

Une solution pour chaque environnement



SANGFOR

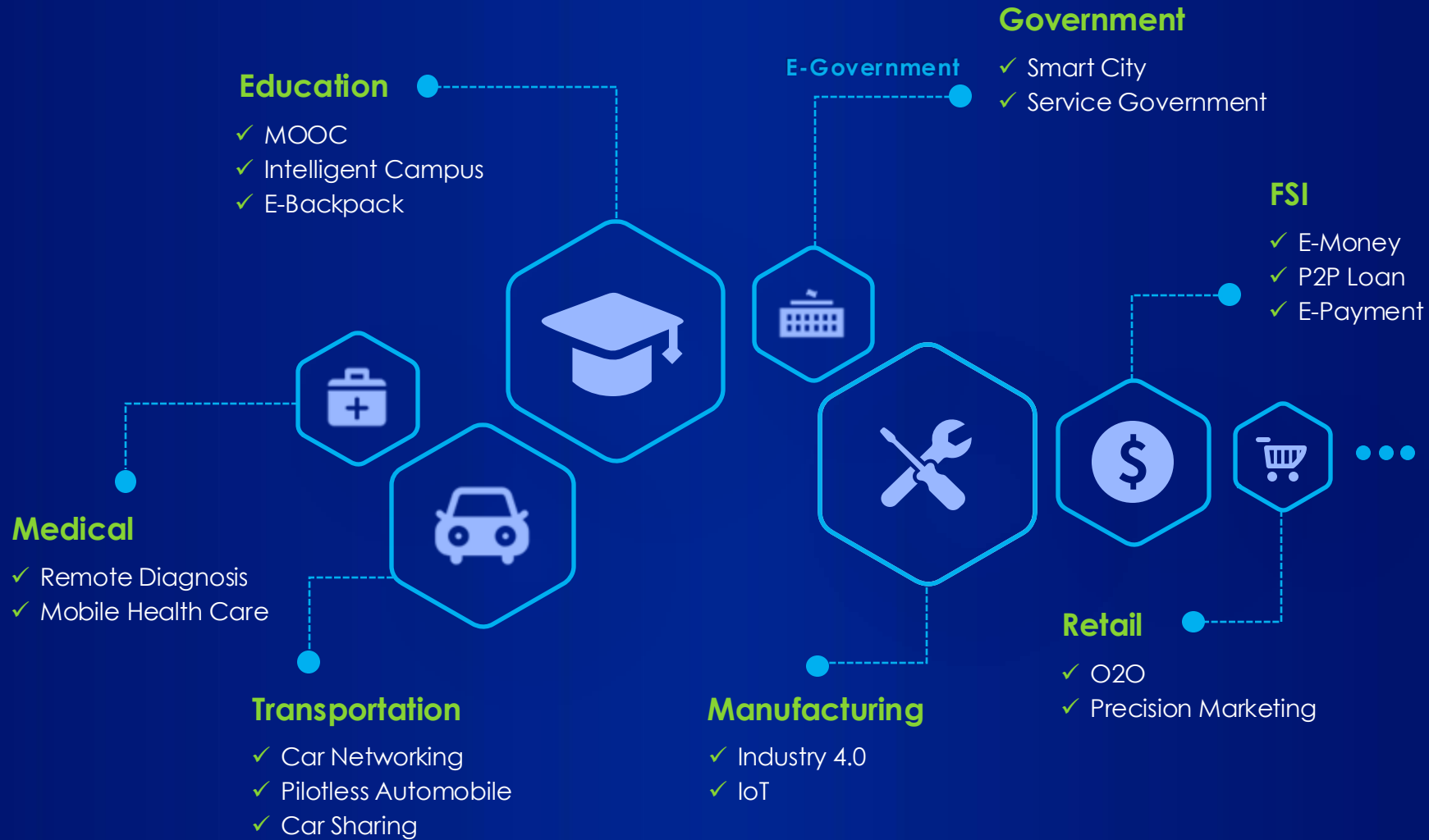


SANGFOR HCI

# Sangfor Hyper-Converged