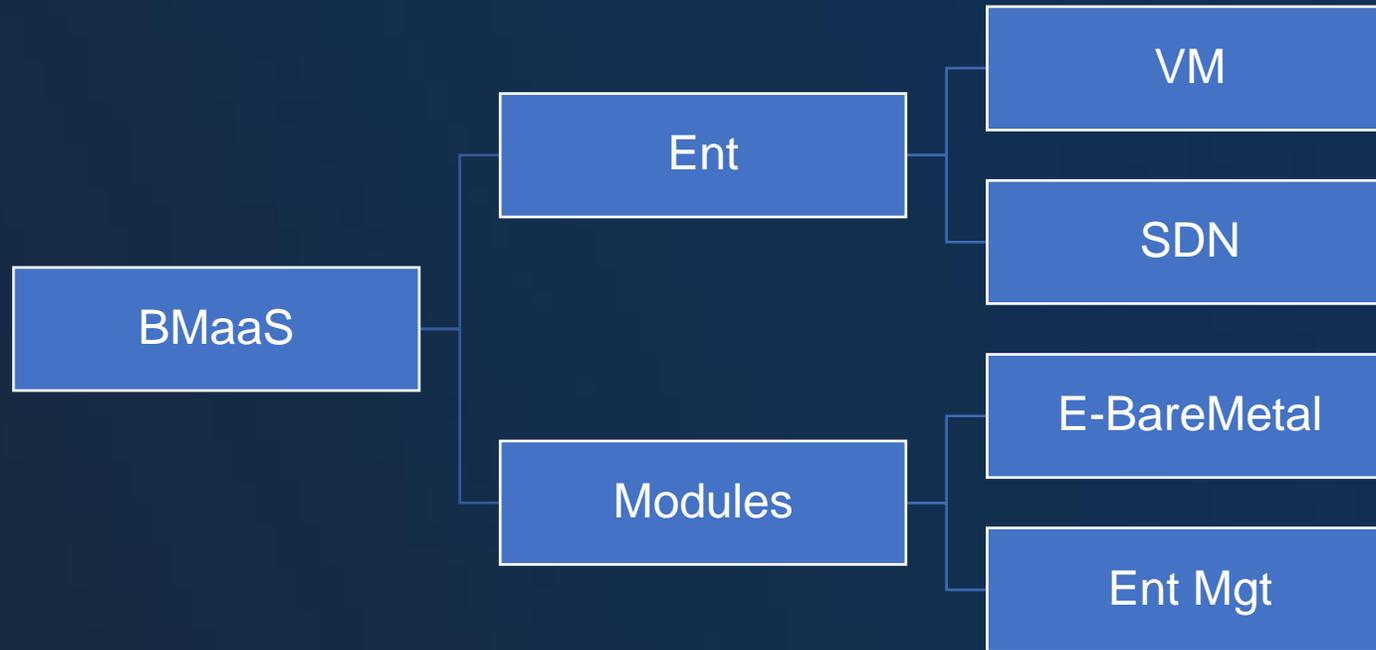


04 Machine Learning as a Service

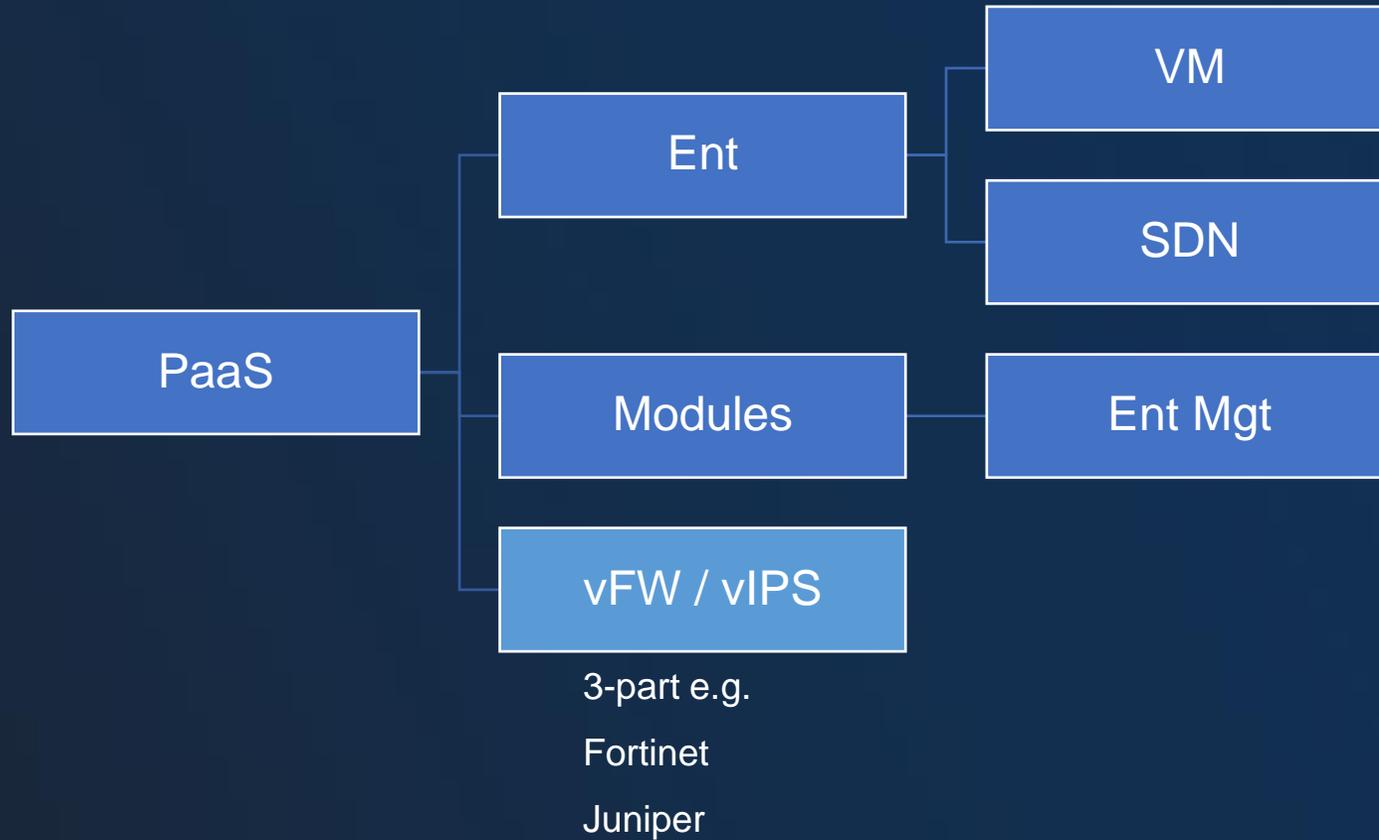


04 Bare Metal as a Service

Hybrid Bare Metal (with Alibaba Cloud BM ECS)

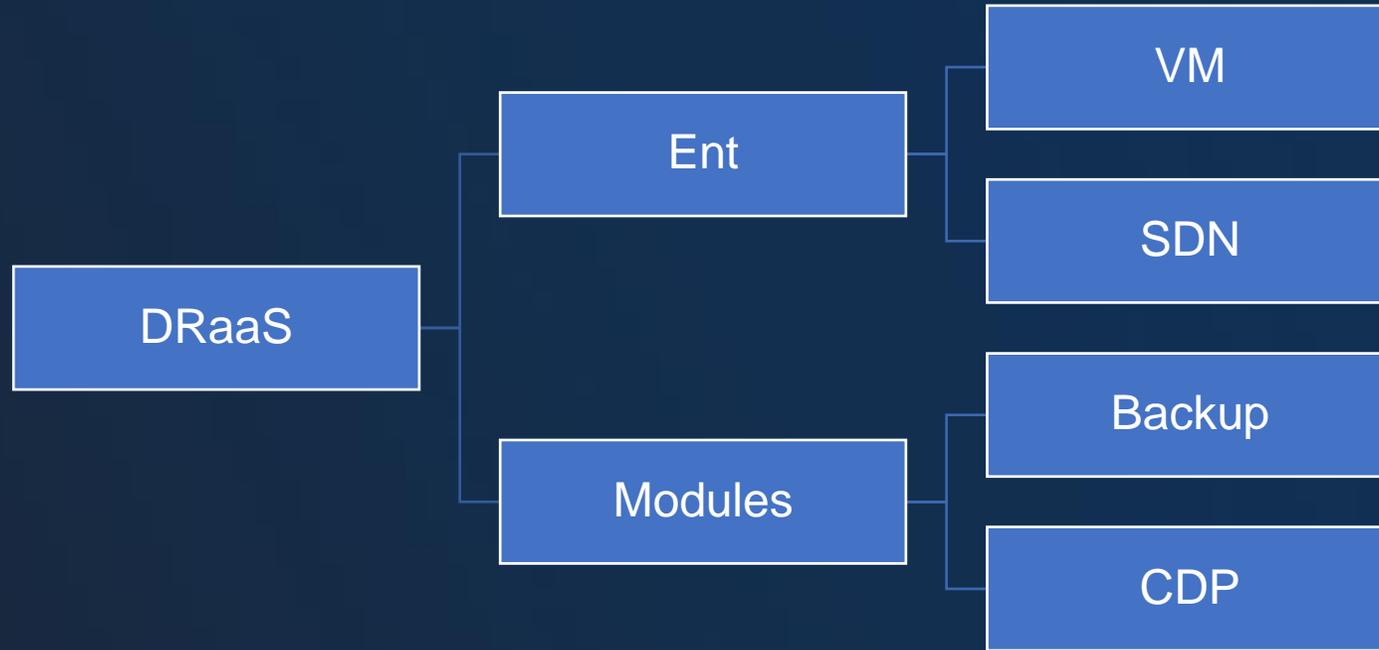


04 Security as a Service



04 Disaster Recovery as a Service

A-A DC



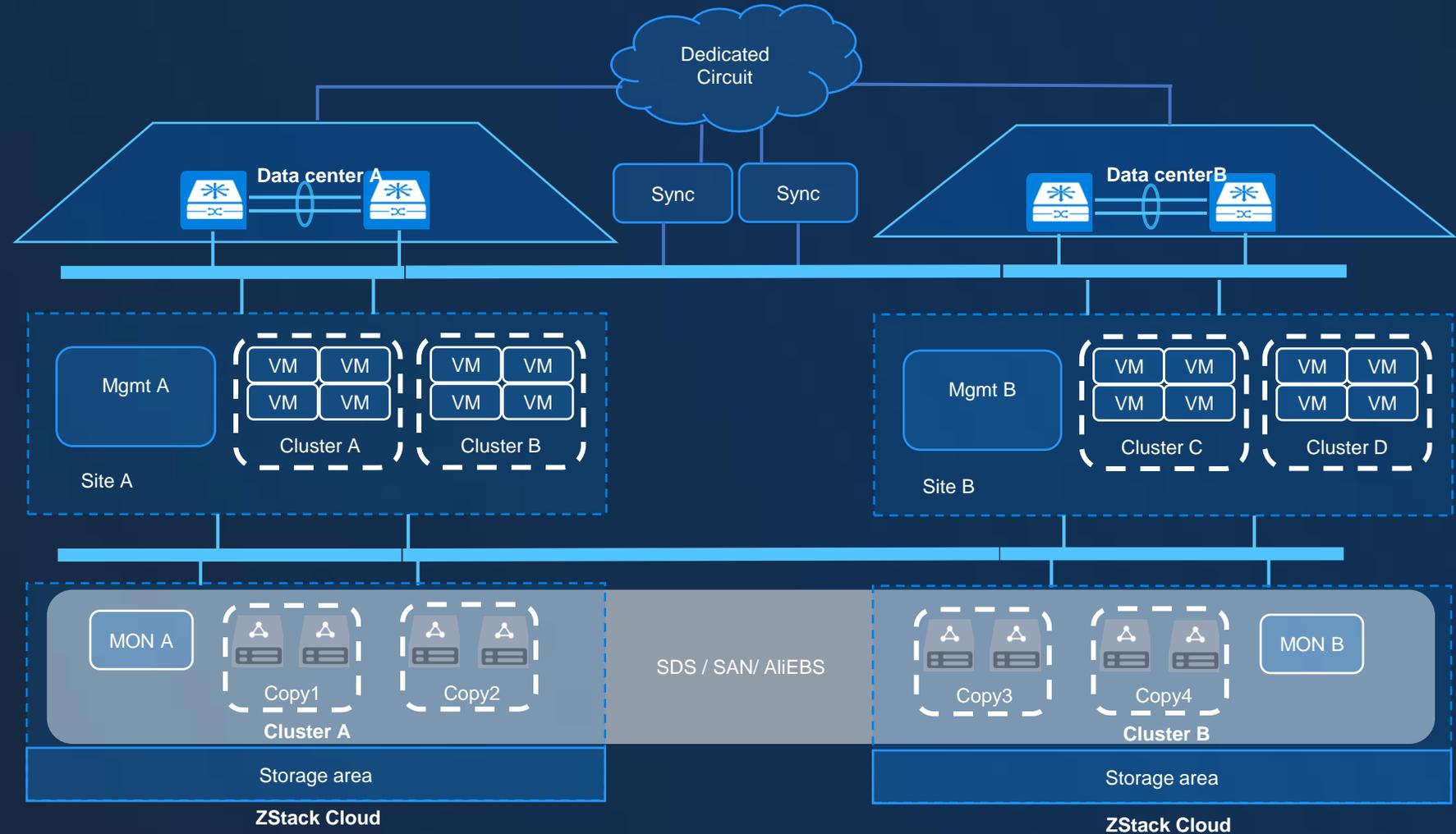
04 Alive-Alive Datacenter Solution

Solution:

