



# Introduction to ZStack

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# 01 Company Profile

# COMPANY



**Shanghai Headquarter**

**Hong Kong Global Headquarter**

## Branch Office

Shanghai Beijing Nanjing Guangzhou Chengdu Wuhan Xian Hefei

Hangzhou Xiamen Jinan Shenzhen



## Independent Innovation Focusing on Productization of Private Cloud



- ZStack Headquarter is located in Shanghai with 12 branch offices in China
- R & D and technicians proportion exceeds 70%
- Series A funding was completed in 2017 initiated by Alibaba Cloud
- Series B funding was done in 2018 driven by Shenzhen Capital Group, Alicloud etc.
- Series B+ funding involving RMB 230M was completed in 2020.
- China Telecom became ZStack's strategic investor in 2021.
- ZStack International Information Technologies Ltd was established in Hong Kong in 2021.



- National High Tech Enterprise
- ITSS Cloud Computing Service Capabilities Grade Standard Band 3 Certificate
- ISO9001
- Trusted Cloud Certification, Double Soft Enterprise Certification
- Series of software copyrights and patents
- 1st industry hybrid cloud white paper Author
- Participate in many national and industry standard formulation



Empower every enterprise to have their own cloud

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## 2015 - 2021

- ZStack established in Shanghai in 2015 with 12 branch offices in China now
- Series A funding was completed in 2017 initiated by AliCloud
- Series B funding was done in 2018 driven by Shenzhen Capital Group, Alicloud, etc
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## 2022

- Hong Kong, Taiwan
- Thailand, Malaysia, Indonesia, Vietnam, India, Nepal, Philippines
- Australia
- East Europe

## 2023

- South-East Asia: Singapore
- Entire APJ region and some middle east countries
- Part of European countries in 2023



30+

Countries

600+

Partners

3000+

Customers

1M+

Community  
Users

3M+

Hours of stable  
running time

# 01 Our Founder

One of the world's FIRST virtualization technology developers:



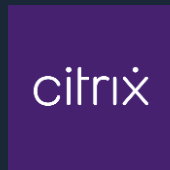
**Mr. Frank Zhang**  
張鑫先生

MAJOR CONTRIBUTOR OF SYSTEM VIRTUALIZATION :  
THEORY & IMPLEMENTATION



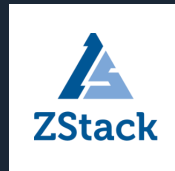
○ 2006

- Joined **Intel** Open Source Technology Center
- Developing Xen/ KVM virtual machines



○ 2010

- Joined **Cloud.com**, a start up company to provided IaaS
- One of the core architects of CloudStack
  - ❖ Support Oracle VM servers, bare metals, and bare metal VPC environments
- After Citrix acquired Cloud.com, Mr. Zhang continued to develop core features for CloudStack in Citrix



○ 2015

- Founded **ZStack**, a next-generation open-source IaaS solution

○ 2017

- ZStack secured strategic investments from Alibaba Cloud in Series A funding
- Deepened strategic ties with Alibaba Cloud in the hybrid cloud

○ 2020

- ZStack raised funds from China Telecom in Series C funding

# 01 ZStack Partners

## Strategic Partner



## Industrial Partners



➤ **Empower every enterprise to have their own cloud**



Focus on productized cloud products.



Open source, self-developed, next-generation cloud architecture.



Java-based, open API for all functions.

➤ **ZStack 4S Standards**



**Simple**



**Scalable**



**Strong**



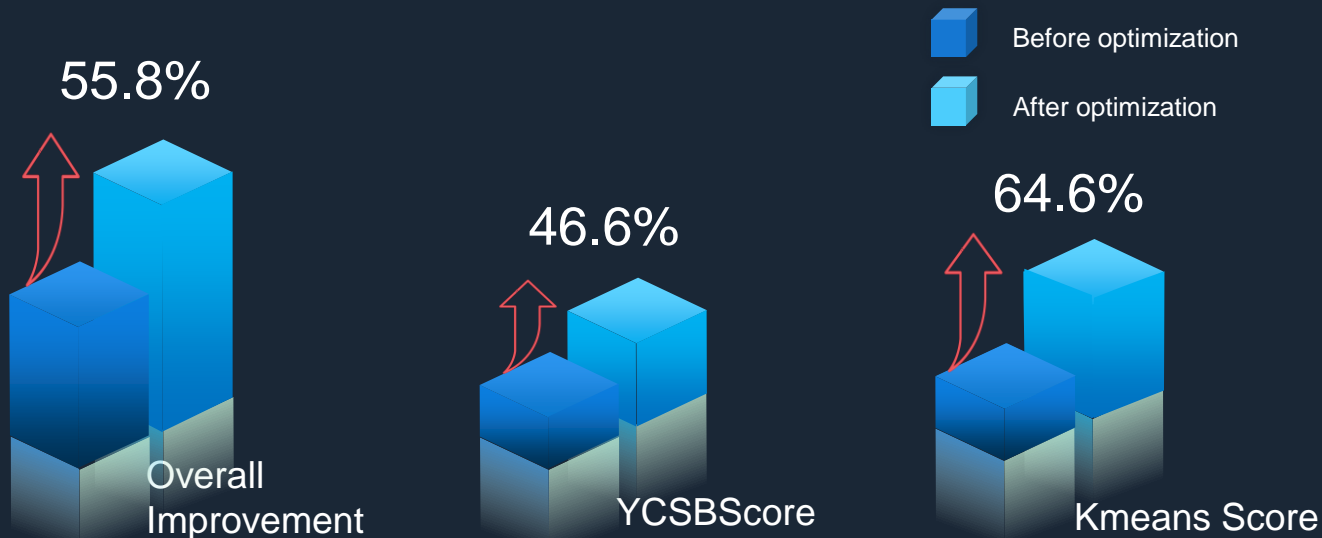
**Smart**



SPEC Cloud IaaS 2018 Benchmark			
Copyright © 2018 Standard Performance Evaluation Corporation			
Cloud Vendor: Shanghai Yunzhou Information and Technology Ltd. Cloud Type / SUT Type: private/whitebox Hardware Platform: Kunpeng 920-6426 Hypervisor: KVM Cloud Infrastructure: ZStack 3.10.0		<b>Replicated Application Instances: 39 copies</b> <b>Performance Score: 40.5</b> <b>Relative Scalability: 93.4%</b> <b>Mean Instance Provisioning Time: 47s</b>	
Tested by: ZStack Corp.		SPEC Licence Number : 6265	Test Date : Mar 7 2021
<b>Performance Sections</b> <a href="#">Performance Summary</a> <a href="#">Performance Details</a> <a href="#">Validation, Errors, and Issues</a> <a href="#">Glossary of Terms</a>	<b>SUT Configuration Sections</b> <a href="#">Instance Configuration</a> <a href="#">Cloud Configuration</a> <a href="#">Network Configuration</a> <a href="#">Storage Configuration</a>	<b>Scale-out Phase Date/Time and Test Region</b> Scale-out Start Time: 2021-03-13 22:32:41 UTC Scale-out End Time: 2021-03-14 00:53:41 UTC Test Region: CN Central Standard Time	<b>Cloud Informational Metrics</b> AI Provisioning Success: 100.00% AI Run Success: 100.00 Total Instances: 253

Reference ID: all-03140308

Vendor	Elasticity
VMware	87.40%
Red Hat	71.90%
ZStack	93.40%



Based on big data scenarios "IODense load" with "Compute-intensive workloads" test

The Standard Performance Evaluation Corporation (SPEC) is an American non-profit corporation that aims to "produce, establish, maintain and endorse a standardized set" of performance benchmarks for computers

Source:  
[https://www.spec.org/cloud\\_iaas2018/results/cloudiaas2018.html](https://www.spec.org/cloud_iaas2018/results/cloudiaas2018.html)

**ZStack Enterprise Reviews**  
by ZStack in Cloud Infrastructure and Platform Services  
5.0 ★★★★★ 25 Reviews

Related markets: ZStack Enterprise in Server Virtualization (1 Review)

Overview | Reviews | Alternatives | Likes and Dislikes

**ZStack Enterprise Ratings Overview**  
Review weighting ⓘ Reviewed in Last 12 Months EMAIL PAGE

5.0 ★★★★★ 25 Reviews (4)

Rating Distribution

5 Star ██████████  
4 Star ██████████  
3 Star ██████████  
2 Star ██████████  
1 Star ██████████

Distribution based on 25 ratings ⓘ

**Product Features and Ratings**

Feature	Rating	Count
Security and Compliance	5.0	(25)
Developer Services	4.9	(25)
Enterprise Integration	4.9	(25)
Big Data Enablement	4.9	(25)
Operations Management	5.0	(24)
Resilience	5.0	(25)
Architecture Flexibility - Public Cloud	4.7	(25)
Architecture Flexibility - Distributed Cloud	5.0	(25)
Architecture Flexibility - Edge	5.0	(25)

### ➤ Chairman of China Telecom Investment Corporation

"ZStack is currently the IaaS provider in cloud computing with the advantages of self-research and productization and has gained wide user recognition in the construction of new digital infrastructure."