Infrastructure

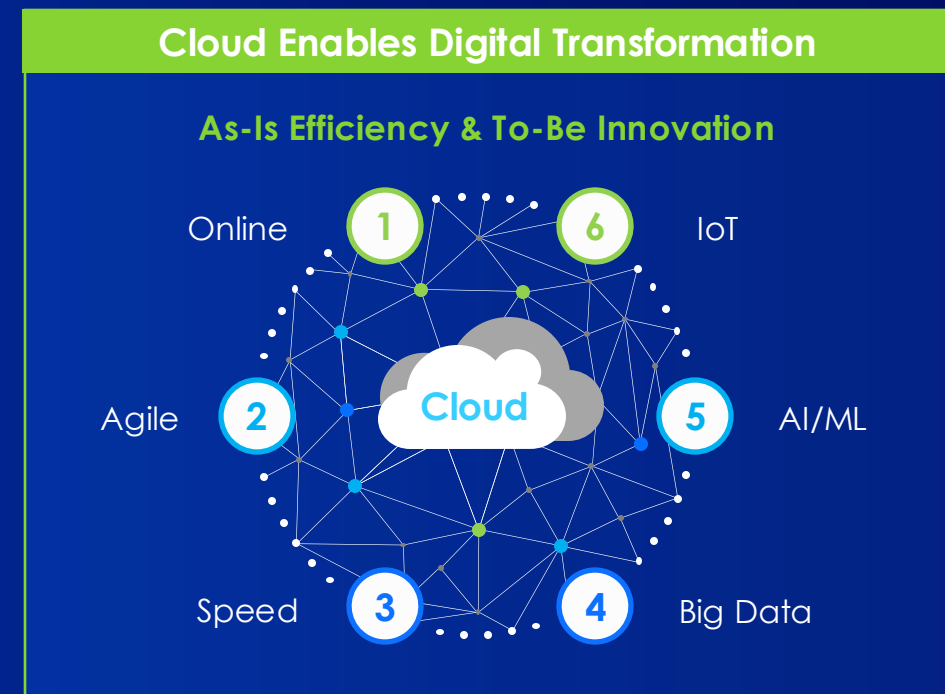
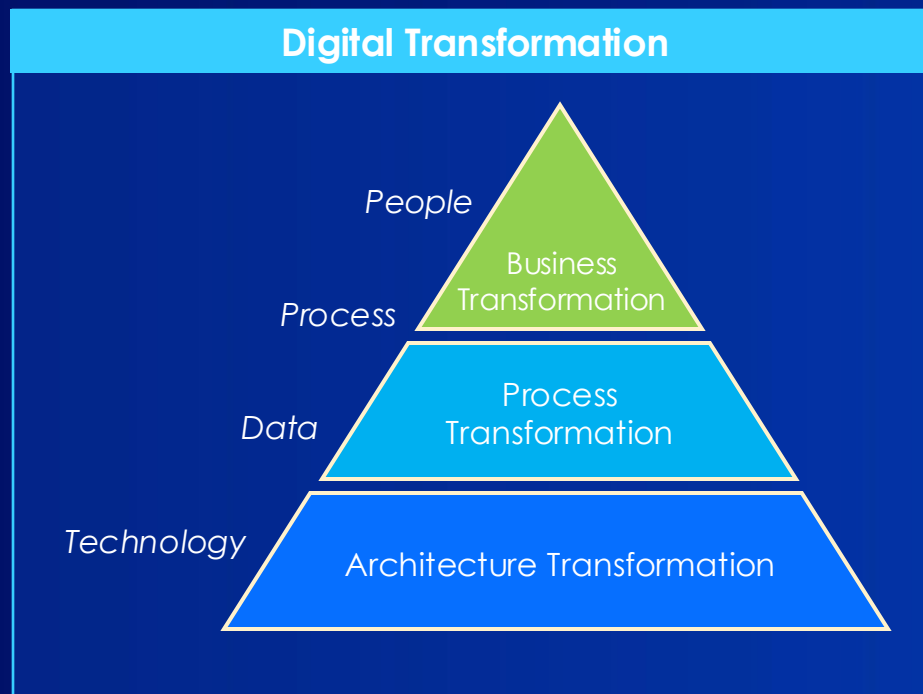
The Best Building Block for Your Future-Proof IT