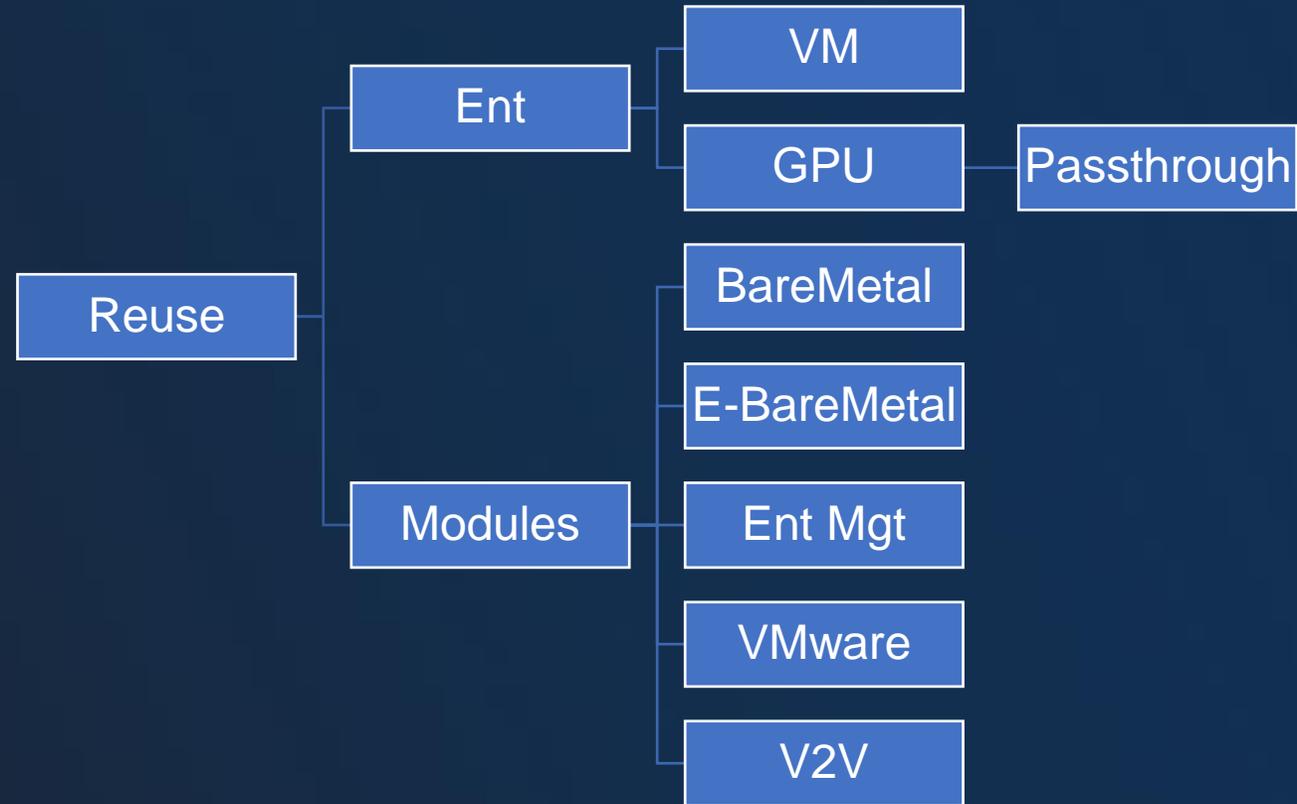
- Support for VM HA from one data center to another;
- Supports SAN, SDS and public cloud storage mounting solutions.

Advantages:

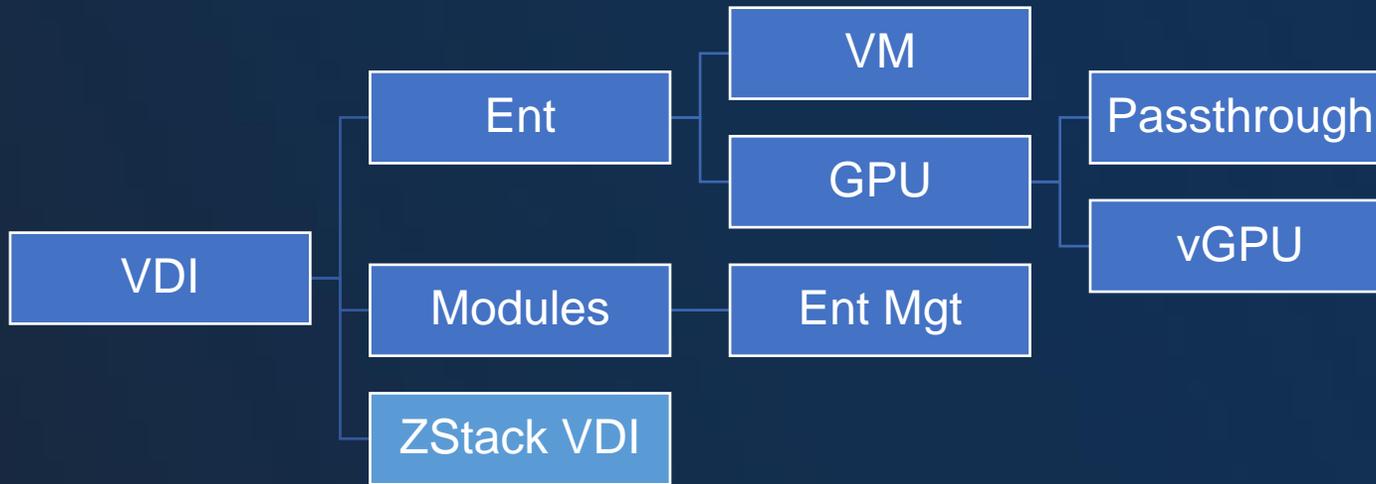
- Native cross-data center HA functionality;
- More flexible storage options;
- Non-hardware binding



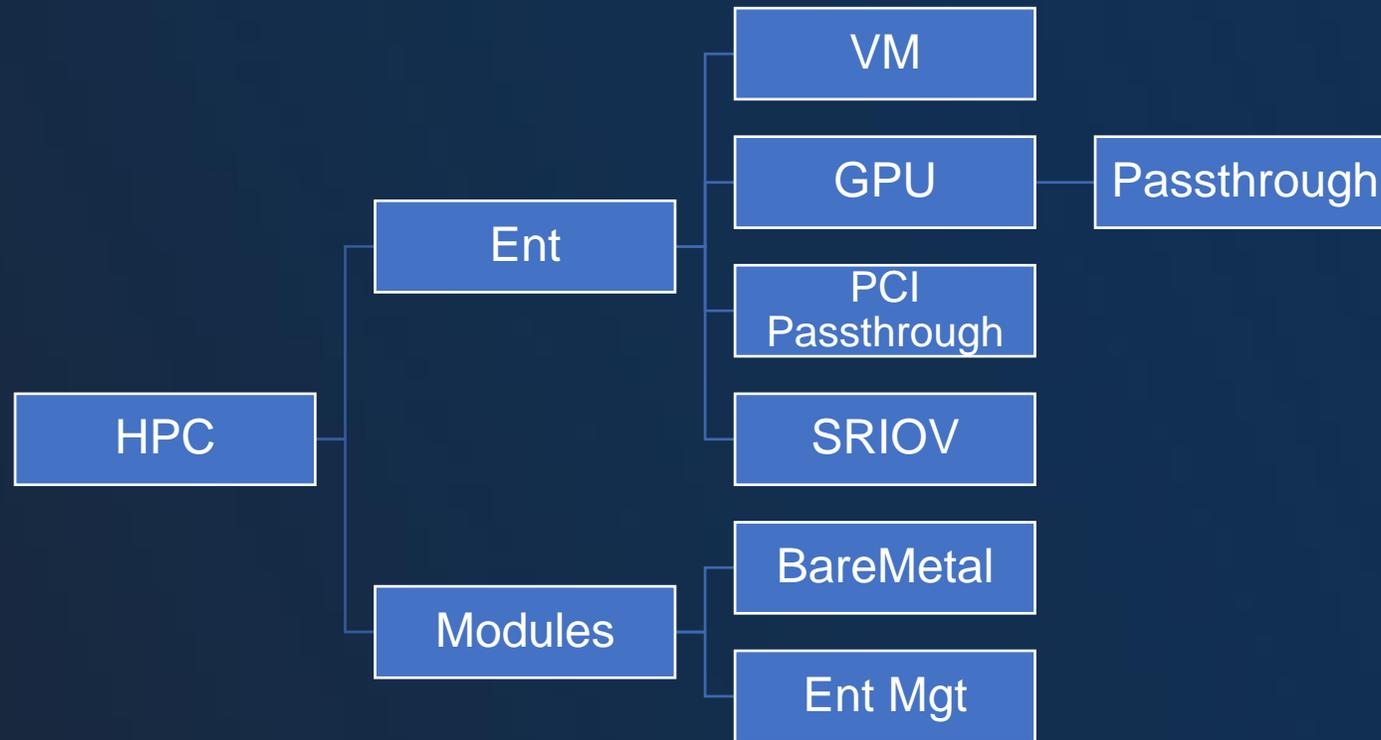
04 Facility Reuse



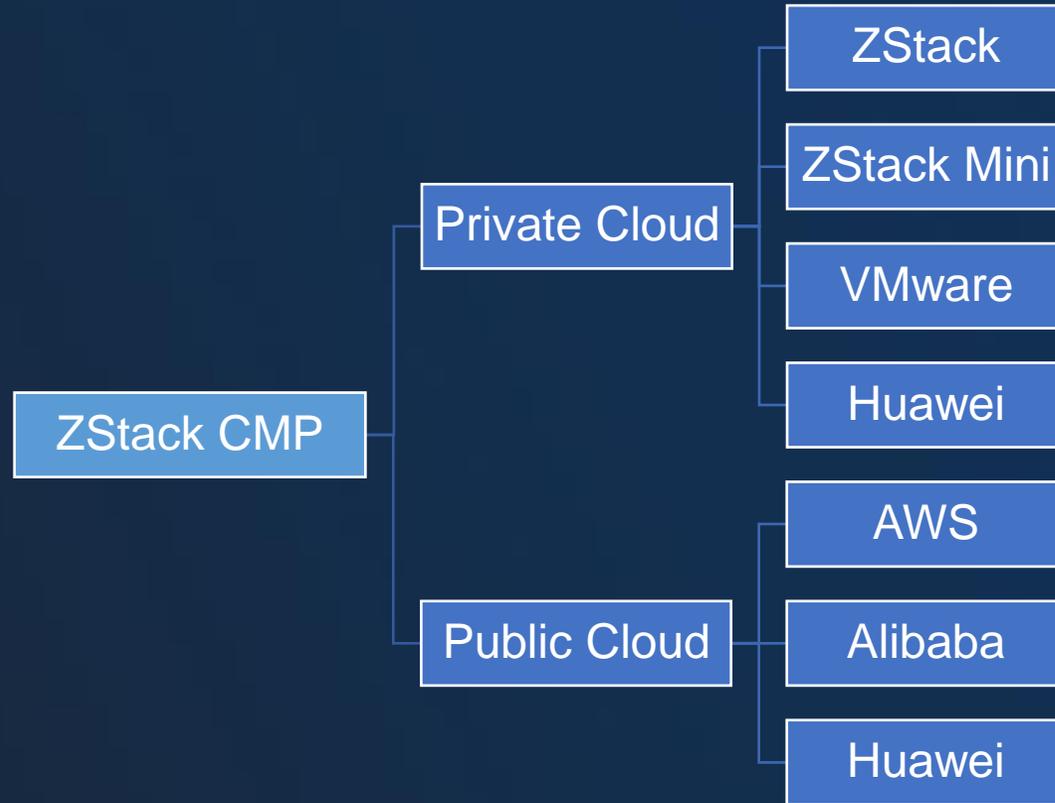
04 Desktop as a Service



04 High Performance Computing



04 Multi-Cloud Management



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Cloud Portal service

Web UI	Char UI	Command Lines	OS Interface	HTTP Restful API	Java SDK	Python SDK	3 rd Service
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Cloud Resource Service