### ➤ Australia users

"ZStack is architecturally stable and robust. It provides resource pooling sharing, automatic elastic scaling, and refined management and maintenance."

### ➤ Gartner users

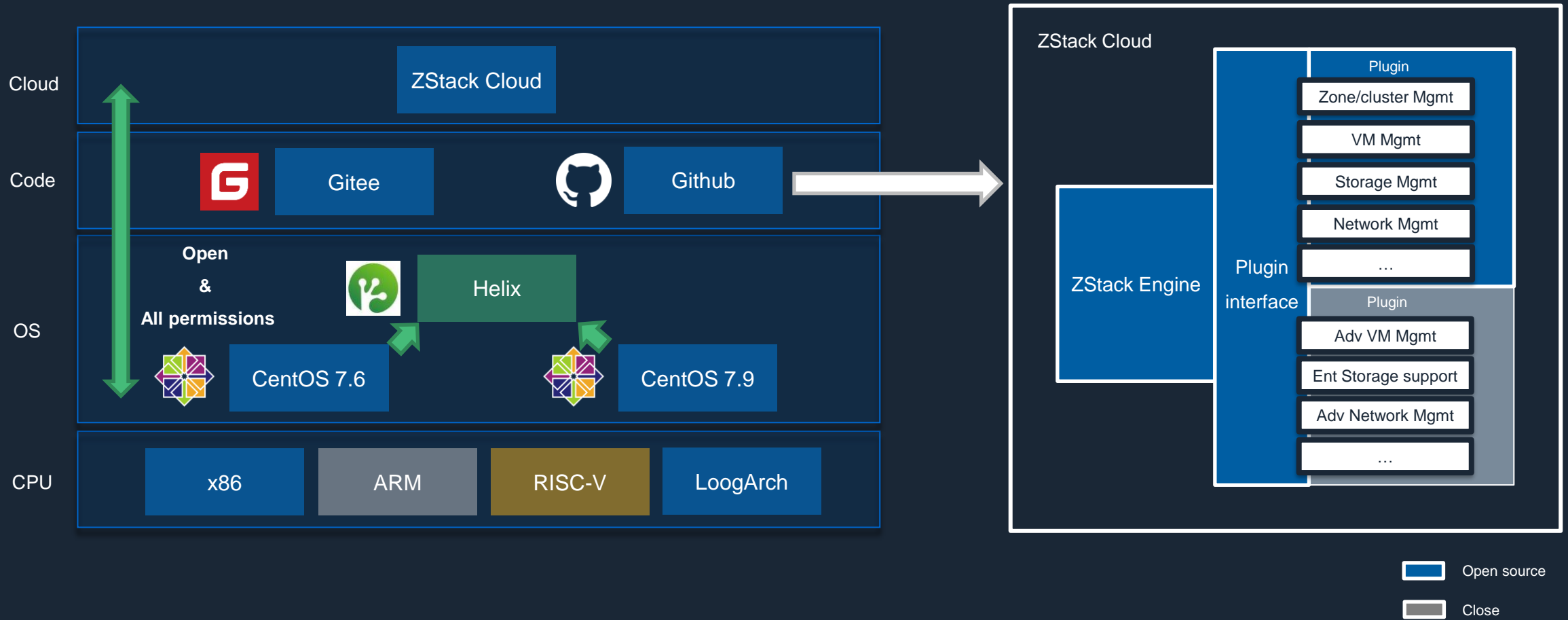
We have actually used their products, performance, stability, and sound function, can meet all our needs, worthy of others to recommend their products.

### Three Categories of Chinese HCI Vendors and Their Advantages

	Large DCI Vendors	Specialist HCI Vendors	Crossover Vendors
<b>Chinese HCI Vendors</b>	<ul style="list-style-type: none"> <li>Huawei</li> <li>H3C</li> <li>Inspur</li> <li>Lenovo</li> </ul>	<ul style="list-style-type: none"> <li>ArcherOS Software</li> <li>SmartX</li> <li>Zettakit</li> </ul>	<ul style="list-style-type: none"> <li>CMCC</li> <li>EasyStack</li> <li>QingCloud</li> <li>Sangfor</li> <li>Topsec</li> <li>ZStack</li> </ul>
<b>Advantages</b>	<ul style="list-style-type: none"> <li>Hardware Cost</li> <li>Established Market Coverage</li> <li>Cloud Offerings</li> </ul>	<ul style="list-style-type: none"> <li>Strong Presences in Specific Verticals</li> <li>Hardware Neutral</li> <li>Cloud Neutral</li> </ul>	<ul style="list-style-type: none"> <li>Established Customer Base for Cross-Selling</li> <li>Bundled Solution</li> <li>Cloud Offerings</li> </ul>

Source: Gartner  
761308\_C

# 01 ZStack Open Ecology



# 02 Products Intro

# 02 ZStack Products

Software

Hardware

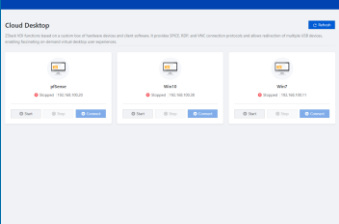
PaaS

### ZStack CMP



**Multi-cloud management**


### ZStack VDI



**Open-source VDI module**


IaaS

### ZStack Cloud




**Open-source cloud platform**

### ZStack Ceph



**High-performance Ceph**

### ZStack HCI



**Hyperconverged infrastructure**



## Simple

### Easy Deployment. Easy Maintenance

- One-click download, complete installation & deployment within 30 mins
- One host to set up a POC environment
- One maintenance technician can handle the OPS.
- One node to manage the whole cloud platform



## Scalable

### Unified Management & On-demand Delivery

- Unified management of Infrastructures and virtual resources
- Providing different editions and modules on demand.
- Open API to seamlessly integrate third-party CMPs, PaaS and OA.
- One management node can manage to 10000 hosts.



## Strong

### Extremely fast & stable with powerful architecture.

Unique heterogeneous architecture, management node failure does not affect the running VMs.

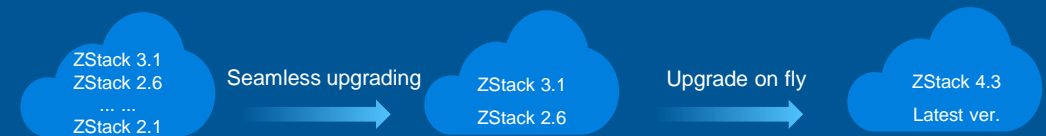
Number of VM created	Time Cost
10	1.55 seconds
100	11.33 seconds
1000	103 seconds
10000	23 minutes