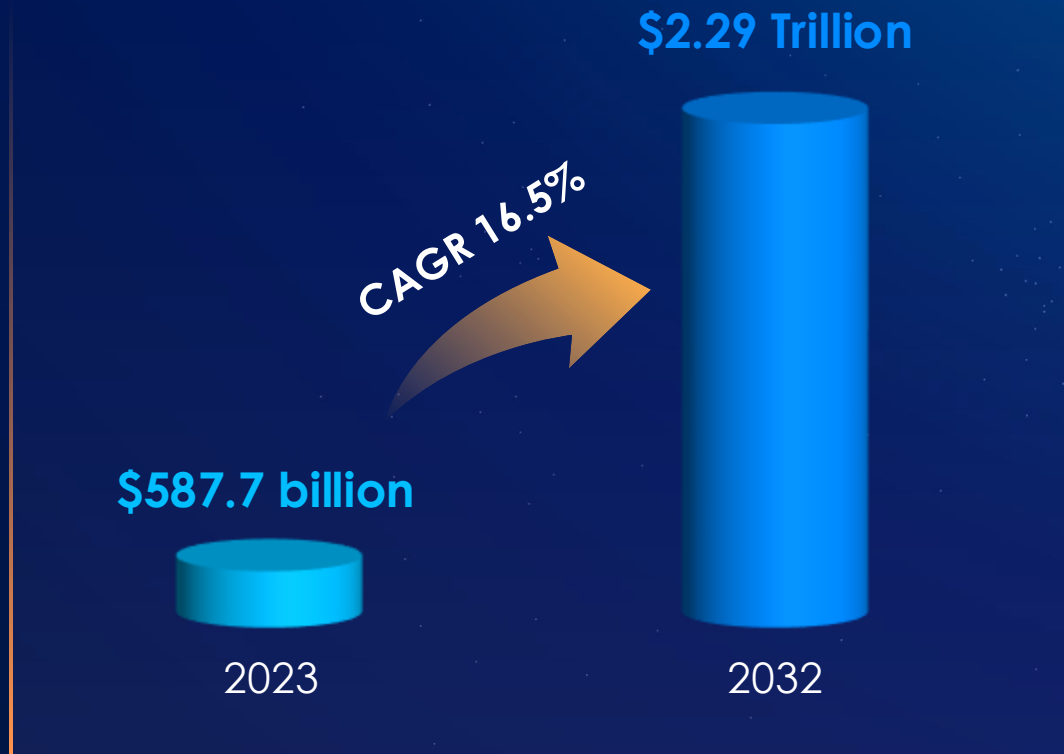


# Cloud Enables Digitalization

- 74% of organizations consider digital transformation a top priority, with cloud computing being a key component of these initiatives.
- The pandemic has accelerated digital transformation initiatives by an average of 6 years for 97% of companies, with cloud technologies playing a pivotal role in this acceleration.