VM Instance	L2 Network	EIP	Security Group	Block Storage	Snapshot	Billing
Volume	L3 Network	Port Forwarding	DHCP	File Storage	Clone	Graphic Monitoring
Nic	vRouter	Load Balance	QOS	Object Storage	Backup	Net Topology

Cloud Platform Management

VM Management (Live Migration, High Availability, Root Volume Resize More)						
Host Management	Organization Structure	Image Management	VPC Network	ESXi Network	Operations and Statistics	Billing
Cluster Management	Project Management	Offering Management	Flat Network	ESXi VM	ZWatch	Account Management
Zone Management	Enterprise Management	Cloud Resource Pool	Network Resource	vCenter	Resource Scheduling	Platform Management

Infrastructure Supporting

Virtualization KVM VMware	Bare-metal	Local Storage	Distributed Storage ZStack Ceph	Business Storage SAN NAS	Aliyun PanGu	SDN/NFV VLAN VxLAN NFV	Security Degree 3 in hierarchical protection
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Hybrid
(Aliyun)

ECS

Volume

PanGu

Security Group[

VPC

EIP

VPN

High Express

SD-WAN

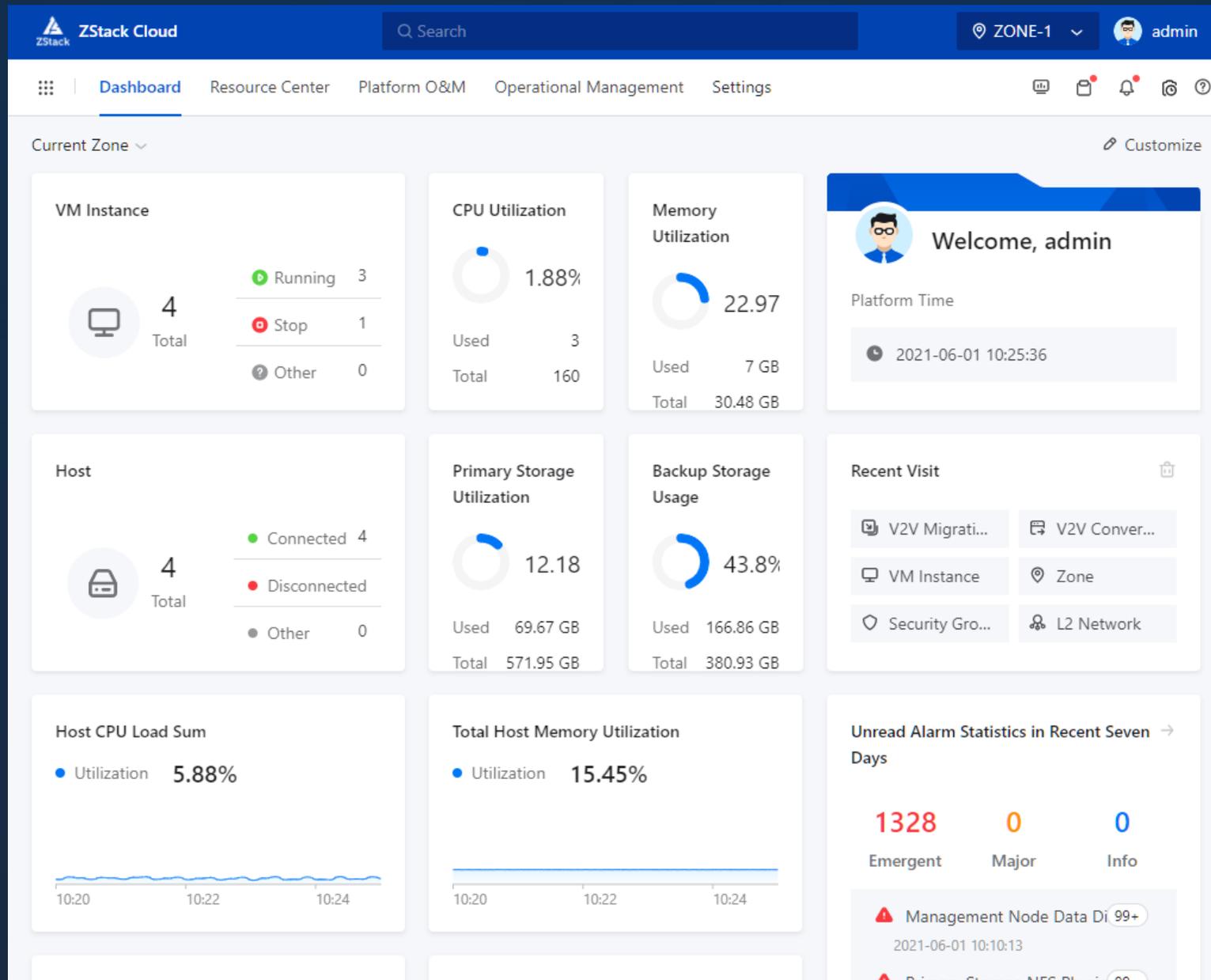
04 Products & Services

- Catalogue

The screenshot shows the ZStack Cloud dashboard interface. At the top, there is a navigation bar with the ZStack logo, a search bar, and the current zone 'ZONE-1' with a dropdown arrow and the user 'admin'. Below the navigation bar, there is a secondary menu with 'Dashboard' (highlighted with a red box), 'Resource Center', 'Platform O&M', 'Operational Management', and 'Settings'. A search bar for products and services is located below the secondary menu. The main content area is titled 'Resource Center' and displays a grid of products and services categorized into four columns: Resource Pool, Hardware, Network Resource, and Network Service. The 'Resource Pool' column includes items like VM Instance, Volume, Image, Instance Offering, Disk Offering, GPU Specification, Auto Scaling Group, Snapshot, Affinity Group, and Baremetal Management. The 'Hardware' column includes Zone, Cluster, Host, Primary Storage, Backup Storage, iSCSI Storage, FC Storage, CloudFormation, Resource Stack, and Stack Template. The 'Network Resource' column includes L2 Network, VXLAN Pool, Public Network, Flat Network, VPC Network, VPC vRouter, VPC vRouter HA Group, vRouter Image, vRouter Offering, and SDN Controller. The 'Network Service' column includes Security Group, VIP, EIP, Port Forwarding, Load Balancing, Firewall, IPsec Tunnel, OSPF Area, Netflow, and Port Mirroring. On the right side of the dashboard, there is a partial view of an 'Internal Monitor' widget showing 'No data'.

Resource Pool	Hardware	Network Resource	Network Service
VM Instance	Zone	L2 Network	Security Group
Volume	Cluster	VXLAN Pool	VIP
Image	Host	Public Network	EIP
Instance Offering	Primary Storage	Flat Network	Port Forwarding
Disk Offering	Backup Storage	VPC Network	Load Balancing
GPU Specification	iSCSI Storage	VPC vRouter	Firewall
Auto Scaling Group	FC Storage	VPC vRouter HA Group	IPsec Tunnel
Snapshot	CloudFormation	vRouter Image	OSPF Area
Affinity Group	Resource Stack	vRouter Offering	Netflow
Baremetal Management	Stack Template	SDN Controller	Port Mirroring

- Dashboard
- Zone
- The Number of VM Instances
- The Number of Hosts
- Customize
- Utilizations
- Recent Visits
- Unread Alarm Statistics in Recent 7 Days
- Top3 and Top10 Utilization



04 Resource Center

- Resource Pool
- Hardware
- Network Resource
- Network Service
- CloudFormation
- Baremetal Management
- Elastic Baremetal Management
- vCenter
- Hybrid Cloud Management

The screenshot shows the ZStack Cloud Resource Center interface. The top navigation bar includes the ZStack logo, a search bar, and the current zone (ZONE-1) and user (admin). The main navigation menu is on the left, and the 'Resource Center' tab is selected. A dropdown menu is open under 'Resource Pool', listing various resource types. The main content area displays a summary of resource status (Total: 4, Running: 3, Stopped: 1, Other: 0) and a table of VM instances with columns for Console, State, CPU, and Actions.

Instance	Console	State	CPU	Memory	Actions
VMs-2	[Console Icon]	Running	1	1	[More]
1	[Console Icon]	Running	1	1	[More]
test	[Console Icon]	Stop	1	1	[More]

04 Resource Pool

- VM Instance
- Volume
- Image
- Instance Offering
- Disk Offering
- GPU Specifications
- Auto Scaling Group
- Snapshot
- Affinity Group

The screenshot displays the ZStack Cloud Resource Center interface. The top navigation bar includes the ZStack logo, a search bar, and the current zone 'ZONE-1' with a user profile 'admin'. The main navigation menu contains 'Dashboard', 'Resource Center', 'Platform O&M', 'Operational Management', and 'Settings'. The left sidebar lists various resource categories: Virtual Resource (VM Instance, Volume), Compute Configuration (Image, Instance Offering, Disk Offering, GPU Specification), and Resource Service (Auto Scaling Group, Snapshot, Affinity Group). The 'VM Instance' page is active, showing a summary of 4 total instances: 3 Running, 1 Stopped, and 0 Other. A 'Recycle Bin' section shows 0 items. Below this, there are tabs for 'Available' and 'Recycle Bin', and a toolbar with '+ Create VM Instance', 'Start', 'Stop', 'Bulk Action', and 'Search' buttons. A table lists the instances:

<input type="checkbox"/>	Name	Console	State	CPU	M	Actions
<input type="checkbox"/>	VMs-1		Running	1	1	
<input type="checkbox"/>	VMs-2		Running	1	1	
<input type="checkbox"/>	1		Running	1	1	
<input type="checkbox"/>	test		Stop	1	1	

At the bottom, it shows 'Item 1-4. Total: 4' and a pagination control for '10 / page'.

04 Hardware

- Zone
- Cluster
- Host
- Primary Storage
- Backup Storage
- iSCSI Storage
- FC Storage

The screenshot shows the ZStack Cloud Resource Center interface. The top navigation bar includes the ZStack logo, a search bar, and the current zone 'ZONE-1' with a user profile 'admin'. The main navigation menu includes Dashboard, Resource Center (selected), Platform O&M, Operational Management, and Settings. The left sidebar shows the Hardware section with sub-items: Computing Facility (Zone, Cluster, Host) and Storage Facility (Primary Storage, Backup Storage, iSCSI Storage, FC Storage). The main content area displays the 'Zone' page with a description: 'A largest collection of resources in the Cloud, including clusters, L2 networks, and primary storages. Learn more.' Below this is a control bar with buttons for '+ Create Zone', 'Enable', 'Disable', and 'Delete', along with a search bar. A table lists the zones with columns for Name, State, Creation Time, and Actions. The table contains one entry: 'ZONE-1' with state 'Enabled' and creation time '2021-05-12 10:38:32'. At the bottom, it shows 'Item 1. Total: 1' and a pagination control for '10 / page'.

<input type="checkbox"/>	Name	State	Creation Time	Actions
<input type="checkbox"/>	ZONE-1	Enabled	2021-05-12 10:38:32	...

04 Network Resource

- L2 Network
- VXLAN Pool
- Public Network
- Flat Network
- VPC Network
- VPC vRouter
- VPC vRouter HA Group
- vRouter Image
- vRouter Offering
- SDN Controller
- Management Network
- Flow Network

The screenshot shows the ZStack Cloud interface. The top navigation bar includes the ZStack logo, a search bar, and the user 'admin' in 'ZONE-1'. The main navigation menu on the left lists various network resources, with 'L2 Network' selected. The main content area displays the 'L2 Network' page, which includes a description: 'An L2 network is a layer 2 broadcast domain used for layer 2 isolation. Generally, L2 networks are identified by names of devices on the physical network. Learn more.' Below the description is a table of L2 networks with columns for Name, NIC, Type, and Actions. The table contains four entries: L2_VLAN, L2_VLAN_Network, L2VIANNetwork, and L2NoVlanNetwork. At the bottom of the table, it shows 'Item 1-4. Total: 4' and a pagination control for '10 / page'.