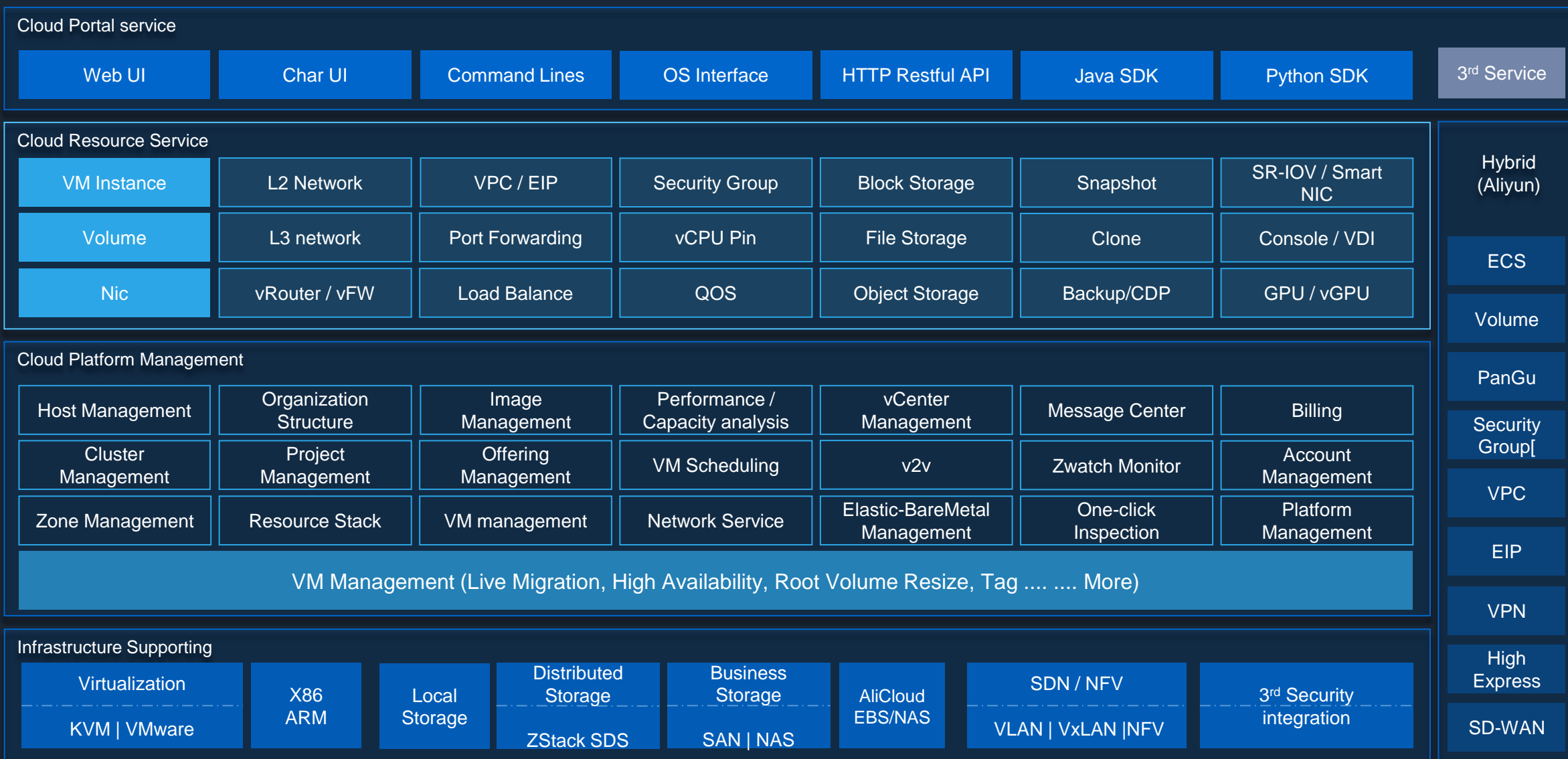
## Smart

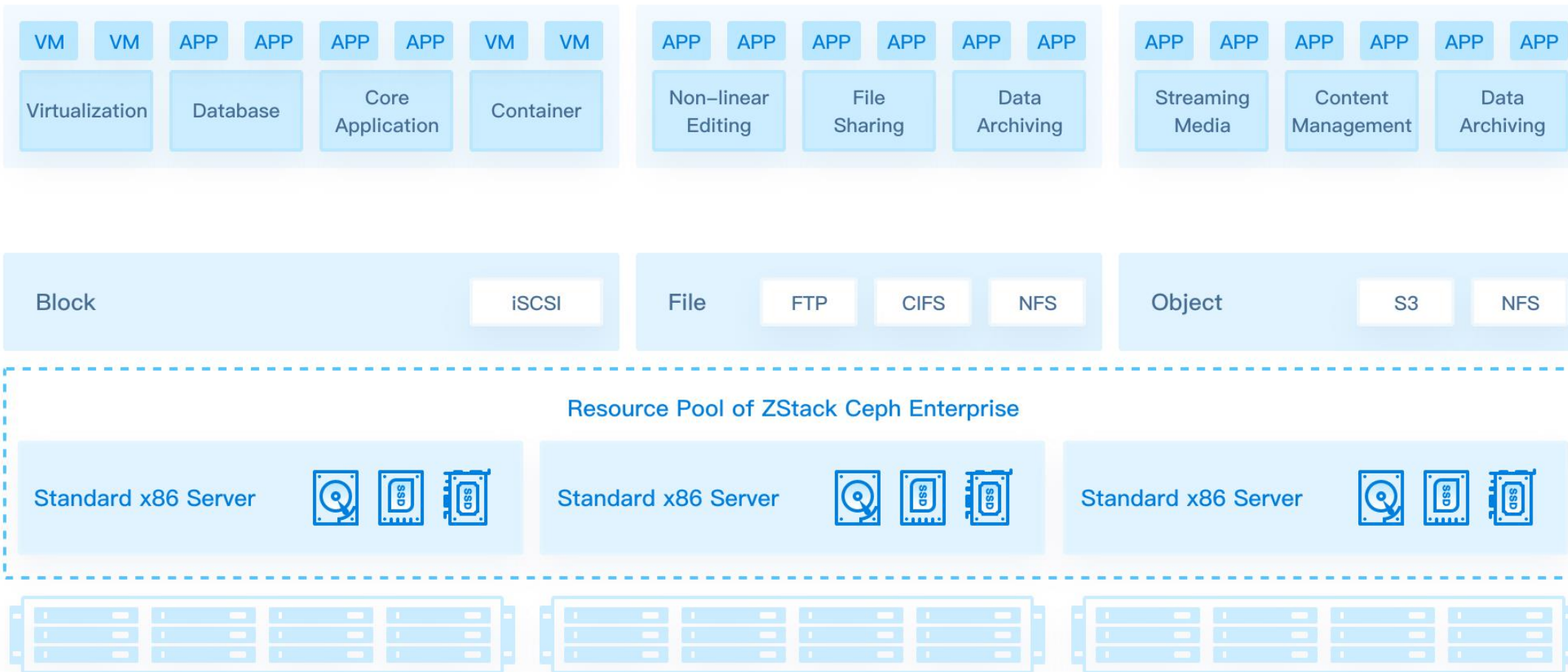
### One-click & Seamless & perpetual upgrade

- Rapidly upgrade to meet security challenges
- Perpetual license, perpetual upgrade to avoid locking



# ZStack Cloud Functions Overview









Product	Version	Hardware
ZStack	Basic	Customized after ZStack certificate
	Standard	Customized after ZStack certificate
Cube	Pro	Customized after ZStack certificate
	Flash	Customized after ZStack certificate

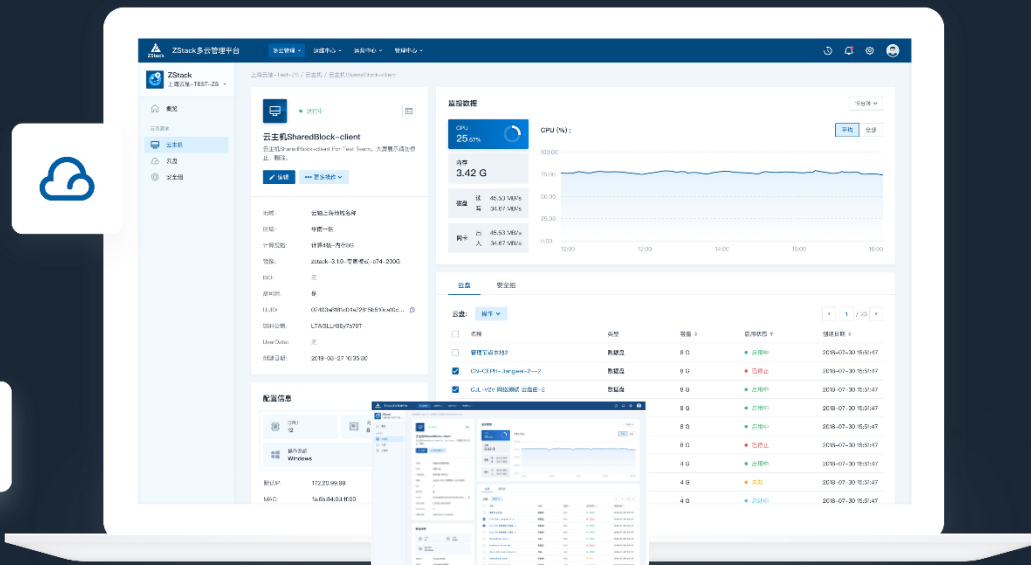
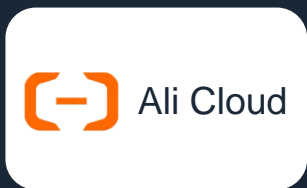
## Features

- SDC + SDS + SDN · KVM + ESXi, Cloud-based HCI
- Block + Object + File + LB native storage service
- 1-6 copies adjusted, 99.999% data reliability
- Self-healing, horizontal extension
- Self-service, smart OPS, one-key seamless upgrade
- All-in-one, 30 mins installation, out-of-box

## Scenario

- High-Performance computing
- GPU/xPU accelerated computing
- Flexible bare metal
- Data Disaster Recovery
- Hosting
- Traditional virtualisation

# 02 ZStack CMP Overview



## Unified Resource Management

Unified management of different ZStack Cloud, Alibaba Cloud, AWS vCenter, and API to integrate with other platforms

## Standardized Service Catalog

Shield the differences between different resource platforms, present a standard resources to users;

## Intelligent OPS

Custom monitoring policies, multi-cloud unified monitoring, and statistics; OpenAPI and customized plug to integrate with Invoicing analytical and other systems.