# Generative AI Is The Key Driver For Cloud Spending



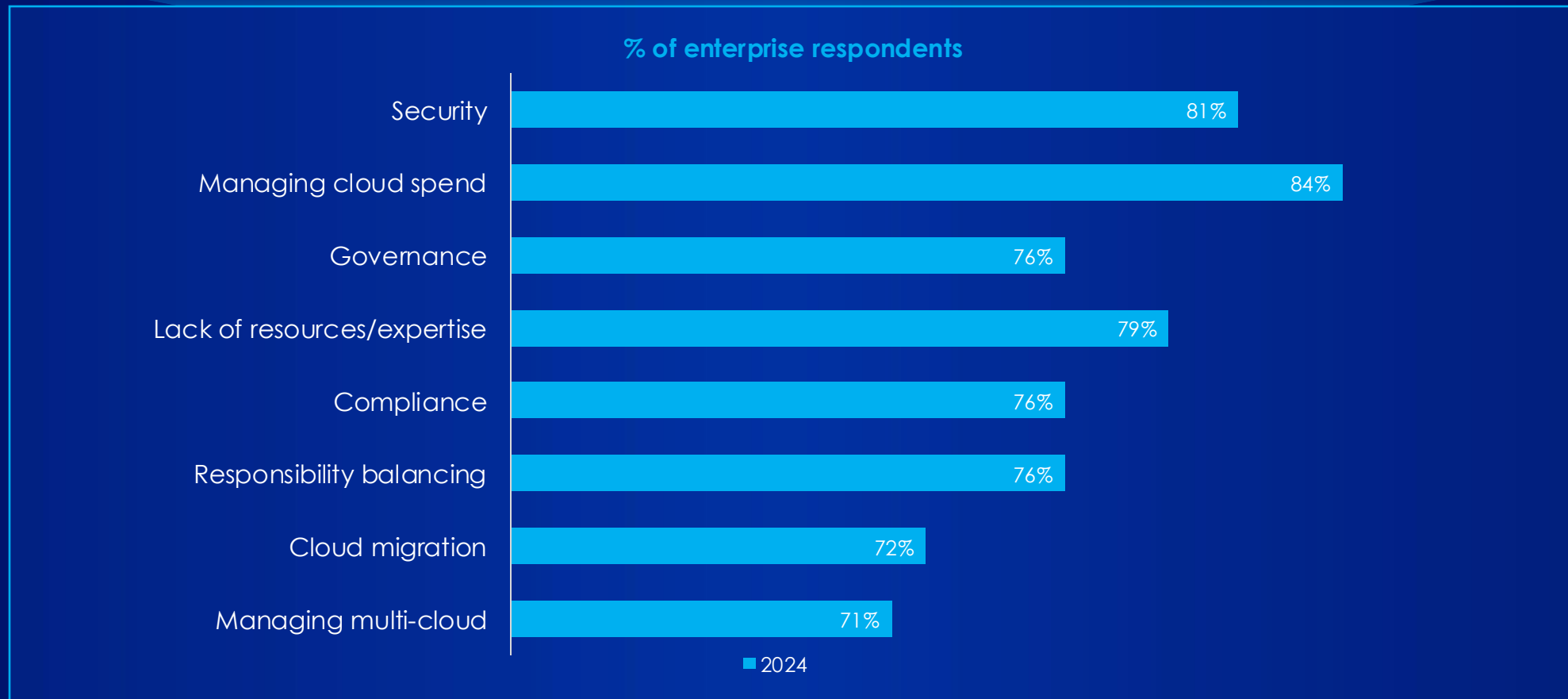
Global Cloud Market Value



AI Infrastructure

Data Source: Gartner & IDC

## Top Enterprise Cloud Challenges YoY



Source: Flexera 2024 State of the Cloud Report

# Sangfor Offerings: Transform Your Cloud Journey



Cloud Stacks Domain	On-Prem HCI-SDDC	On-Prem Private Cloud	Sangfor Hybrid Cloud	Off-Prem Managed Cloud Services (MCS)
<b>Consultancy</b>			Lightweight Consultancy (FREE)	
<b>Management</b>	HCI SDDC (FREE)	Sangfor Cloud Platform(SCP)	SCP (manage both Private Cloud & MCS)	Sangfor Cloud Center (SCC)
<b>Backup/ DR</b>	aDR/ hDR (Active/Standby DR)	aSC (Active-Active) CDP aDR/ hDR		Managed Backup/ DR Services BaaS/ DRaaS
<b>Security</b>	aSEC (vSecurity)	*Cyber-Guardians SOC Services aSEC		Managed Security Services SECaaS
<b>HCI Infrastructure</b>	aNET (vNetwork)	aNET	Nano Cloud (ROBO appliance)	KubeMgr Container
	aSAN (vStorage)	aSAN		IaaS (Shared/ Dedicated)
	aSV (vCompute)	aSV		
	aServer/ 3rd-Party	aServer/ 3rd-Party		
	aDesktop (VDI)	Ent Dist Storage (EDS)		SD-WAN
Legacy Physical	Virtualization	Private Cloud	Hybrid Cloud	Multi-Cloud