<input type="checkbox"/>	Name ↕	NIC ↕	Type ▼	Actions
<input type="checkbox"/>	L2_VLAN	eth0	L2VlanNetwork	...
<input type="checkbox"/>	L2_VLAN_Network	eth0	L2VlanNetwork	...
<input type="checkbox"/>	L2VIANNetwork	eth0	L2VlanNetwork	...
<input type="checkbox"/>	L2NoVlanNetwork	eth0	L2NoVlanNetwork	...

04 Network Service

- Security Group
- VIP
- EIP
- Port Forwarding
- Load Balancing
- Firewall
- IPsec Tunnel
- OSPF Area
- Netflow
- Port Mirroring
- Route Table

The screenshot displays the ZStack Cloud management console. At the top, the header includes the ZStack logo, a search bar, the current zone 'ZONE-1', and the user 'admin'. The navigation menu contains 'Dashboard', 'Resource Center', 'Platform O&M', 'Operational Management', and 'Settings'. The left sidebar lists various network services, with 'Security Group' selected under the 'Basic Network Service' category. The main content area is titled 'Security Group' and includes a description: 'A security group provides security control services for VM instances on the L3 network layer. It filters the ingress or egress TCP, UDP, and ICMP packets of specified VM instances in specified networks based on the specified security rules. Learn more.' Below the description is a '+ Create Security Group' button and a search bar. A table lists existing security groups with columns for Name, State, Creation Time, and Actions. One group named 'Security_Group' is shown with a state of 'Enabled' and a creation time of '2021-06-01 10:22:30'. At the bottom of the table, it indicates 'Item 1. Total: 1' and a pagination control for '10 / page'.

Name	State	Creation Time	Actions
Security_Group	Enabled	2021-06-01 10:22:30	...

04 CloudFormation

- Resource Stack
- Stack Template
- Sample Template
- Designer

The screenshot displays the ZStack Cloud interface. At the top, there is a navigation bar with the ZStack logo, a search bar, and a user profile for 'admin' in 'ZONE-1'. Below this is a secondary navigation bar with links for Dashboard, Resource Center (selected), Platform O&M, Operational Management, and Settings. On the left side, there is a sidebar menu with options: CloudFormation (selected), Resource Stack, Stack Template, Sample Template, and Designer. The main content area is titled 'Resource Stack' and includes a descriptive paragraph: 'A resource stack is a stack of resources that are created and configured by using a stack template. The resources in the stack have dependencies with each other. You can manage resources in the stack by managing the resource stack. Learn more.' Below the text are several action buttons: a refresh icon, '+ Create Resource Stack' (highlighted in blue), 'Delete', and 'Search'. A table header is visible with columns for Name, Status, Owner, Creation, and Actions. The table area is currently empty, displaying a 'No Data' message with a folder icon.

04 Baremetal Management

- Baremetal Cluster
- Deployment Server
- Baremetal Chassis
- Preconfigured Template
- Baremetal Instance

ZStack Cloud

Search

ZONE-1 admin

Dashboard Resource Center Platform O&M Operational Management Settings

Baremetal Management

Baremetal Cluster

Deployment Server

Baremetal Chassis

Preconfigured Template

Baremetal Instance

Baremetal Cluster

Provides independent cluster managements for baremetal chassis. [Learn more.](#)

+ Create Baremetal Cluster

<input type="checkbox"/>	Name	Virtualization Tech...	Number of Baremetal...	St	Actions
<input type="checkbox"/>	Baremetal_Cluster	baremetal	0	ON	...

Item 1. Total: 1

< 1 > 10 / page

04 Elastic Baremetal Management

- Quick Start Wizard
- Provision Network
- Elastic Baremetal Cluster
- Gateway Node
- Baremetal Node
- Elastic Baremetal Instance

The screenshot shows the ZStack Cloud management console. The top navigation bar includes the ZStack logo, a search bar, the current zone (ZONE-1), and the user profile (admin). The main navigation menu contains Dashboard, Resource Center (selected), Platform O&M, Operational Management, and Settings. The left sidebar lists various resource categories: Elastic Baremetal Management (selected), Guide Center, Network Resource, Hardware, and Virtual Resource. Under Elastic Baremetal Management, the options are Quick Start Wizard, Provision Network, Elastic Baremetal Cluster, Gateway Node, and Baremetal Node. Under Virtual Resource, the option is Elastic Baremetal Instance.

Elastic Baremetal Instance

Comparable to instances virtualized through physical servers in performance, leverages resource scalability in the Cloud to achieve flexible applications and on-demand usages. [Learn more.](#)

Total: 0, Running: 0, Stopped: 0, Other: 0, Recycle Bin: 0

Available | Recycle Bin

+ Create Elastic Baremetal Instance | Start | Stop | Bulk Action | Search

Name	Tag	CPU	Memory	Actions
No Data				

04 vCenter

- Basic Resource
- VM Instance
- Network
- Volume
- Image
- Event Message

ZStack Cloud | Search | ZONE-1 | admin

Dashboard | **Resource Center** | Platform O&M | Operational Management | Settings

vCenter

- Basic Resource**
- VM Instance
- Network
- Volume
- Image
- Event Message

Basic Resource

The Cloud lets you manage vCenter and centrally manage virtual resources of the managed vCenter. [Learn more.](#)

+ Add vCenter | | | |

<input type="checkbox"/>	Name ↕	Domain	Username	Actions
<input type="checkbox"/>	172.20.57.1	172.20.57.1	administrator@vsphere.local	...

Item 1. Total: 1 | < 1 > | 10 / page ▾

04 Hybrid Cloud Management

- ECS Instance
- Disk
- Image
- Security Group
- VPC
- EIP
- VPN Gateway
- VPN Customer Gateway
- VPN Connection
- Router Interface
- Virtual Border Router

The screenshot shows the ZStack Cloud console interface. The top navigation bar includes the ZStack logo, a search bar, and the user profile 'admin' in 'ZONE-1'. The main navigation menu includes Dashboard, Resource Center (selected), Platform O&M, Operational Management, and Settings. The left sidebar is titled 'Hybrid Cloud Management' and contains a 'Sync Data' button and a list of products: ECS Instance (selected), Disk, Image, Security Group, VPC, EIP, VPN Gateway, VPN Customer Gateway, VPN Connection, Router Interface, Virtual Border Router, File System, Permission Group, Region, Zone, AccessKey Management, and Hybrid Cloud Settings. The main content area is titled 'ECS Instance' and includes a description: 'An elastic compute server (ECS) instance is a VM instance created on Alibaba Cloud.' Below this is a toolbar with '+ Create ECS Instance', 'Start', 'Stop', 'Bulk Action', and 'Search' buttons. A table with columns 'Name', 'ECS Instance ID', 'CPU', and 'Actions' is shown, but it contains no data, indicated by a 'No Data' message and a folder icon.

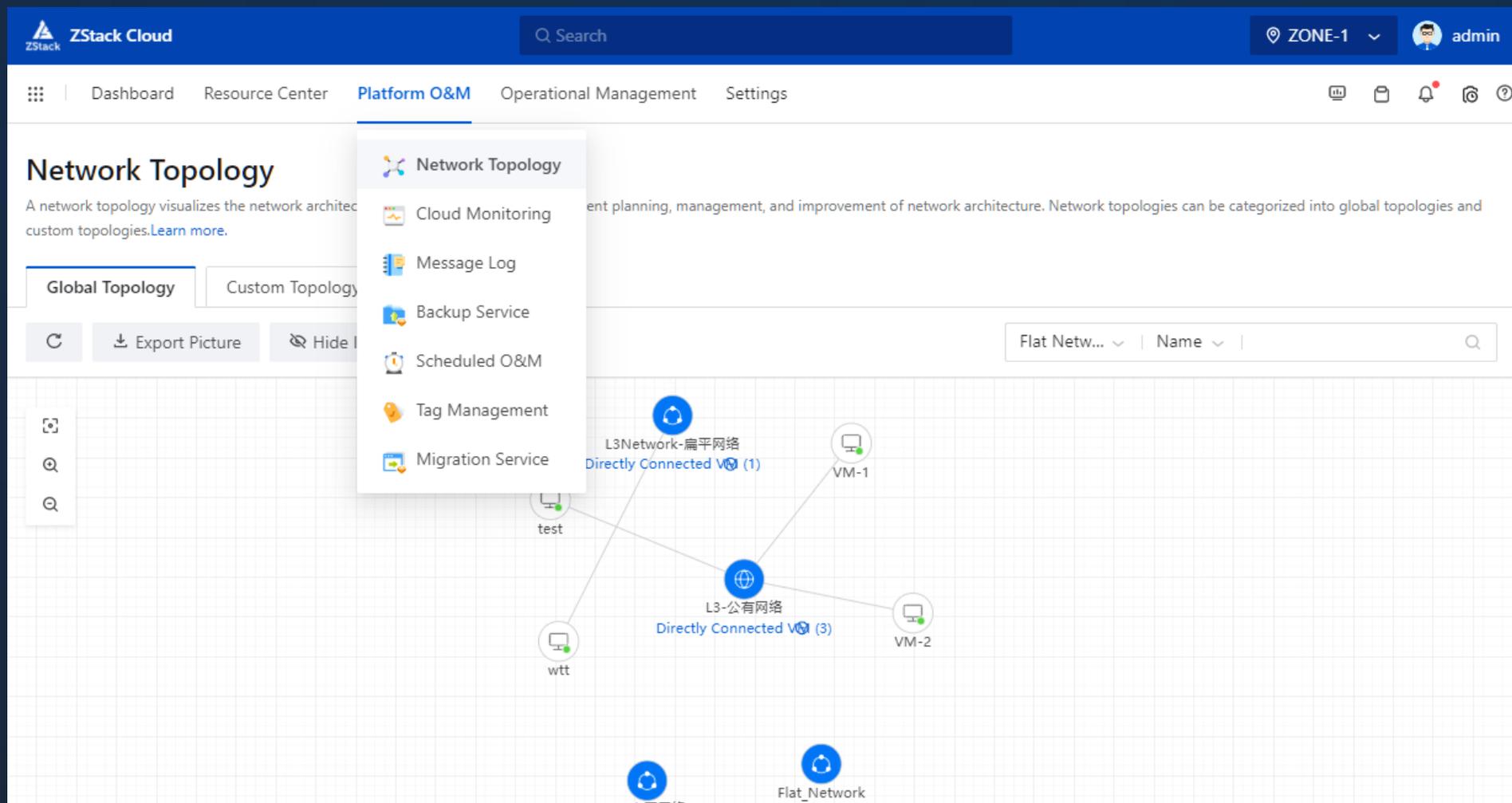
04 Hybrid Cloud Management

- File System
- Permission Group
- Region
- Zone
- AccessKey Management
- Hybrid Cloud Settings

The screenshot shows the ZStack Cloud console interface. The top navigation bar includes the ZStack logo, a search bar, and the current zone 'ZONE-1' with a user profile 'admin'. The main navigation menu includes Dashboard, Resource Center (selected), Platform O&M, Operational Management, and Settings. The left sidebar is titled 'Hybrid Cloud Management' and contains a 'Sync Data' button and a list of products: ECS Instance (selected), Disk, Image, Security Group, VPC, EIP, VPN Gateway, VPN Customer Gateway, VPN Connection, Router Interface, Virtual Border Router, File System, Permission Group, and Hybrid Cloud Settings. The main content area is titled 'ECS Instance' and includes a description: 'An elastic compute server (ECS) instance is a VM instance created on Alibaba Cloud.' Below this is a '+ Create ECS Instance' button and a table with columns for Name, ECS Instance ID, CPU, and Actions. The table currently shows 'No Data'.