## Refined Billing Management

Perform metering and billing of various types of resources, budget setting, cost statistical analysis, and effective cost control;

# 03 ZStack Solutions

# 03 Infrastructure as a Service

## Solution:

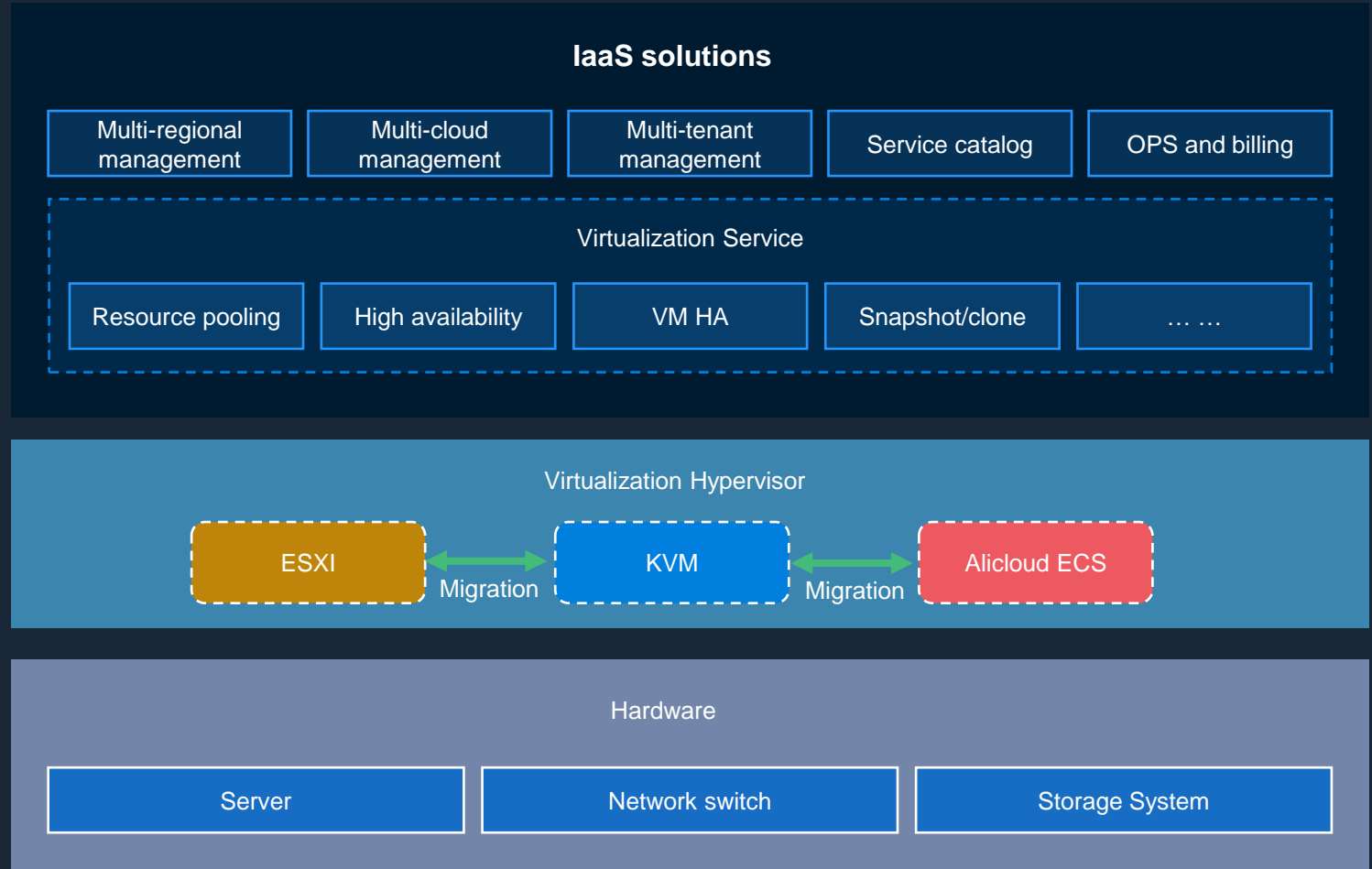
- Resource pooling: computing, network, storage;
- Unified management: multi-region, multi-cloud;
- Refined operation: multi-tenant, tickets and billing, auto OPS;
- Support agent-free migration;
- Self-service: service catalog, self-service delivery.

## Advantages:

- Unified O&M of physical resources, virtualized resources and platforms;
- Open API to automate O&M;
- Facility reuse, non-hardware binding.

## Products:

- ZStack Cloud Enterprise Enhanced



# 03 Multi-cloud Management Solution ( CMP)

## Solution:

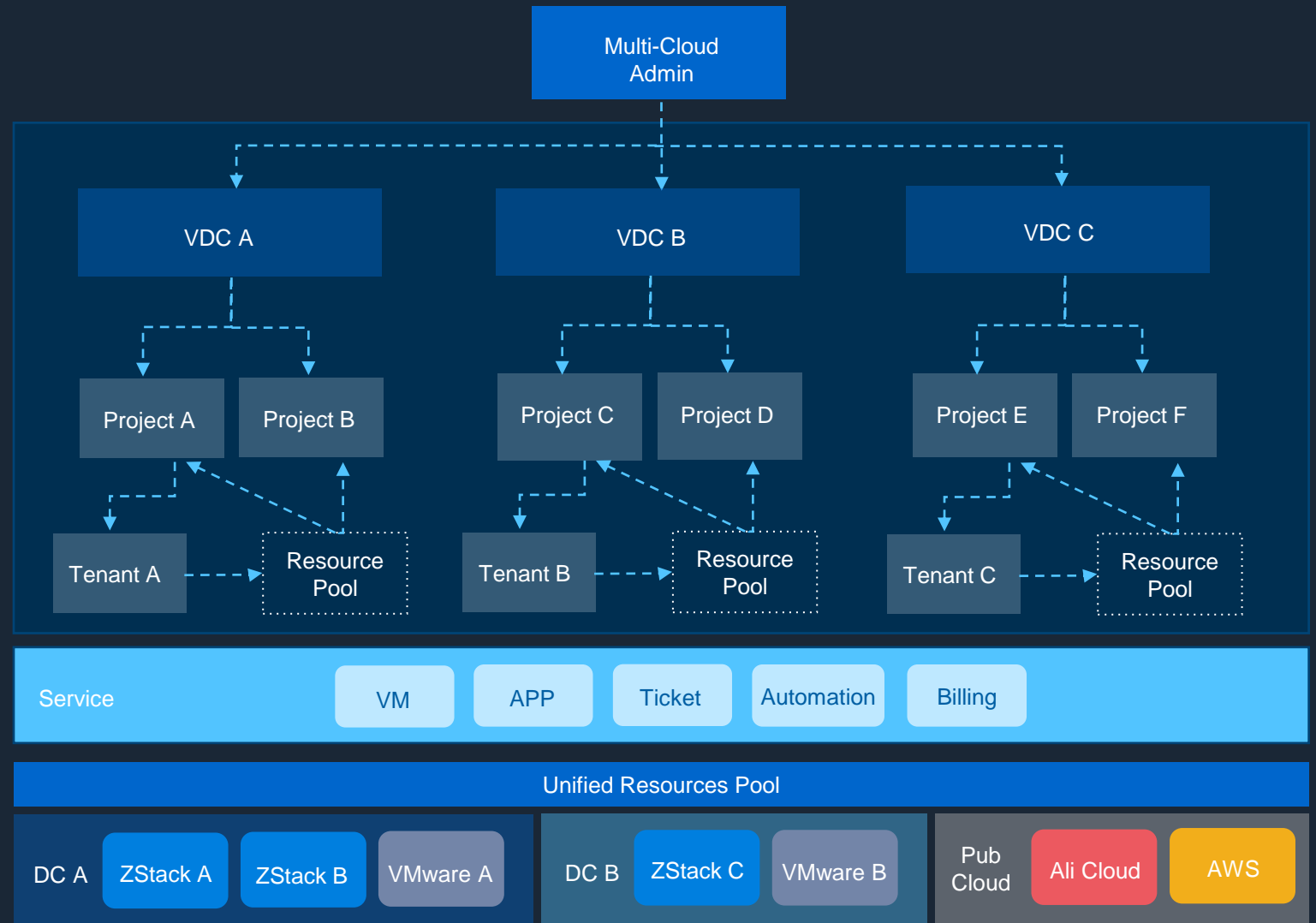
- Provides multi-cloud resource unified OPS;
- Provide unified cloud services, processes, billing;
- Unified authentication access and support for third-party authentication;
- Support for multiple cloud platforms automation

## Advantages:

- Unified multi-cloud resources;
- Flexible organizational management;
- Open APIs, custom extensions, automation.