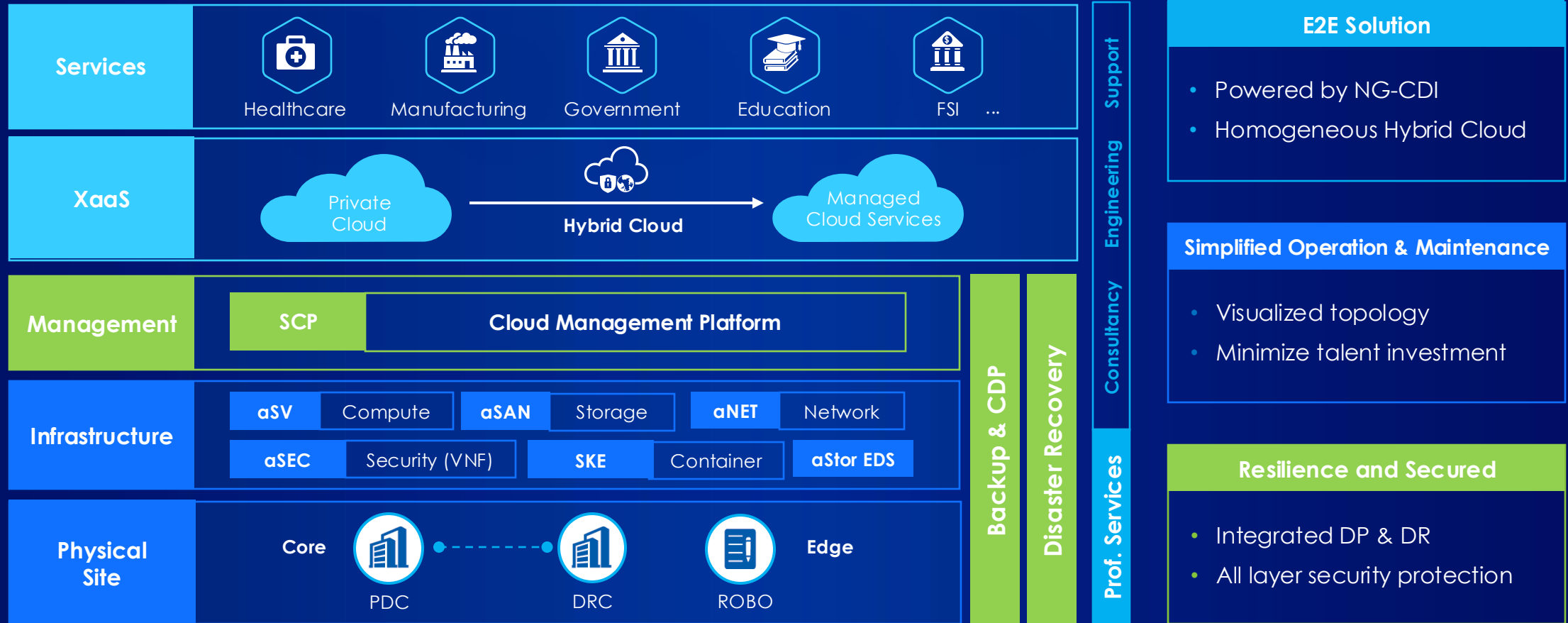
Remarks: Cloud Evolution & Cloud Stacks design variance by actual business case. \*Cyber-Guardians SOC Services only available in Malaysia now.