04 Platform O&M

- Network Topology
- Cloud Monitoring
- Message Log
- Backup Service
- Scheduled O&M
- Tag Management
- Migration Service



04 Network Topology

The screenshot shows the ZStack Cloud management interface. At the top, there's a navigation bar with 'ZStack Cloud', a search bar, and 'ZONE-1' with a dropdown arrow. Below that, a secondary navigation bar includes 'Dashboard', 'Resource Center', 'Platform O&M' (highlighted), 'Operational Management', and 'Settings'. The main content area is titled 'Network Topology' and includes a brief description: 'A network topology visualizes the network architecture of the Cloud. It allows for efficient planning, management, and improvement of network architecture. Network topologies can be categorized into global topologies and custom topologies. [Learn more.](#)'

Below the description are two tabs: 'Global Topology' (selected) and 'Custom Topology'. There are also three buttons: 'Refresh', 'Export Picture', and 'Hide Instance'. A search bar on the right contains 'Flat Netw...', 'Name', and a search icon.

The network diagram is displayed on a grid background. It features several nodes and connections:

- A central blue globe icon labeled 'L3-公有网络' with 'Directly Connected VM (3)' below it.
- A blue refresh icon labeled 'L3Network-扁平网络' with 'Directly Connected VM (1)' below it.
- VM nodes: 'test', 'wtt', 'VM-1', and 'VM-2' (represented by computer icons).
- Other network nodes: 'L3-扁平网络' and 'Flat_Network' (represented by refresh icons) at the bottom.

Connections are shown as lines between the central 'L3-公有网络' node and the 'test', 'wtt', and 'VM-2' nodes. There are also connections between 'L3Network-扁平网络' and 'test', and between 'L3Network-扁平网络' and 'VM-1'.

- Global Topology
- Custom Topology

04 Cloud Monitoring

- Performance Analysis
- Capacity Management
- Alarm
- One-Click Alarm
- Alarm Template
- Resource Group
- Message Template
- Endpoint

The screenshot shows the ZStack Cloud interface for Performance Analysis. The top navigation bar includes 'ZStack Cloud', a search bar, 'ZONE-1', and a user profile 'admin'. The main navigation menu has 'Dashboard', 'Resource Center', 'Platform O&M', 'Operational Management', and 'Settings'. The left sidebar lists various monitoring and alarm services. The main content area is titled 'Performance Analysis' and includes a description, a 'Resource Filter' section, and a table of monitored resources.

Performance Analysis
Performance analysis displays the performance metrics of core resources under monitoring in the Cloud. Cloud resources can be externally or internally monitored. You can use either method to monitor the performance of resources in the Cloud and improve O&M efficiency. [Learn more.](#)

Resource Filter: VM Instance | External M... | 15min | [Advanced Filter](#)

[Refresh](#) | [Stop VM Instance](#) | [Export CSV](#)

<input type="checkbox"/>	Name	CPU Utilization A...	Memory Utilization	Disk Re	Actions
<input type="checkbox"/>	1	1.85 %	1.35 %	0 B/s	...
<input type="checkbox"/>	VMs-2	0.96 %	18.1 %	0 B/s	...
<input type="checkbox"/>	VMs-1	0.94 %	18.1 %	0 B/s	...

Item 1-3. Total: 3 | < 1 > | 10 / page

- Alarm Message
- Operation Log
- Audit

ZStack Cloud | Search | ZONE-1 | admin

Dashboard | Resource Center | **Platform O&M** | Operational Management | Settings

Message Log

Message Center

- Alarm Message**

Event Center

- Operation Log
- Audit

Alarm Message

An alarm message is a message sent when an alarm is triggered. [Learn more.](#)

Could Platform

Mark All as Read |
 Restore Alarm |
 Resource Type: ... |
 7days |
 Search

<input type="checkbox"/>	Message Content ▼	Trigger Action	Emergency Level ▼	Actions
<input type="checkbox"/>	• Management Node Data...	Management Node Data Direc...	Emergent	...
<input type="checkbox"/>	• Primary Storage NFS Phy...	Primary Storage Physical Capa...	Emergent	...
<input type="checkbox"/>	• Primary Storage SAN Ph...	Primary Storage Physical Capa...	Emergent	...
<input type="checkbox"/>	• Primary Storage Capacit...	Primary Storage Capacity Avail...	Emergent	...
<input type="checkbox"/>	• Primary Storage Capacit...	Primary Storage Capacity Avail...	Emergent	...
<input type="checkbox"/>	• Default License Expiratio...	Default License Expiration Tim...	Emergent	...
<input type="checkbox"/>	• Default License Expiratio...	Default License Expiration Tim...	Emergent	...
<input type="checkbox"/>	• Default License Expiratio...	Default License Expiration Tim...	Emergent	...
<input type="checkbox"/>	• Default License Expiratio...	Default License Expiration Tim...	Emergent	...
<input type="checkbox"/>	• Default License Expiratio...	Default License Expiration Tim...	Emergent	...

Item 1-10. Total: 14 | < 1 2 > 10 / page

04 Backup Service (Disaster Recovery)

- Backup Job
- Local Backup Data
- Local Backup Storage
- Remote Backup Server

The screenshot displays the ZStack Cloud management console for the Backup Service. The interface includes a navigation menu on the left with options like 'Backup Job', 'Local Backup Data', 'Local Backup Server', and 'Remote Backup Server'. The main content area is titled 'Backup Job' and provides an overview of the backup configuration. It shows a table for 'Job Overview' with columns for 'Total Jobs', 'VM Instance', 'Volume', and 'Database'. The 'State' section indicates the backup is 'Enabled'. The 'Status' section shows 'Ready' and 'Backing Up' counts. Below this, there are filters for 'By M...', '2021', and '6mon...'. A legend identifies job statuses: Executed (blue), Succeeded (green), Partially Succeeded (orange), and Failed (red). A line chart at the bottom tracks the number of jobs over time, showing periodic spikes to 1 job.

Category	Count
Total Jobs	1
VM Instance	1
Volume	0
Database	0

State	Count
Enabled	1
Disable	0

Status	Count
Ready	1
Backing Up	0

Date	Count
06-01	0
06-03	0
06-05	1
06-07	0
06-09	0
06-11	0
06-13	1
06-15	0
06-17	0
06-19	1
06-21	0
06-23	0
06-25	0
06-27	1
06-29	0

04 Scheduled O&M

- Scheduled Job
- Scheduler

The screenshot displays the ZStack Cloud Platform O&M interface. The top navigation bar includes the ZStack logo, a search bar, and the user profile 'admin' in 'ZONE-1'. The main navigation menu shows 'Dashboard', 'Resource Center', 'Platform O&M' (selected), 'Operational Management', and 'Settings'. On the left sidebar, 'Scheduled O&M' is expanded to show 'Scheduled Job' (selected) and 'Scheduler'. The main content area is titled 'Scheduled Job' and includes a description: 'A scheduled job defines that a specific action be implemented at a specified time based on a scheduler. [Learn more.](#)' Below this is a toolbar with a refresh icon, a '+ Create Scheduled Job' button, 'Enable' and 'Disable' buttons, a 'Bulk Action' dropdown, and a search bar. A table lists the scheduled jobs with columns for Name, Job Type, Name, State, and Actions. One job is listed: 'Scheduled_Job' with Job Type 'Start VM' and Name 'VMs-1', in an 'Enabled' state. At the bottom, it shows 'Item 1. Total: 1' and a pagination control for '10 / page'.

<input type="checkbox"/>	Name ↕	Job Type ▼	Name	State ▼	Actions
<input type="checkbox"/>	Scheduled_Job	Start VM	VMs-1	Enabled	...

04 Migration Service

- V2V Migration
- V2V Conversion Host

ZStack Cloud

Search

ZONE-1 admin

Dashboard Resource Center Platform O&M Operational Management Settings

Migration Service

V2V Migration

V2V Conversion Host

V2V Migration

V2V migration allows you to migrate VM instances from the VMware or KVM platform to the current Cloud. [Learn more.](#)

+ Create V2V Job Bulk Action Search

<input type="checkbox"/>	Name	Source VM	Destination VM	Source Platform	Job Status	Actions
<input type="checkbox"/>	V2V_Job	wtt	wtt	VMware	Succeeded	...

Item 1. Total: 1

< 1 > 10 / page

04 Operational Management

- Enterprise Management
- Billing Management
- Access Control
- Application Center

The screenshot displays the ZStack Cloud Operational Management interface. The top navigation bar includes the ZStack logo, a search bar, and the current zone 'ZONE-1' with a user profile 'admin'. The main navigation menu is open, highlighting 'Operational Management' and showing sub-menus: Enterprise Management, Billing Management, Access Control, and Application Center. The left sidebar lists various management options under 'Enterprise Management', with 'Organization Structure' selected. The main content area shows the 'Organization Structure' for the 'ZStack' department, including a search bar, a tree view with 'ZStack(3Person)' and 'Default(0Person)', and a detailed view for the 'ZStack' department. The detailed view shows 'No description', 'Department Admin: None', 'Number of Immediate Department Members: 0', 'UUID: e337ce4949...', 'Organization Structure Path: ZStack', 'Last Update Time: 2021-04-30 14:...', and 'Creation Time: 2021-04-30 14:...'.

Name	User Name	Phone Number	Actions
Immediate Member (0)			

04 Enterprise Management

- Organization Structure
- User
- User Group
- Role
- 3rd-Party Authorization
- Project
- Process Management
- My Service Tickets

The screenshot displays the ZStack Cloud Operational Management interface. The top navigation bar includes the ZStack logo, a search bar, and the user 'admin' in 'ZONE-1'. The main navigation menu shows 'Operational Management' as the active section. The left sidebar lists various management options under 'Enterprise Management', with 'Organization Structure' selected. The main content area shows the 'Organization Structure' for the 'ZStack' department, which has 3 members. The interface includes a search bar for departments, a list of departments (ZStack(3Person) and Default(0Person)), and a detailed view of the 'ZStack' department with fields for description, admin, member counts, UUID, and creation time. Below this, there are tabs for 'Immediate Member (0)', 'Project (1)', and 'Audit', along with buttons for '+ Add User', 'Bulk Action', and 'Search'. A table header is visible with columns for Name, User Name, Phone Number, and Actions.

- Bills
- Pricing List

ZStack Cloud | Search | ZONE-1 | admin

Dashboard | Resource Center | Platform O&M | **Operational Management** | Settings

Billing Management

- Bills**
- Pricing List

Bills

A bill is the expense of resources totaled at a specified time period. Billing is accurate to the second. Bills can be categorized into project bills, department bills, and account bills. [Learn more.](#)

Project | Department | Account

Refresh | 1 week | Export CSV

Billing Project	Total	CPU/Memory	Root Volume	Data Volume
Project	¥ 0.00	¥ 0.00	¥ 0.00	¥ 0.00

Item 1. Total: 1 | 10 / page

04 Access Control

- Console Proxy
- AccessKey Management
- IP Allowlist/Blocklist

The screenshot displays the ZStack Cloud management console. The top navigation bar includes the ZStack logo, a search bar, and the current zone 'ZONE-1' with a user profile 'admin'. The main navigation menu shows 'Operational Management' as the active section. On the left sidebar, 'Access Control' is expanded to show 'Console Proxy', 'AccessKey Management', and 'IP Allowlist/Blocklist'. The main content area is titled 'Console Proxy' and includes a description: 'Console proxy allows you to log in to a VM instance by using the IP address of a proxy. [Learn more.](#)' Below this, a table lists the proxy configuration for IP '10.0.9.39'. The table includes buttons for 'Reconnect' and 'Set Console Proxy Address', and a detailed status section.