## Products:

- ZStack CMP
- ZStack Cloud Enterprise Enhanced



# 03 Disaster Recovery as a Service

## Solution:

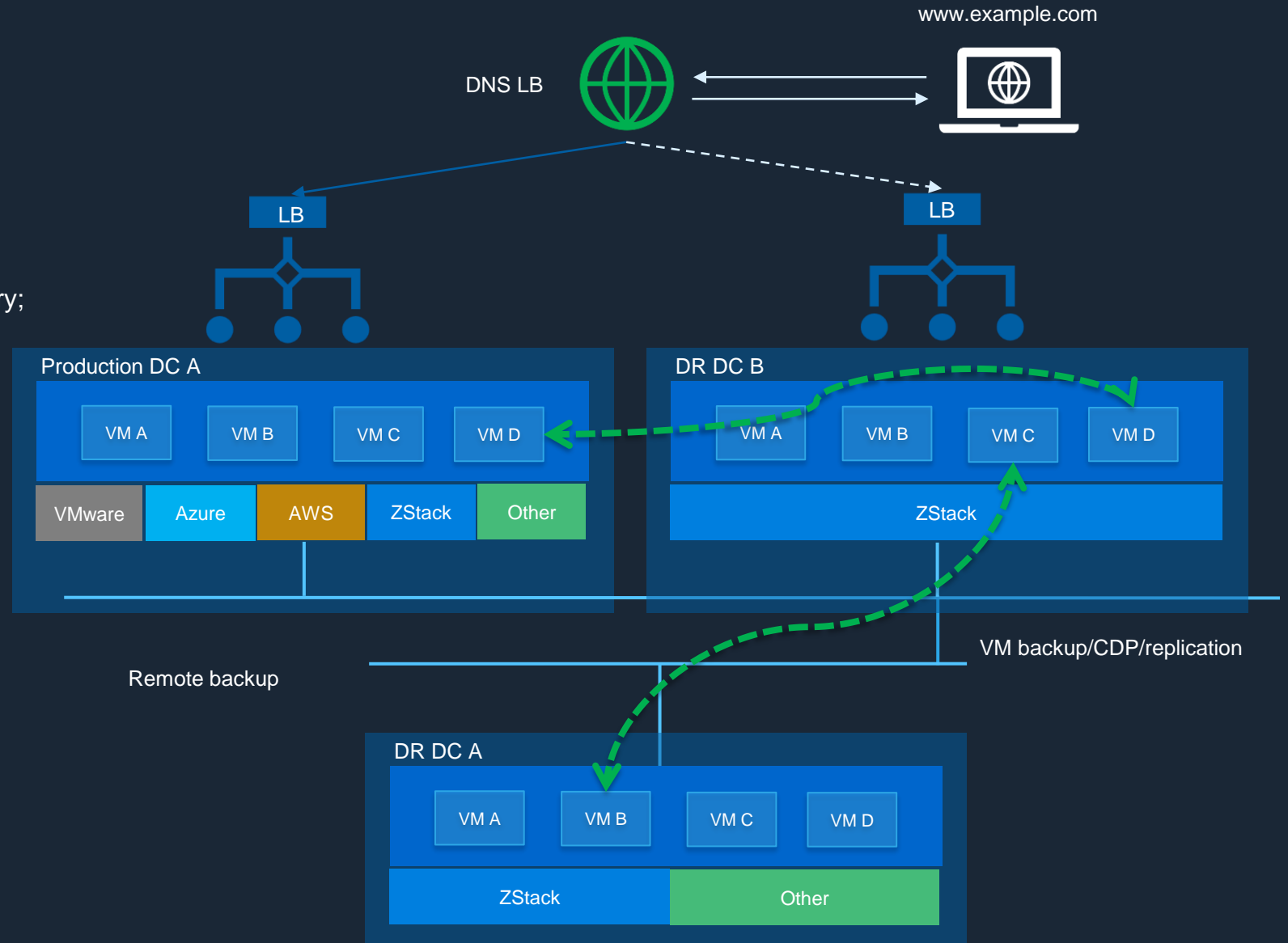
- Provides local backup/DR, remote backup/DR, and public cloud backup/DR;
- Any sources to ZStack or public cloud disaster recovery;
- Automatic synchronisation and rapid recovery;
- Multi-site protection capability.

## Advantages:

- Native automated local and remote disaster;
- Disaster recovery from any platform to ZStack;
- More flexible DR solutions.

## Products:

- ZStack Cloud Standard / Enterprise
- ZStack Cloud Backup / CDP module



# 03 Alive-Alive Datacenter Solution

## Solution:

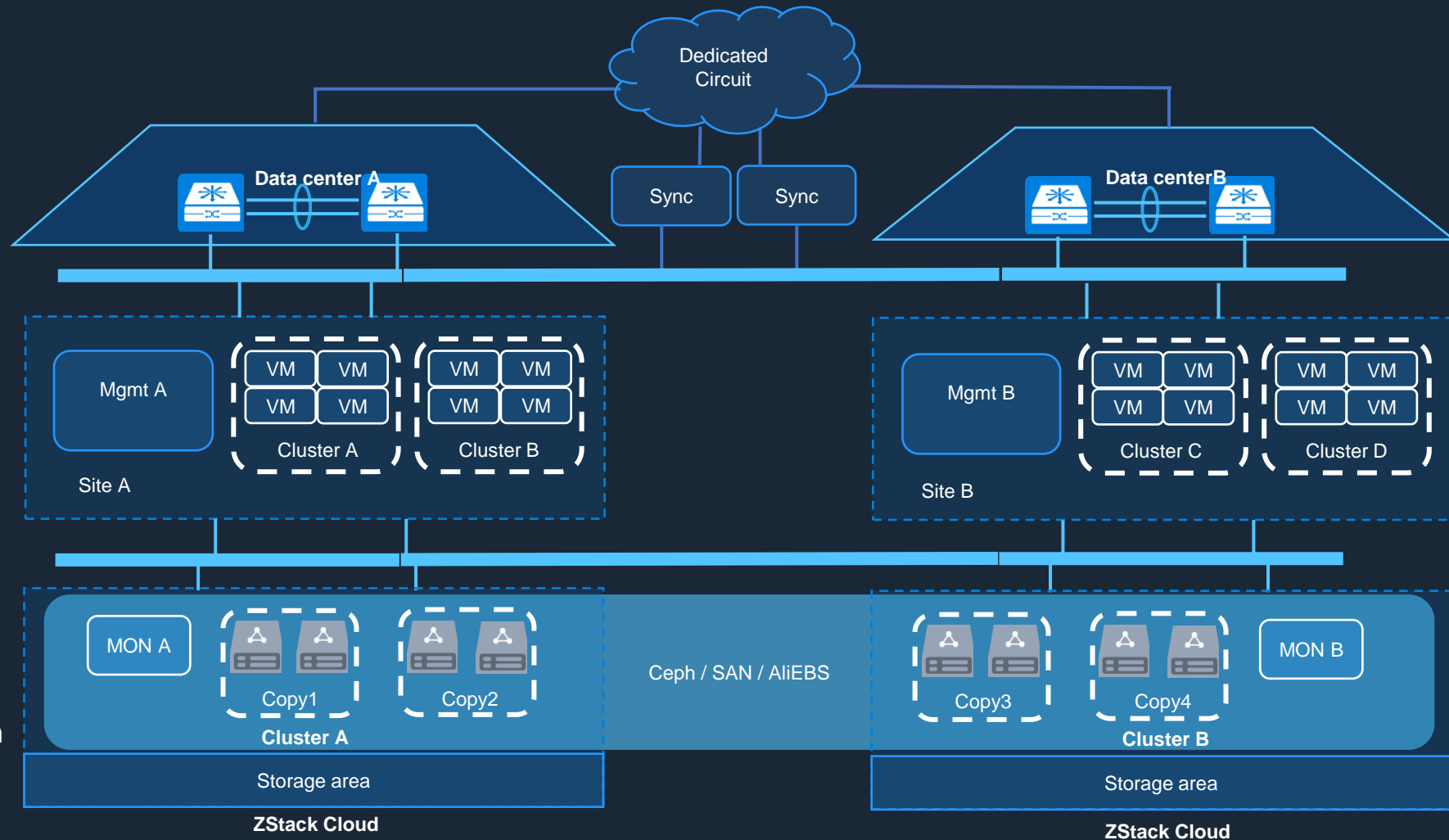
- Support for VM HA from one data center to another;
- Supports SAN, SDS and public cloud storage mounting solutions.