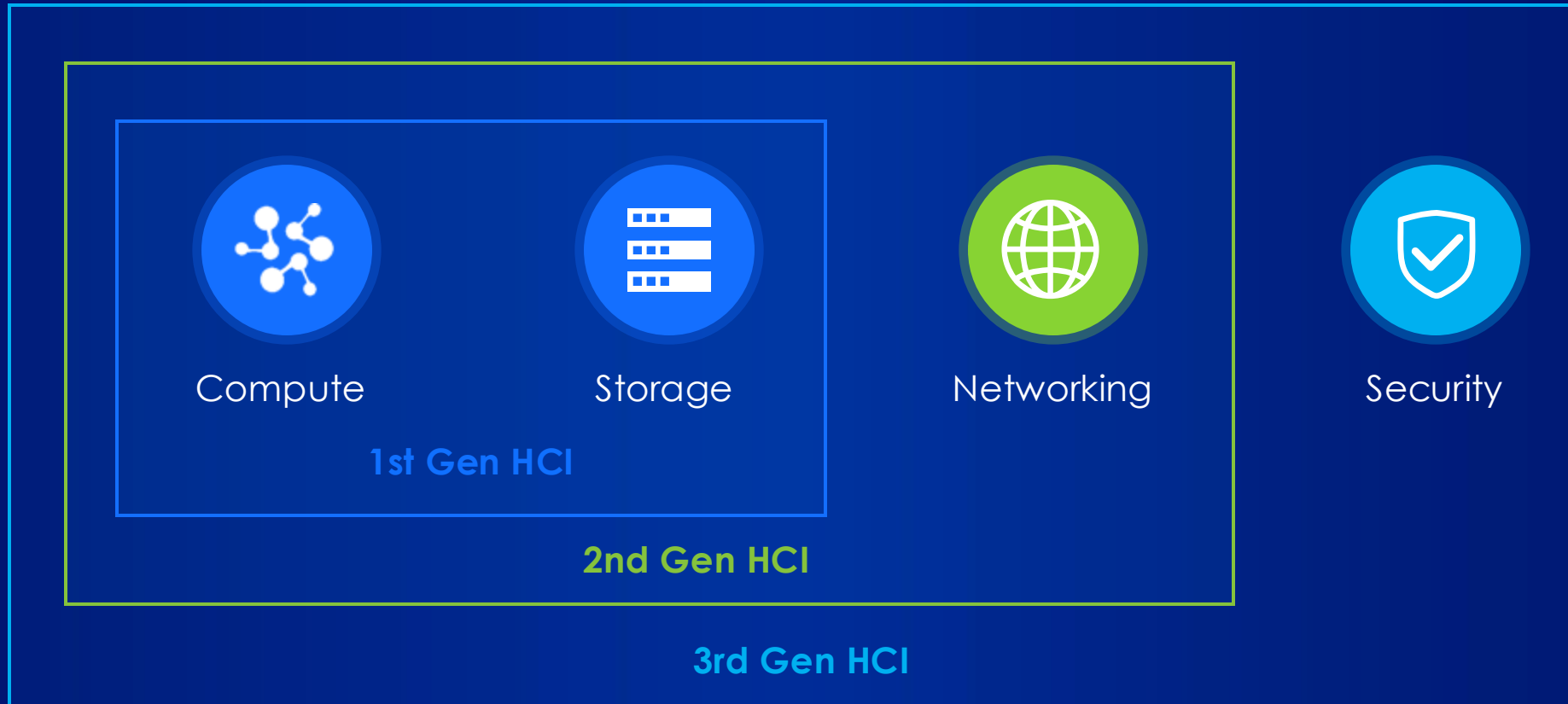
Cloud Evolution

# Sangfor Cloud Solution Overview



➤ Simplified, Secured and Value Optimized.





Sangfor HCI offers a one-stop software-defined infrastructure that enables customers to smoothly transition to a unified cloud that is ultra-simplified, highly performing, comprehensively secured and extremely resilient.