IP Address	Actions
10.0.9.39	Reconnect Set Console Proxy Address

State :	● Enabled	Ready :	● Connected
Console Proxy Address :	None	Type :	ManagementServerConsoleProxy
Port :	4900	Creation Time :	2021-04-29 13:15:14

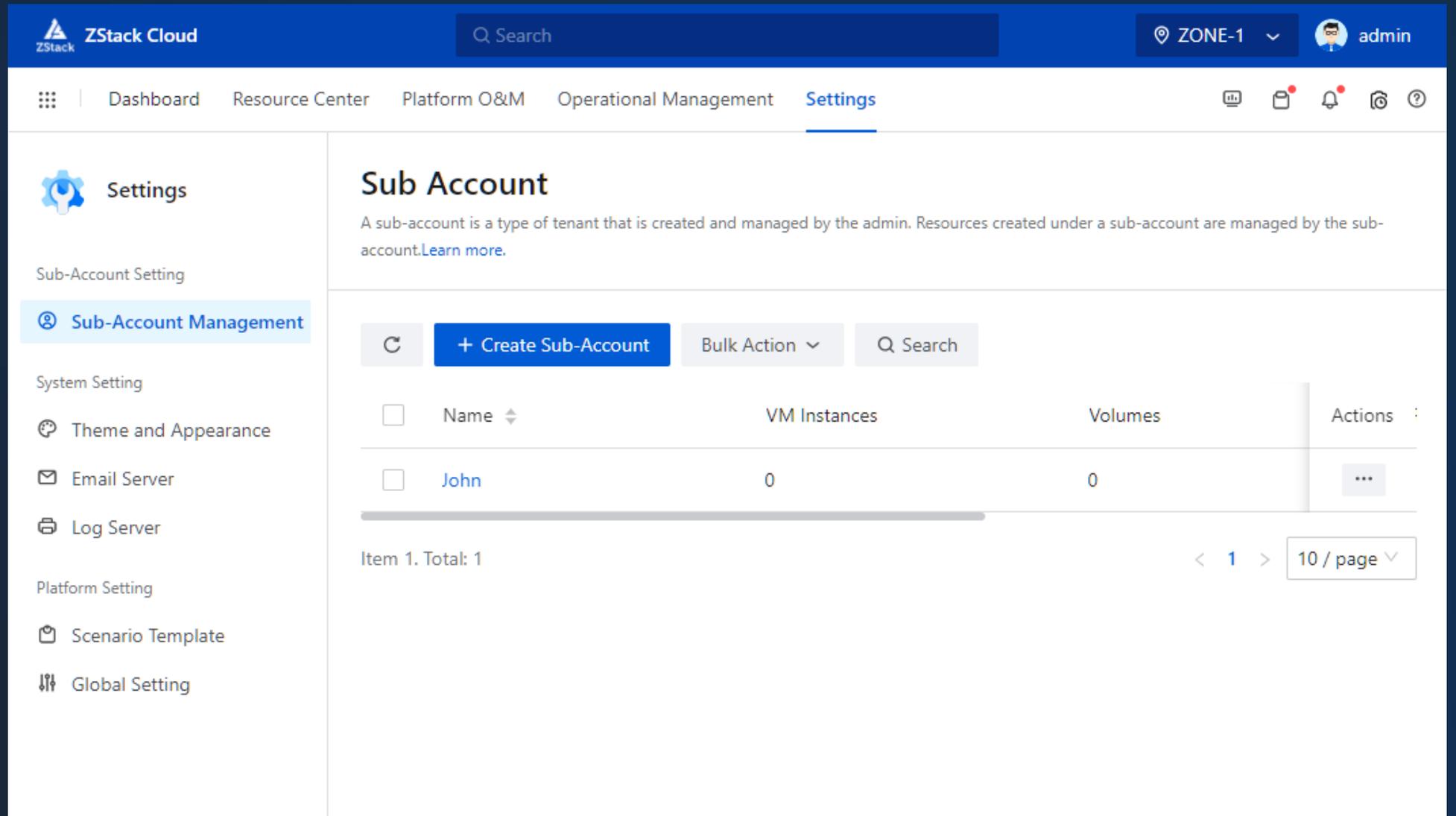
04 Settings

- Sub-Account Management
- Theme and Appearance
- Email Server
- Log Server
- Scenario Template
- Global Settings

The screenshot shows the ZStack Cloud interface. At the top, there is a navigation bar with the ZStack logo, a search bar, and the user's name 'admin' in 'ZONE-1'. Below this is a secondary navigation bar with links to Dashboard, Resource Center, Platform O&M, Operational Management, and Settings (which is highlighted). On the left side, there is a settings menu with categories: Sub-Account Setting (with 'Sub-Account Management' selected), System Setting (with Theme and Appearance, Email Server, and Log Server), Platform Setting (with Scenario Template), and Global Setting. The main content area is titled 'Sub Account' and includes a description: 'A sub-account is a type of tenant that is created and managed by the admin. Resources created under a sub-account are managed by the sub-account. Learn more.' Below the description is a toolbar with a refresh icon, a '+ Create Sub-Account' button, a 'Bulk Action' dropdown, and a search bar. A table header is visible with columns: Name, VM Instances, Volumes, Pricing List, and Actions. The table content is currently empty, displaying a 'No Data' message with a folder icon.

04 Sub-Account Management

- Sub-Account



The screenshot shows the ZStack Cloud interface for Sub-Account Management. The top navigation bar includes the ZStack logo, a search bar, the current zone (ZONE-1), and the user profile (admin). The main navigation menu includes Dashboard, Resource Center, Platform O&M, Operational Management, and Settings. The left sidebar lists various settings categories: Sub-Account Setting (with Sub-Account Management selected), System Setting, Theme and Appearance, Email Server, Log Server, Platform Setting, Scenario Template, and Global Setting.

Sub Account

A sub-account is a type of tenant that is created and managed by the admin. Resources created under a sub-account are managed by the sub-account. [Learn more.](#)

Sub-Account Setting

- Sub-Account Management

System Setting

- Theme and Appearance
- Email Server
- Log Server

Platform Setting

- Scenario Template
- Global Setting

Table:

<input type="checkbox"/>	Name ↕	VM Instances	Volumes	Actions
<input type="checkbox"/>	John	0	0	...

Item 1. Total: 1

< 1 > 10 / page

04 Theme and Appearance

- Theme
- Browser
- Login Interface
- Platform Interface
- Title and Appearance
- Monitoring Mode

The screenshot shows the ZStack Cloud Settings interface. The top navigation bar includes the ZStack logo, a search bar, and the user 'admin' in 'ZONE-1'. The main navigation menu on the left lists various settings categories, with 'Theme and Appearance' selected. The main content area is titled 'Theme and Appearance' and includes a 'Reset to Default Settings' button. It is divided into three sections: 'Global Appearance' with a 'Theme' setting (currently blue); 'Title Setting' with three items: 'Browser' (ZStack), 'Login Interface' (Welcome to ZStack Cloud), and 'Platform Interface' (ZStack Cloud); and 'Monitor' with two items: 'Title and Appearance' (Real-Time Monitor) and 'Monitoring Mode' (External Monitoring).

04 Email Server

- Email Server

The screenshot shows the ZStack Cloud interface. At the top, there is a navigation bar with the ZStack logo, a search bar, and the user 'admin' in 'ZONE-1'. Below this is a secondary navigation bar with links to Dashboard, Resource Center, Platform O&M, Operational Management, and Settings. The left sidebar contains a 'Settings' menu with categories: Sub-Account Setting, Sub-Account Management, System Setting, Theme and Appearance, Email Server (highlighted), Log Server, Platform Setting, Scenario Template, and Global Setting. The main content area is titled 'Email Server' and includes a sub-tab 'Existing Resources'. Below the tab are action buttons: '+ Add Email Server', 'Enable', 'Disable', 'Bulk Action', and 'Search'. A table header is visible with columns: Name, SMTP Port, SMTP Server, User Name, State, and Actions. The table area is currently empty, displaying a 'No Data' message with a folder icon.

04 Log Server

- Log Server

The screenshot shows the ZStack Cloud interface. At the top, there is a navigation bar with the ZStack logo, a search bar, and the user 'admin' in 'ZONE-1'. Below this is a secondary navigation bar with links to Dashboard, Resource Center, Platform O&M, Operational Management, and Settings (which is highlighted). On the left side, there is a settings menu with categories: Sub-Account Setting, Sub-Account Management, System Setting, Theme and Appearance, Email Server, Log Server (highlighted), Platform Setting, Scenario Template, and Global Setting. The main content area is titled 'Log Server' and includes a descriptive paragraph: 'A log server is used to collect logs of the management node. You can add a log server to the cloud and use the collected logs to locate errors and exceptions. This makes your O&M more efficient. [Learn more.](#)' Below the text is a control bar with a refresh icon, a '+ Add Log Server' button, a 'Bulk Action' dropdown, and a search bar. Underneath is a table header with columns: Name, Server IP, Port, and Log Severity. The table body is currently empty, displaying a 'No Data' message with a folder icon.

04 Scenario Template

- High Availability
- Production Environment
- Cloud Security
- VM Performance Optimization

The screenshot shows the ZStack Cloud interface. The top navigation bar includes the ZStack logo, a search bar, and the user 'admin' in 'ZONE-1'. The main navigation menu on the left lists: Dashboard, Resource Center, Platform O&M, Operational Management, and Settings (selected). The Settings sidebar includes: Sub-Account Setting, Sub-Account Management, System Setting, Theme and Appearance, Email Server, Log Server, Platform Setting, Scenario Template (selected), and Global Setting.

Scenario Template

Scenario Template provides multiple templates that encapsulate scenario-based global settings. You can apply a template globally with one click based on your business needs. This improves your O&M efficiency. [Learn more.](#)

>	Settings for High Availability This template applies to VM HA scenarios.	Reset to Default Settings	Apply
>	Settings for Production Environments This template applies to production environments.	Reset to Default Settings	Apply
>	Settings for Cloud Platform Security This template applies to scenarios that require high security of the platform.	Reset to Default Settings	Apply
>	Settings for VM Performance Optimization This template applies to scenarios that require high performance of VM instances.	Reset to Default Settings	Apply

04 Global Setting

- Basic Settings
- Advanced Settings

ZStack Cloud | Search | ZONE-1 | admin

Dashboard | Resource Center | Platform O&M | Operational Management | **Settings**

Settings

- Sub-Account Setting
- Sub-Account Management
- System Setting
- Theme and Appearance
- Email Server
- Log Server
- Platform Setting
- Scenario Template
- Global Setting**

Global Setting

Global Setting allows you to configure settings that take effect on the whole platform. [Learn more.](#) Reset to Default Settings

Basic | Advanced

Search

Platform Policy

Platform Login Policy

Enable IP Allowlist/Blocklist ⓘ	<input checked="" type="checkbox"/>
Disallow Multiple Connection Sessions of One User ⓘ	<input type="checkbox"/>
Session Timeout Period ⓘ	2hours ✎
Platform Verification Code Policy ⓘ	false ✎
Platform Login Password Update Policy ⓘ	Disable ✎
Lock Account Policy Upon Continuous Failed Login ⓘ	false ✎
Password Strength Policy ⓘ	false ✎
Enable Two-factor Verification ⓘ	<input type="checkbox"/>

Timeout Policy

Timeout Period of Image Addition ⓘ	3hours ✎
------------------------------------	----------------------------

- Platform Policy
- Platform Login Policy
- Timeout Policy
- Deletion Policy
- HA Policy
- Management Node Po
- Cleanup Policy
- Concurrency Policy
- Resource Center
- Resource Pool
- Hardware
- Network
- Platform O&M
- Monitoring and Alarm
- Tag