## Advantages:

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

## Products:

- ZStack Cloud Enterprise
- ZStack SDS or 3<sup>rd</sup> SAN with replication
- ≤ 5ms network latency



# 03 Local Public/Private Cloud Solution

## Solution:

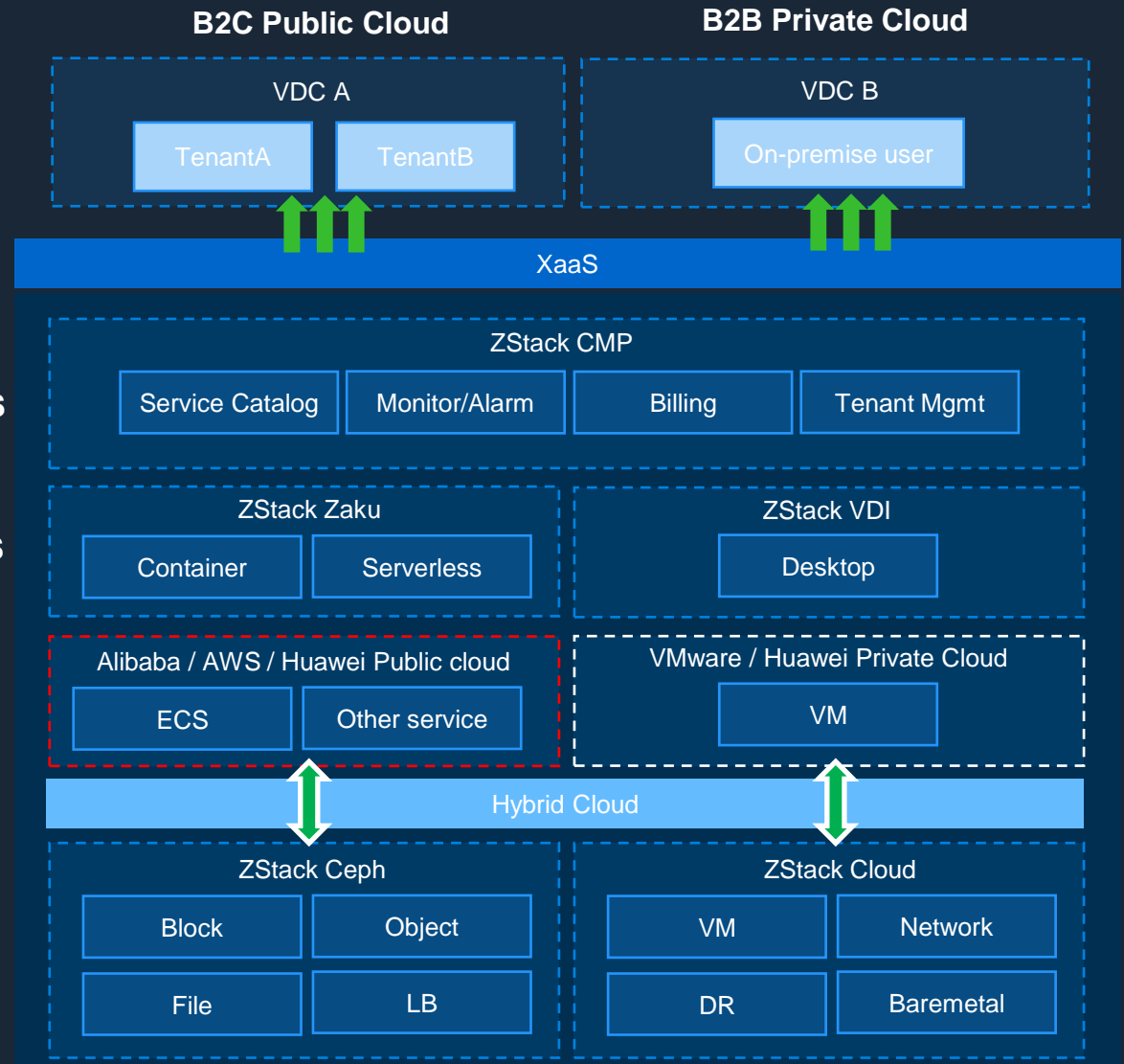
- Deploy ZStack Ceph / Cloud / Zaku / VDI to provide XaaS
- Using ZStack CMP to provide multi-tenant, self-service and billing services as on-premise private or multi-tenant public cloud solution

## Advantages:

- One-stop solution for tenancy management, billing, VM, BareMetal, DR, etc.
- Very good compatibility to leverage various infrastructures
- Support the unified operation and maintenance management of multiple resources

## Products:

- ZStack Cloud Standard / Enterprise
- ZStack Ceph
- ZStack Zaku
- ZStack VDI
- ZStack CMP





# 04 ZStack Cases

# 03 Successful Case 1: A Managed Service Provider (MSP)

## Challenge

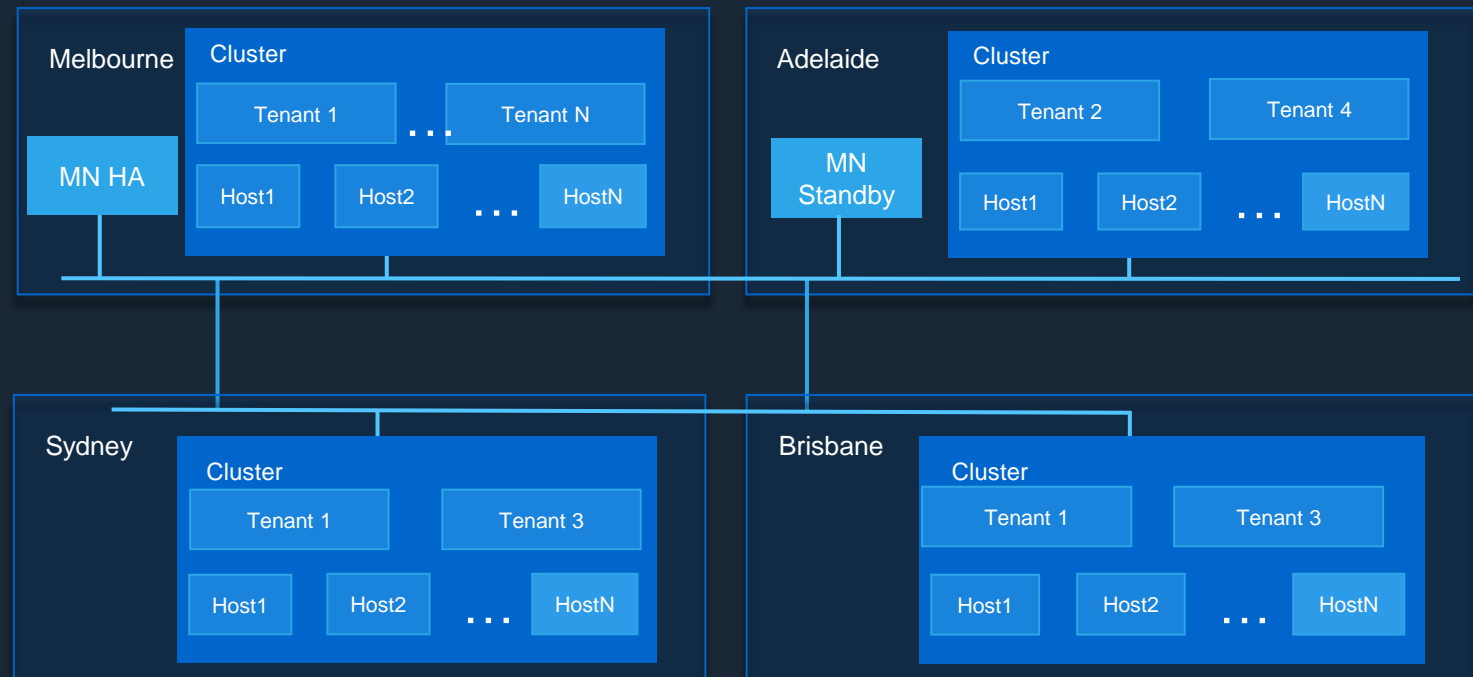
- Cloud strategy, one cloud across multiple locations
- Leverage existing hosts and storage
- Protection of investment on VMware
- Migrate VM from VMware to ZStack
- Provide backup service

## Customer Value

- One cloud, unified portal, simplified management, increased efficiency
- Open API, easy integration
- Save on investment
- Cloud services bring more profits

## Solution

- All resources of Melbourne, Adelaide, Brisbane and Sydney are managed by ZStack
- ZStack Cloud Hybrid connects with Alibaba public cloud
- ZStack takes over and enables management of existing VMware
- ZStack provides build-in migration feature for VMware
- ZStack provides build-in VM backup function; Can backup locally, remotely, even to public cloud