DB



Containers



SAP HANA

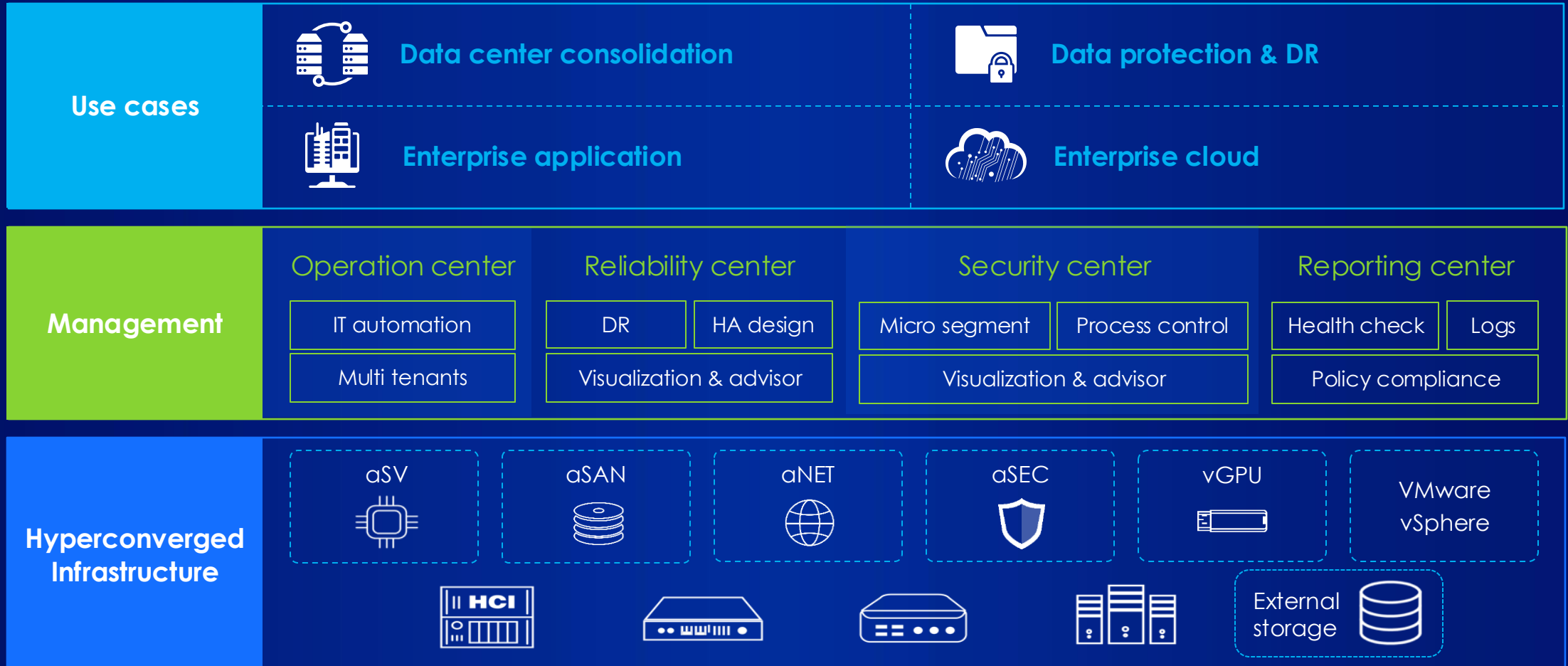


Big Data



AI

Next Generation Hyper-converged Infrastructure



# Key Business Requirements for IT Infrastructure



**Simplified**



**Stable**



**Secure**

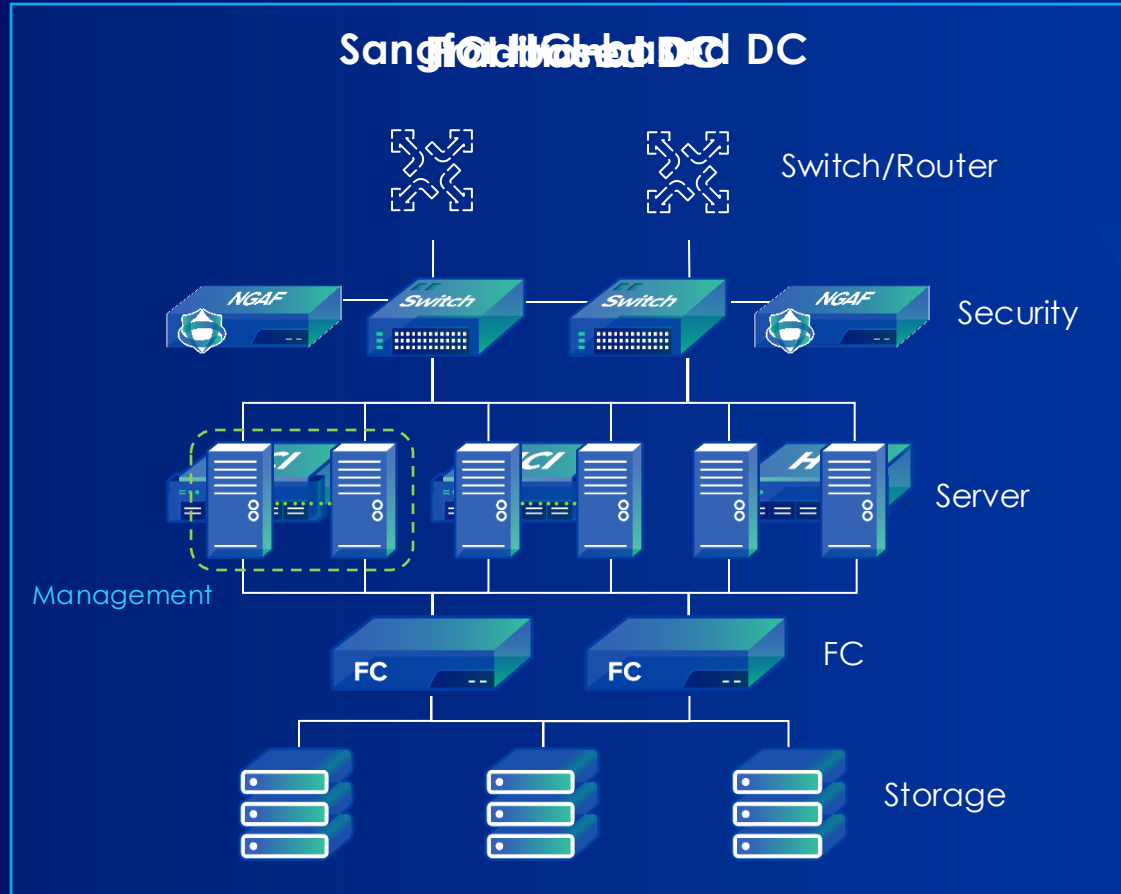


**High  
Performance**

# Simplified



# Sangfor HCI is Consolidating 3-tier IT



# Data Center at Your Fingertip

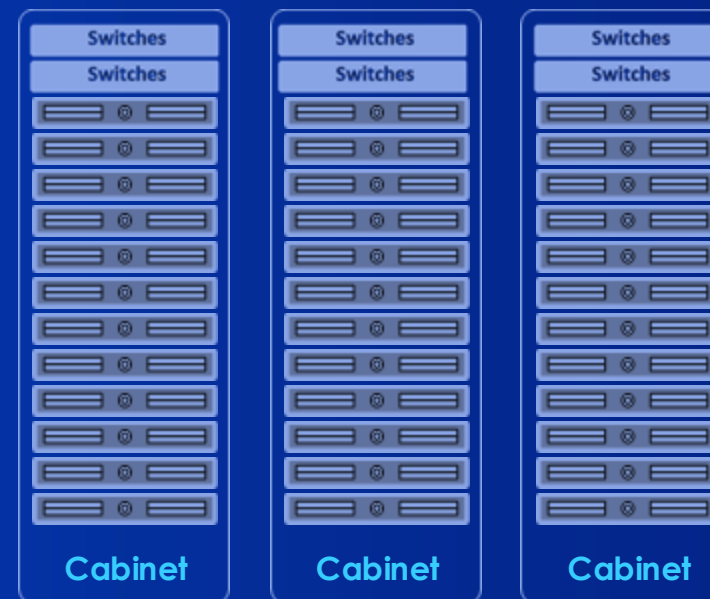
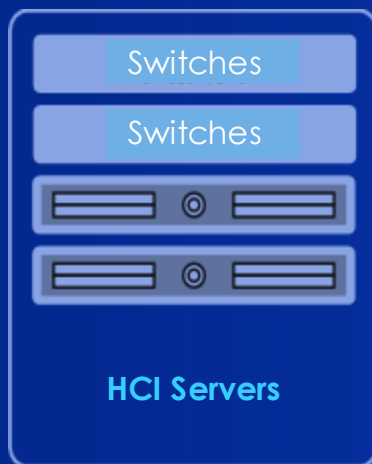


The screenshot displays the Sangfor HCI Network Management Interface. The main area shows a network topology diagram with the following components and connections:

- Edge1** (Edge) connected to **Trunk\_All** (Trunk) via a link labeled **20.20.20.20**.