04 Other Features

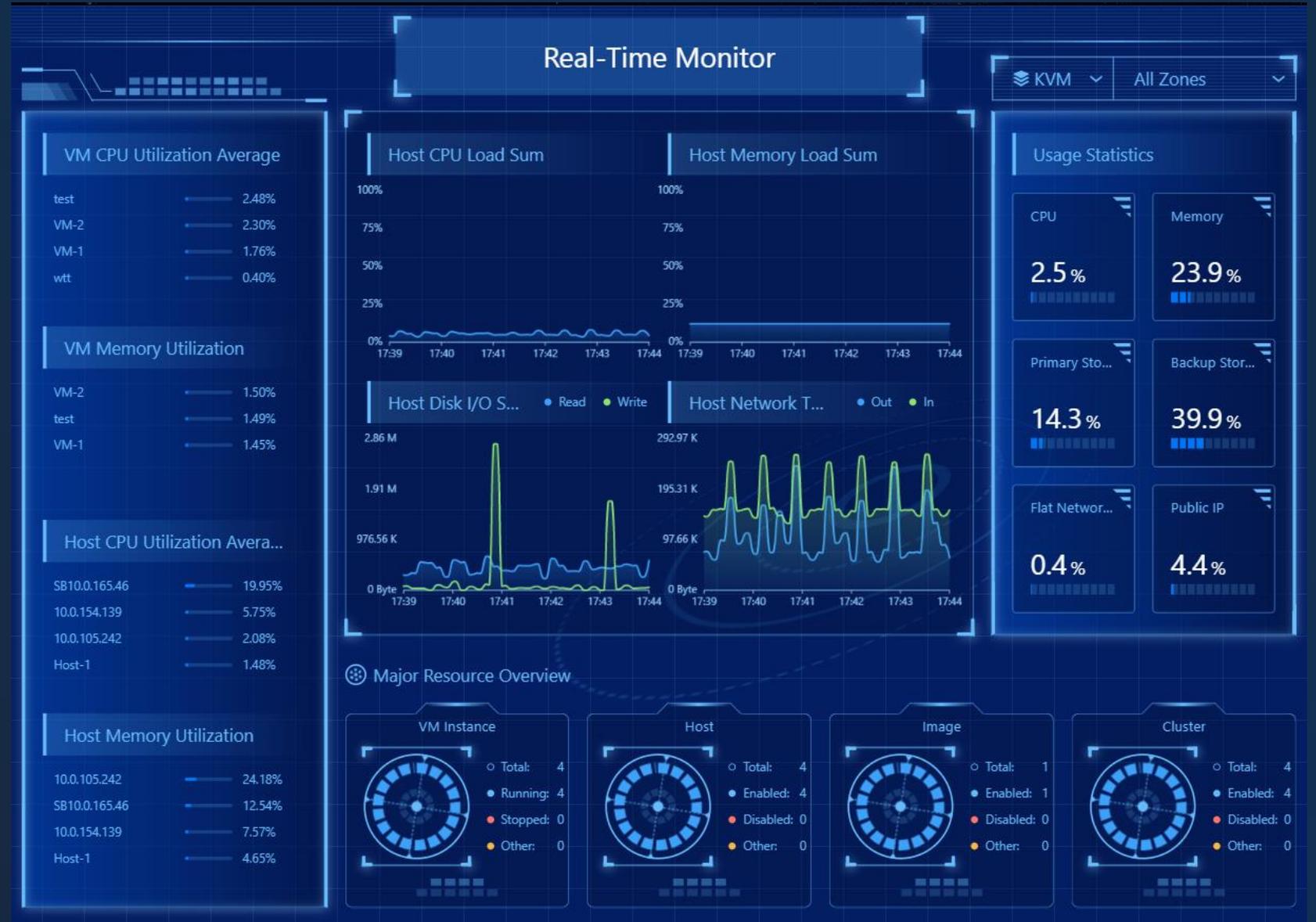
- Monitor Dashboard
- Tickets
- Recent Messages
- Current Task
- Help Center

The screenshot displays the ZStack Cloud dashboard interface. At the top, there is a navigation bar with the ZStack logo, a search bar, and a user profile for 'admin' in 'ZONE-1'. Below the navigation bar, there are tabs for 'Dashboard', 'Resource Center', 'Platform O&M', 'Operational Management', and 'Settings'. The main content area is divided into several sections:

- VM Instance:** Shows 4 total instances. Status breakdown: Running (4), Stop (0), Other (0).
- CPU Utilization:** 2.5% used, 4 used, 160 total.
- Memory Utilization:** 23.93% used, 7.29 GB used, 30.48 GB total.
- Host:** Shows 4 total hosts. Status breakdown: Connected (4), Disconnected (0), Other (0).
- Primary Storage Utilization:** 14.29% used, 82.74 GB used, 578.9 GB total.
- Backup Storage Usage:** 39.86% used, 151.84 GB used, 380.93 GB total.
- Welcome, admin:** A user profile card showing the platform time as 2021-04-30 17:42:49.
- Recent Visit:** A list of recent visits including 'Sub-Account Man...', 'Theme and Appea...', 'Email Server', 'Log Server', 'Scenario Template', and 'Global Setting'.

04 Monitor Dashboard

- Average VM CPU Utilization
- VM Memory Utilization
- Average Host CPU Utilization
- Host Memory Utilization
- Host CPU Workload
- Host Memory Workload
- Host Disk I/O
- Host Network Throughput
- Major Resource Overview
- Usage Statistics



04 Tickets

- Current Tickets
- Recent Ticket Status

The screenshot displays the ZStack Cloud dashboard interface. At the top, there is a navigation bar with the ZStack logo, a search bar, and the current zone 'ZONE-1' with a user profile 'admin'. Below the navigation bar, there are tabs for 'Dashboard', 'Resource Center', 'Platform O&M', 'Operational Management', and 'Settings'. The main content area is divided into several widgets:

- VM Instance:** Shows 4 total instances, with 4 running, 0 stopped, and 0 in other states.
- CPU Utilization:** Shows 2.5% utilization, with 4 used and 160 total.
- Memory Utilization:** Shows 23.93% utilization, with 7.29 GB used and 30.48 GB total.
- Host:** Shows 4 total hosts, with 4 connected, 0 disconnected, and 0 in other states.
- Primary Storage Utilization:** Shows 14.29% utilization, with 82.74 GB used and 578.9 GB total.
- Backup Storage Usage:** Shows 39.86% utilization, with 151.84 GB used and 380.93 GB total.
- Host CPU Load Sum:** Shows 7.78% utilization.
- Total Host Memory Utilization:** Shows 12.23% utilization.

A sidebar on the right, titled 'Current Ticket', is highlighted with a red box. It contains a 'Tickets' button, 'My Approvals' (0), and 'Recent Ticket Status' (No ticket records). Below this, there is a 'Recent Visit' section with links to 'Sub-Account Man...', 'Theme and Appea...', 'Email Server', 'Log Server', 'Scenario Template', and 'Global Setting'. At the bottom of the sidebar, there is a link for 'Unread Alarm Statistics in Recent Seven Days'.

04 Recent Message

- Recent Alarms

The screenshot shows the ZStack Cloud dashboard with a 'Recent Message' notification panel on the right. The dashboard includes sections for VM Instance, Host, CPU Utilization, Memory Utilization, Primary Storage Utilization, and Backup Storage Usage. The 'Recent Message' panel is highlighted with a red box and contains the following items:

- Primary Storage Capacity Avail...** (Warning icon) - 2021-04-30 17:45:14 - 48 unread
- Primary Storage NFS10.0.238.2...** (Warning icon) - 2021-04-30 17:15:24 - 48 unread
- VM Memory Percent Utilizatio...** (Warning icon) - 2021-04-30 13:26:24 - 3 unread
- VM Memory Percent Utilizatio...** (Warning icon) - 2021-04-30 13:21:14 - 1 unread
- Default License Expiration Tim...** (Warning icon) - 2021-04-30 13:16:44 - 3 unread

At the bottom of the notification panel, there is a 'View All' link and two buttons: 'Scenario Template' and 'Global Setting'.

04 Current Task

The screenshot displays the ZStack Cloud dashboard interface. At the top, there is a navigation bar with the ZStack logo, a search bar, and the current zone 'ZONE-1' with a user profile 'admin'. Below this, a secondary navigation bar includes 'Dashboard', 'Resource Center', 'Platform O&M', 'Operational Management', and 'Settings'. The main content area is divided into several widgets:

- VM Instance:** Shows 4 total instances. Status breakdown: Running (4), Stop (0), Other (0).
- CPU Utilization:** 2.5% used, 4 used, 160 total.
- Memory Utilization:** 23.93% used, 7.29 GB used, 30.48 GB total.
- Host:** Shows 4 total hosts. Status breakdown: Connected (4), Disconnected (0).
- Primary Storage Utilization:** 14.29% used.
- Backup Storage Usage:** 39.86% used, 151.84 GB used.

A red box highlights a panel on the right side of the dashboard, titled 'Operation History' and 'Current Tasks(0)'. This panel contains a folder icon and the text 'No current tasks', with a 'View All' link at the bottom.

- Operation History
- Current Tasks

04 Help Center

The screenshot shows the ZStack Cloud management interface. At the top, there is a navigation bar with the ZStack logo, a search bar, and the user's location (ZONE-1) and name (admin). Below this is a secondary navigation bar with tabs for Dashboard, Resource Center, Platform O&M, Operational Management, and Settings. The Settings page is active, showing a left sidebar with various setting categories like Sub-Account Setting, System Setting, Theme and Appearance, Email Server, Log Server, Platform Setting, and Global Setting. The main content area is titled 'Global Setting' and has tabs for 'Basic' and 'Advanced'. A 'Help Center' window is overlaid on the right side of the page, featuring a search bar and a list of commonly used documents: 'What is License?', 'What is SAN Storage', 'What is Billing Management?', and 'What is Backup Service?'. The Help Center window has a red border and standard window controls (maximize, close).