## 03 Successful Case 2: A Food Ordering and Delivery App

### Challenge

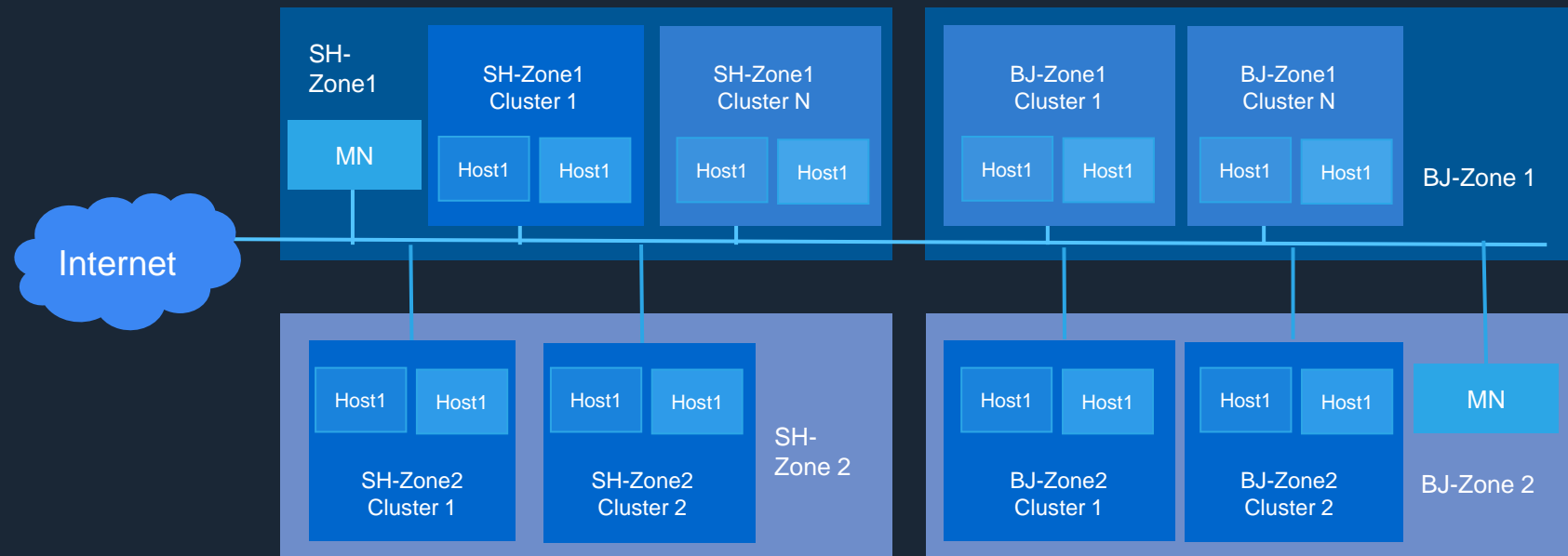
- Massive user access, order generation and data processing.
- Requiring fast resource scheduling during peak periods.
- The scale of physical resources being huge. Creating VMs on hosts or with manual commands and then delivering them to dev, test and production environments.

### Solution

- User's phone app accesses Application on ZStack cloud.
- Order processing and management workload also on the ZStack cloud
- integrated with CI/CD.
- Local storage, with HA ( at the application level ) guarantee for the application layer.

### Customer Value

- Two management nodes manage four zones simultaneously. The scale of hosts reach 2000+.
- Completely open APIs, easy to integrate or connect other 3rd platforms.
- Quick deployment and acceleration of model selection for cloud platform.
- Platform stable and strong. Relieving the maintenance team on the burden of complex and tedious routines.



## 03 Successful Case 3 – A mobile Online RPG

### Challenge

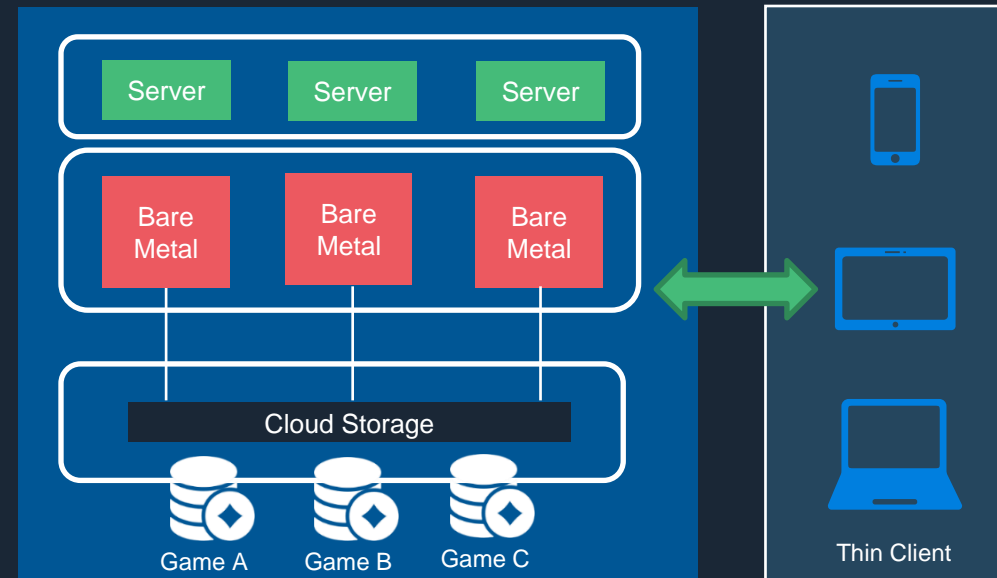
- Management of a large number of Bare-metal servers
- Rapid iteration of game versions
- Easy to manage and operate and maintain for bare metal and servers

### Customer Value

- Offers a cloud gaming model that greatly increases revenue
- Combining the capabilities of bare metal and VM enables rapid iteration of game versions
- Simplifies O&M stress with unified O&M management of bare metal and server side
- Enables elasticity of cloud gaming business

### Solution

- Using the elastic bare metal server to manage all bare metal servers
- Using cloud storage to provide bare metal template, enables rapid deployment, iteration, and rollback of services
- Unified management of bare metal and bare metal instances through bare metal services



# 05 Product Comparison

Single product with more  
integrated features  
and without core tax

### ZStack Products

#### Virtualization

ZSC Compute-Model

#### Hyper- converged

ZStack Ceph

#### Network

ZSC Net-Model

#### Multi- Cloud Mgmt

ZStack  
CMP

ZSC Mgmt-  
Model

#### Disaster Backup

ZSC Backup Service

### VMware Products

#### Virtualization

vSphere

vCenter

#### Hyper- converged

vSAN

#### Network

NSX Data Center

#### Multi- Cloud Mgmt

vRealize

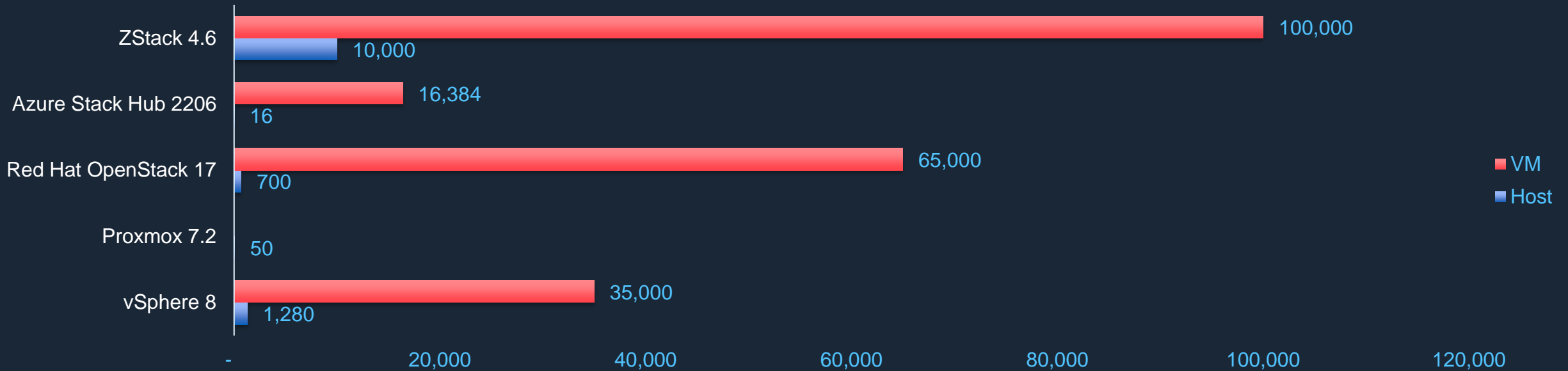
vCloud  
Suite

#### Disaster Backup

Site Recovery Manager

## 04 Maximums Hosts and VMs

ZStack Cloud supports **10000 hosts** and **100000 VMs** in a single zone. Because of its advanced design, ZStack Cloud's performance is impossible to be caught up with other products. Using ZStack Cloud can let customers easily handle any business scenarios and challenges. In addition, ZStack **only needs 4 cores 8G memory** to install.



Data Source:

VMware: <https://configmax.esp.vmware.com/guest?vmwareproduct=vSphere&release=vSphere%208.0&categories=1-0,4-0,5-9,5-10,2-0,3-0>

OpenStack: <https://access.redhat.com/articles/1436373#:~:text=There%20is%20no%20theoretical%20limit,can%20affect%20the%20practical%20limit.>

Proxmox: <https://pve.proxmox.com/pve-docs/chapter-pvecm.html>

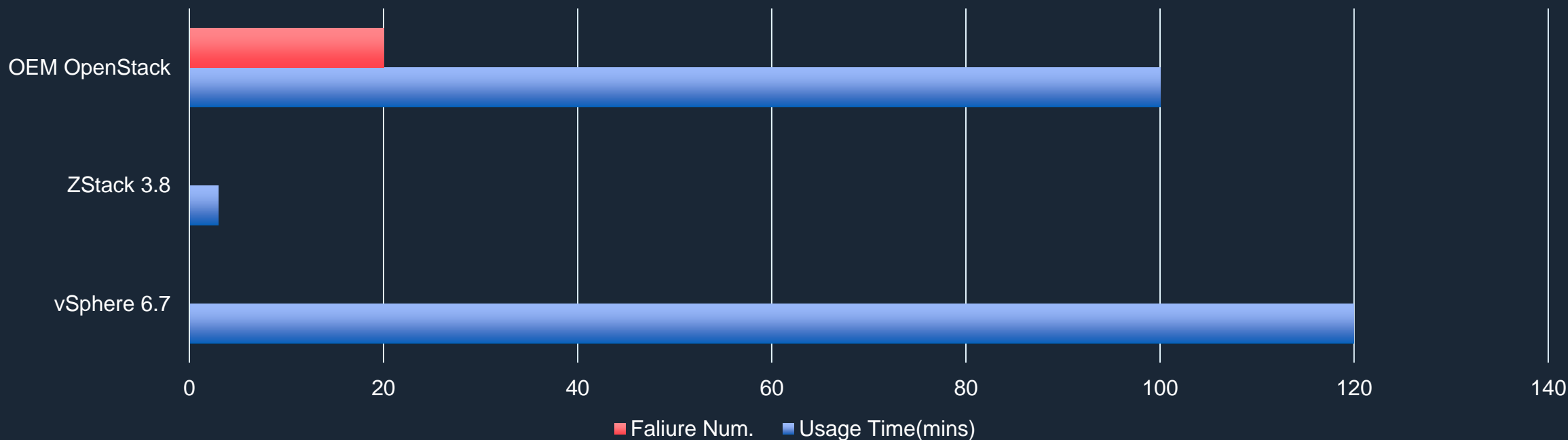
Microsoft: <https://learn.microsoft.com/en-us/azure-stack/hci/concepts/system-requirements>

## 04 Performance Comparison

A batch creation of **500 VM** with ZStack Cloud **only takes 2 mins 40 sec**. This data came from a real case:

A government security organization planned to build a cloud for its cybersecurity skills training project. To meet the specifications of the training system which needed to quickly create around 500 VM, the customer invited three vendors to do a test based on the same hardware. Finally the customer chose ZStack because of our excellent performance.

### Batch Create 500 VM



[https://www.Alibaba Cloud ZStack.io/cases/cases\\_privacy\\_cloud/case\\_government/](https://www.Alibaba Cloud ZStack.io/cases/cases_privacy_cloud/case_government/)

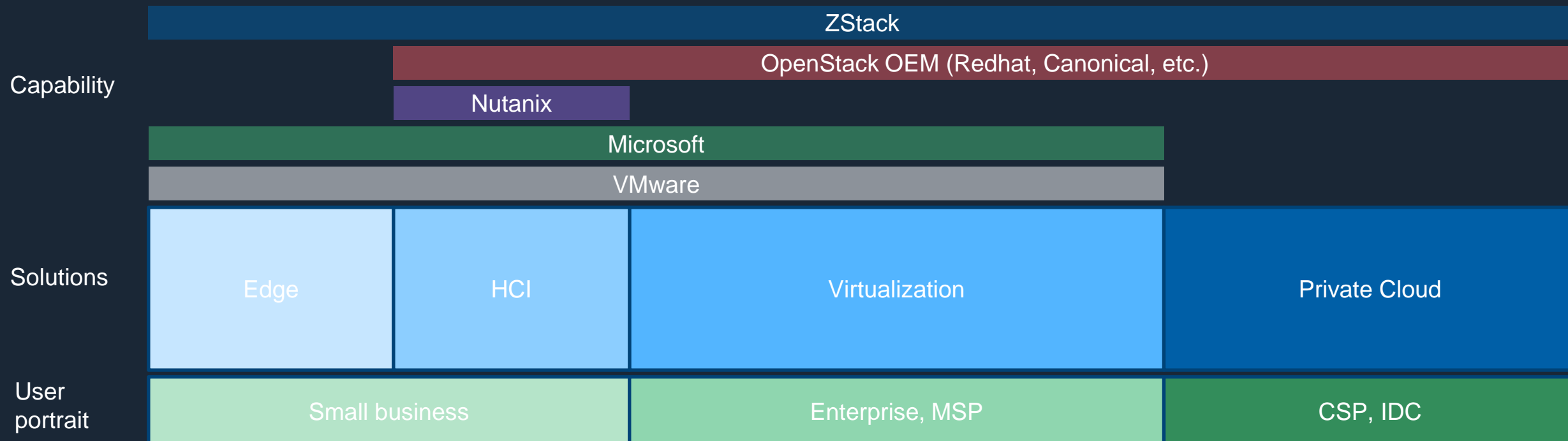


## 04 VS. Virtualization Products

	<b>VMware</b>	<b>Microsoft</b>	<b>Nutanix</b>	<b>Redhat</b>	<b>Citrix</b>	<b>ZStack</b>
<b>Virtualization</b>	ESXi	Hyper-v	AHV (built on KVM)	KVM	Xen	KVM
<b>Management</b>	vCenter	System Center	Prism	RHV	XenCenter	ZStack
<b>Network</b>	vSS, vDS	FLAT,VPC	FLAT,VPC	Flat	Flat	FLAT,VPC
<b>Storage</b>	NFS, iSCSI, FC, vSan, DAS	SMB3, NFS, iSCSI, FC, DAS	SDS	FC, FCoE, iSCSI	FC, FCoE, iSCSI	NFS, Ceph, iSCSI, FC
<b>HCI</b>	vSan	SMB3	Built-in	3-party	Not support	ZStack Ceph
<b>Hybrid cloud</b>	AWS	Azure	Not support	Not support	Not support	Alibaba Cloud
<b>Cluster Size</b>	64 hosts	64 hosts	32 hosts	400 host	64 hosts	1,000 hosts

## VS. Cloud Products

	Proxmox	OpenNebula	Virtuozzo	OpenStack	ZStack
<b>Virtualization</b>	KVM	KVM, Xen, EXSi, Hyper-V	KVM	KVM, Xen, EXSi, Hyper-V	KVM, EXSi
<b>Container</b>	support	support	support	support	support by other products
<b>Management</b>	Proxmox Web	Sunstone GUI	Virtuozzo GUI	Horizon	ZStack GUI
<b>Network</b>	Bridge	Bridge, vRouter, NSX	Bridge, vRouter	Bridge, VPC	Bridge, VPC
<b>Network services</b>	Security Groups	Security Groups	none	Security Groups, Floating IP, LB, VPN	Security Groups, Floating IP, LB, auto-scale, VPN, Stateless firewalls, OSPF, Static Route, multi-wan
<b>Storage</b>	iSCSI, NFS, Ceph, Gluster, SMB/CIFS	Datstores	Virtuozzo storage	NAS, SAN, Ceph, Swift	NFS, Ceph, Gluster, iSCSI, FC, NAS
<b>Backup integrated</b>	Yes	Only full backup	not support	not support	Backup, CDP
<b>v2v tools</b>	not support	not support	not support	not support	EXSi to KVM, KVM to KVM
<b>Hybrid cloud</b>	not support	AWS, Goolge	not support	not support	Alibaba Cloud
<b>Max nodes</b>	32	2500	no data	2000	10,000
<b>Multi-zone</b>	not support	not support	not support	support	support
<b>Multi-cluster</b>	not support	support	support	support	support
<b>Multi-tenancy</b>	support	support	support	support	support
<b>Monitor&amp;Alarms</b>	not support	not support	not support	support	support
<b>Orchestration</b>	not support	not support	not support	support	support
<b>Self-service</b>	not support	support	support	support	support
<b>Billing</b>	not support	not support	not support	not support	support
<b>API</b>	support	support	support	support	support
<b>Uninterrupted upgrades</b>	not support	not support	support	not support	support



01

## Quick Time to Market

- A basic setup can be done within 30 minutes
- Version upgrades can be done in a rolling fashion without affecting the business

02

## Easy and User-friendly O&M

- All O&M using the same web-based console
- Based on Linux, hardware friendly
- Everything is API, automated end to end

03

## Cost effective

- Pay once with future version upgrades included
- More out-of-the-box features without any additional cost

# Thanks !

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



Website  
[www.zstack-cloud.com](http://www.zstack-cloud.com)