- Search Docs
- Commonly Used Docs

Content

1

ZStack Fundamentals

2

ZStack Planning

3

ZStack Quick Start

4

ZStack SKU

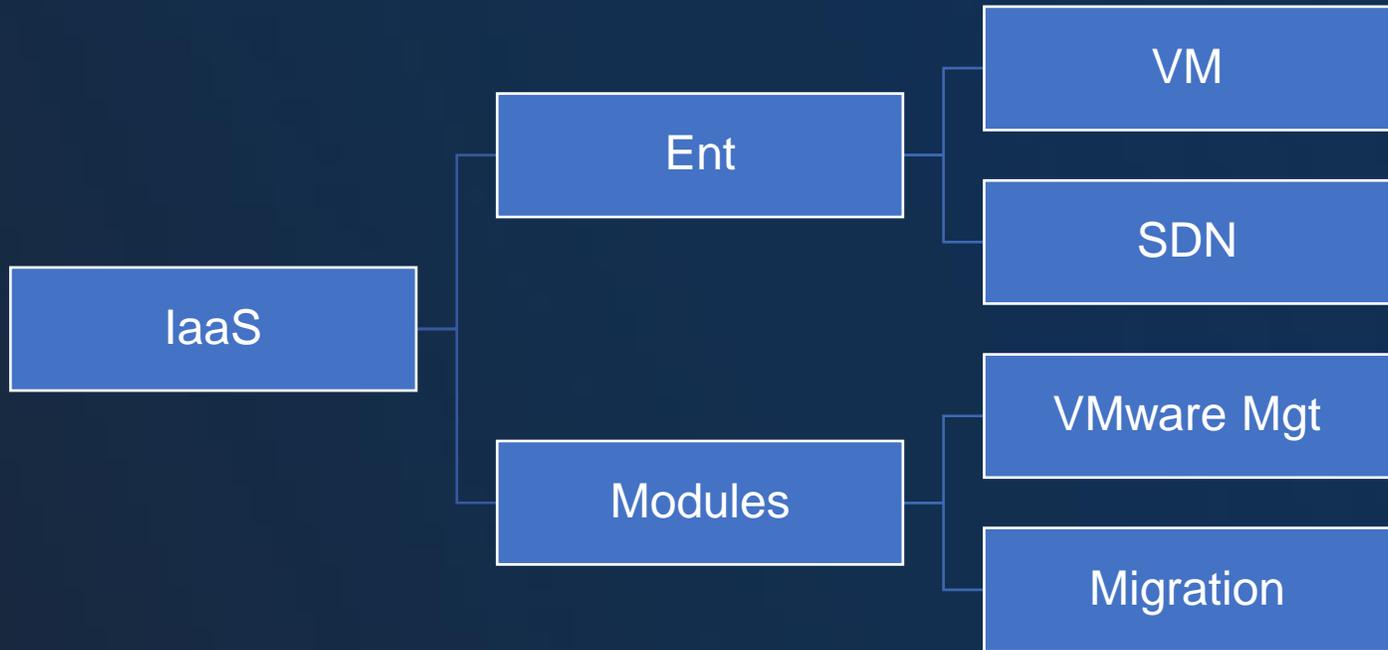
5

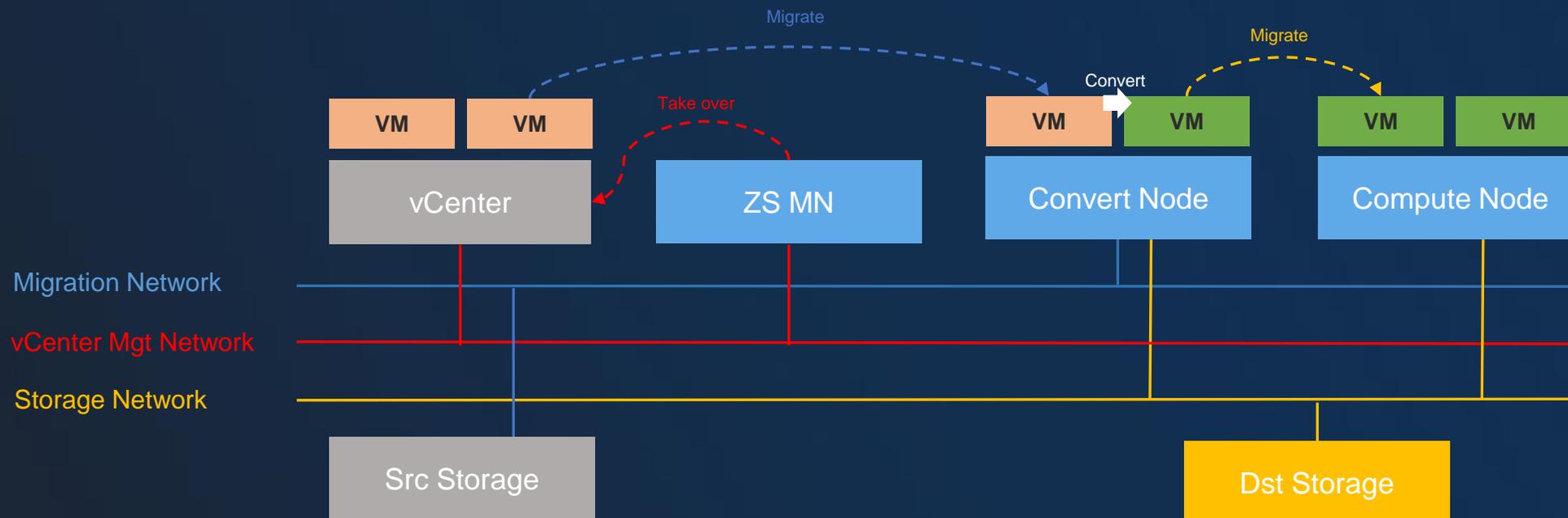
ZStack Functions

6

VMware v2v operation

05 ZStack Modules for VMware Migration



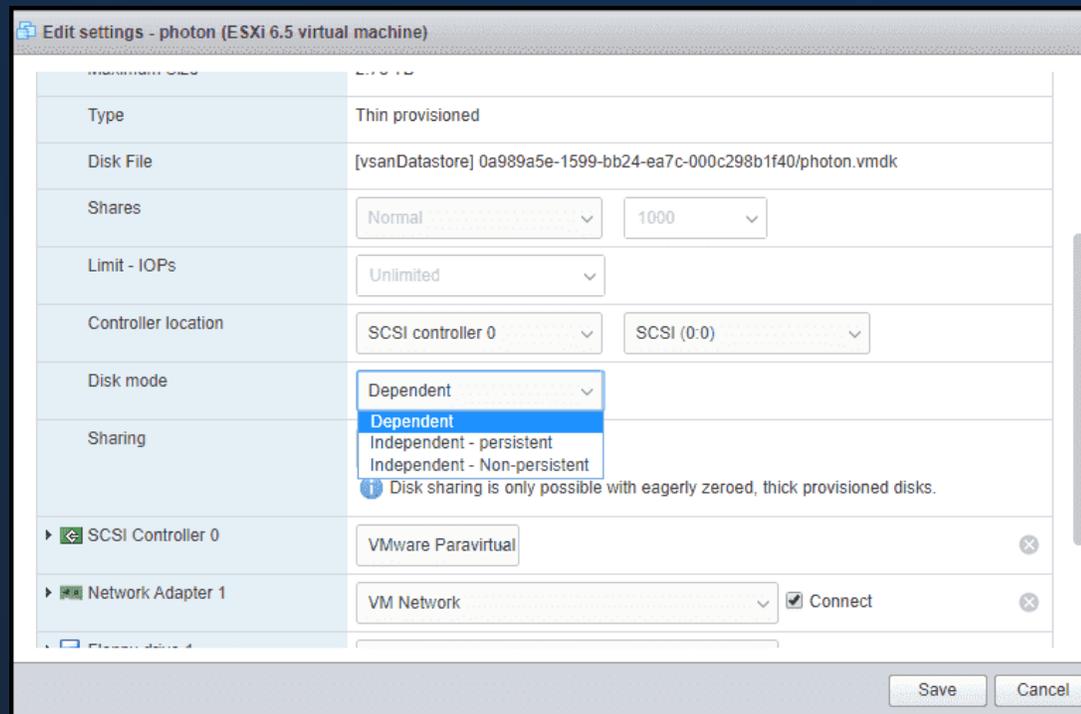


- vCenter is 5.0 to 7.0 and the vCenter has the same version as ESXi
- The OS of the source VM should be RHEL/CentOS 4.x and after, SLES 11 and after, Ubuntu 12 and after, Windows 7/2003 and after
- The Primary Storage of ZStack should be LocalStorage, NFS, Shared Block, Ceph
- ZStack v2v only support offline migration
- ZStack provide a live-migration service for a single VM

1. Multiple v2v jobs will be created automatically according to the number of source VMs selected
2. The source VMs will be automatically powered during the v2v process
3. Don't power on the source VMs during the v2v process
4. Don't restart the v2v conversion host during the v2v process
5. The data volume symbol might be changed and need to be manually adjusted on Windows

05 Step 1 - Check the Source Configuration

1. Uninstall the VMware Tools for source VMs
2. Turn off sleep mode for Windows 2012/2016 VMs
3. Turn off file compression for Windows VMs
4. If a VM has attached additional volumes, which needs to set volume mode as the dependent mode



05 Step 2 – Add vCenter to ZStack

< Add vCenter

Name *

Description

Domain *

Port *

Username *

Password *

HTTPS/HTTP HTTPS HTTP

Basic Resource > [blurred]

[blurred] No description

Edit Sync Data Delete

Overview Cluster Primary Storage Backup Storage Host Resource Pool Audit

Basic Info

State : ● Enable

Status : ● Connected

HTTPS/HTTP : HTTPS

Domain : 172.21.253.250

Port : 443

Username : administrator@vsphere.local

UUID : 01763b9687f949a290aaf88a92ac9209

Creation Time : 2022-02-15 18:15:50

Last Operation ... : 2022-03-30 14:17:14

Associate Resource

Clusters : 1

Resource Pools : 0

Primary Storages : 4

Backup Storages : 4

Hosts : 1

VM Instances : 26

Volumes : 13

Images : 14

L3 Networks : 5

important



Step 3 – Add Conversion Host

< Add V2V Conversion Host

Name *

Description 0/256

Type * ⓘ VMware Platform KVM Platform

Host *

Cache Path *

Migration Network ⓘ

Upstream Bandwidth Mbps ▾

Downstream Bandwidth Mbps ▾

Minimum requirement

Hardware	Minimum Configuration
CPU	>= 8 Core
Memory	>= 16 GB
Network	>= 1 * 1G
Storage	>= 50 GB

← One of ZStack Compute node

← Cache to store the VM disk file

← Planned migration network, none use ZStack management network

← QoS

Step 4 – Add Source VM

< Create V2V Job

Configure Source Resources

Name *
This field is required.

Description

Source Platform **VMware** KVM
Before you create a V2V job, make sure that the latest vCenter

V2V Conversion Host *
i

Source Cluster * ← vCenter Cluster

Source VM *
VM instances to be migrated will be shut down. ← vCenter VMs, up to 50 once

Configure Destination Resources

Configure Network Mapping

Configure Destination VM

Preview

vCenter Cluster

vCenter VMs, up to 50 once

05 Step 5 – Add Destination Cluster

< Create V2V Job

Configure Source Resources

Configure Destination Resources

Configure Network Mapping

Configure Destination VM

Preview

Destination Zone * ZONE-1

Destination Cluster * Select Destination Cluster

Estimated CPU usage: 1 cores
Estimated memory usage: 1 GB

This field is required.

Destination Primary Storage * Select Primary Storage

No available primary storages in the zone. Add

Estimated storage usage: 4 GB

This field is required.

Compression Mode

ZStack Cluster

ZStack Cluster primary storage

Default, improve efficiency

< Create V2V Job

Source Network	Estimated IP usage	Destination Network *	Available Destination IPs
L3-hzb-uis1	1	Public Network ▾ - Select Public Network	-

This field is required.

ZStack Network

05 Step 7 – Configure VM NIC

< Create V2V Job

Configure Source Resources

Configure Destination Resources

Configure Network Mapping

Configure Destination VM

Preview

Start VM After Migration

Destination NIC Configuration Use Source MAC and IP

Destination VM	VM Configuration
aaa-3	<p>Name * <input type="text" value="aaa-3"/></p> <p>NIC ⓘ <input checked="" type="checkbox"/> NIC1 (Default Source NIC) <input type="radio"/> Make Default</p> <p>Source NIC</p> <p>Network L3-hzb-uis1</p> <p>IP Address Nothing obtained</p> <p>MAC Address fa:b0:75:ae:7a:00</p> <p>Destination NIC</p> <p>Network * <input type="text" value="Public Network"/> - <input type="text" value="Select Public Network"/> <small>This field is required.</small></p> <p>IP Address <input type="text" value="Auto Allocation"/></p> <p>MAC Address <input type="text" value="fa:b0:75:ae:7a:00"/></p>

Optional

ZStack network

Can manually config

Can manually config

< Create V2V Job

Configure Source Resources

Configure Destination Resources

Configure Network Mapping

Configure Destination VM

Preview

Configure Source Resources

The VMs are in the running status after the migration is complete. You can change the status when you configure destination VMs.

Configure Source Resources

Source Platform : VMware
 Name : test
 V2V Conversion... :
 Source Cluster :

Configure Destination Resources

Destination Zone : ZONE-1
 Destination Pri... : PS
 Destination Clu... :
 Compression M... : Enable

Configure Network Mapping

Source Network	Estimated IP usage	Destination Network	Available Destination IPs
L3-hzb-uis1	1	<input type="checkbox"/>	32

Configure Destination VM

Destination VM	NIC Name	Source NIC Info	Destination NIC Info
aaa-3	NIC-1 Default NIC	Network : L3-hzb-uis1 IP Address : MAC Address : fa:b0:75:ae:7a:00	Network : IP Address : MAC Address :

05 Step 9 – Install ZStack Agent for VM

Configuration Info

Instance Offering : 2C2G

GPU Specificati... : None

Image : WIN10

Affinity Group : Empty

CPU Pinning : None

GuestTools : **Not installed** [Install](#)

Default IPv4 : 172.32.1.100

Default IPv6 :

MAC : FA:E1:72:13:5B:00

EIP : None

Security Group : None

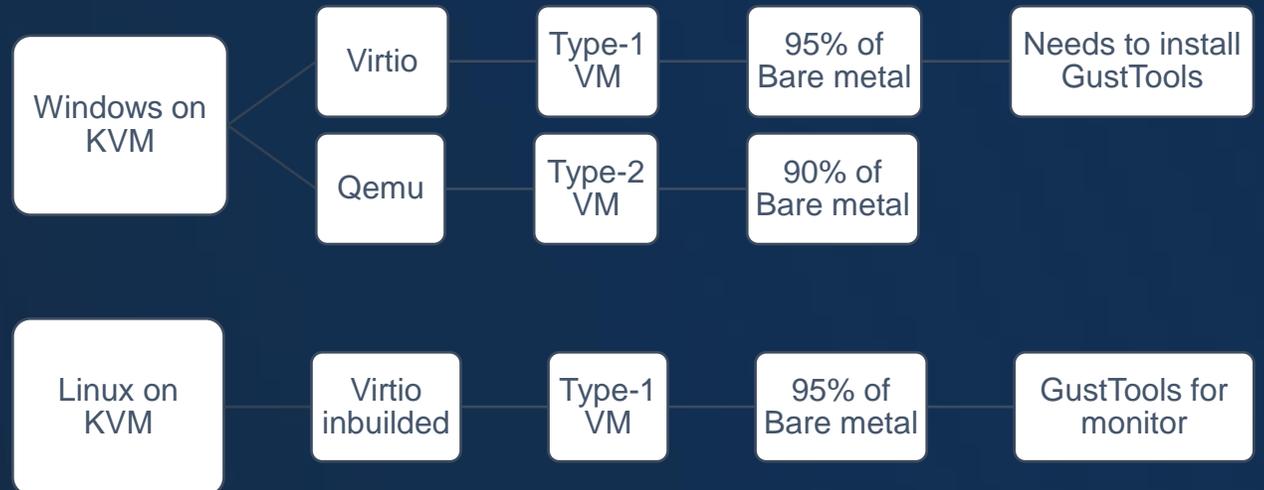
Load Balancing : None

Port Forwarding : None

- Path

Resource pool - VM Instance - VM (Click VM name) – Overview-
Configuration Info - GuestTools

Include KVM network / Disk and other necessary drivers
ZStack performance enhance tool
VM internal monitor agent



Q&A

Thanks!



LinkedIn
[company/zstack-cloud](https://www.linkedin.com/company/zstack-cloud)



Website
www.zstack-cloud.com