- Trunk\_All** connected to **router1** (Router) via a link labeled **22.22.22.22**.
- router1** connected to **switch1** (Switch).
- switch1** connected to **App\_Svr\_1** (App Server) and **DB\_svr\_2** (DB Server).
- redhat** (Server) connected to **Trunk\_All**.
- NGAF1** (NGAF Appliance) is shown as a separate device.

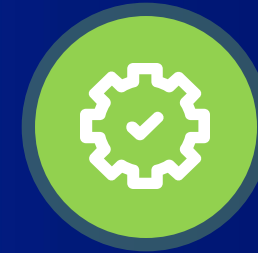
The right sidebar displays the **Summary - Network Devices** table:

Device Type	Count
Edges	1
Switches	1
Routers	1
ADCs	0
NGAF Appliances	1 / 1
IAM Appliances	0
SSL VPN Appliances	0
VMs	0 / 3
Running	4
Stopped	3
Alarms	1
Failed	0
Not Applied	0
Applying	0

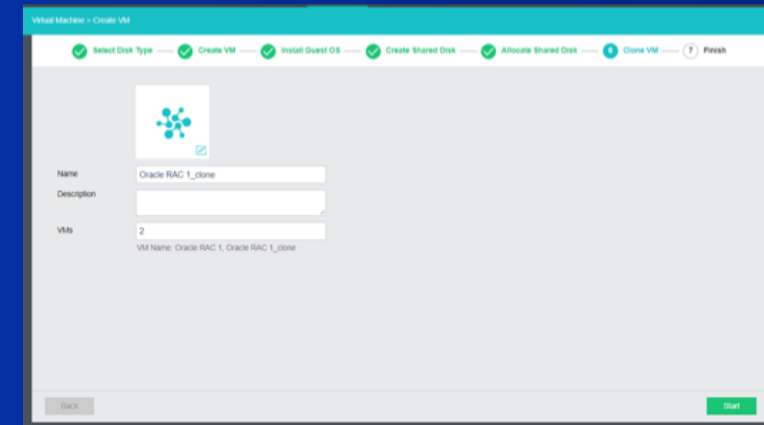


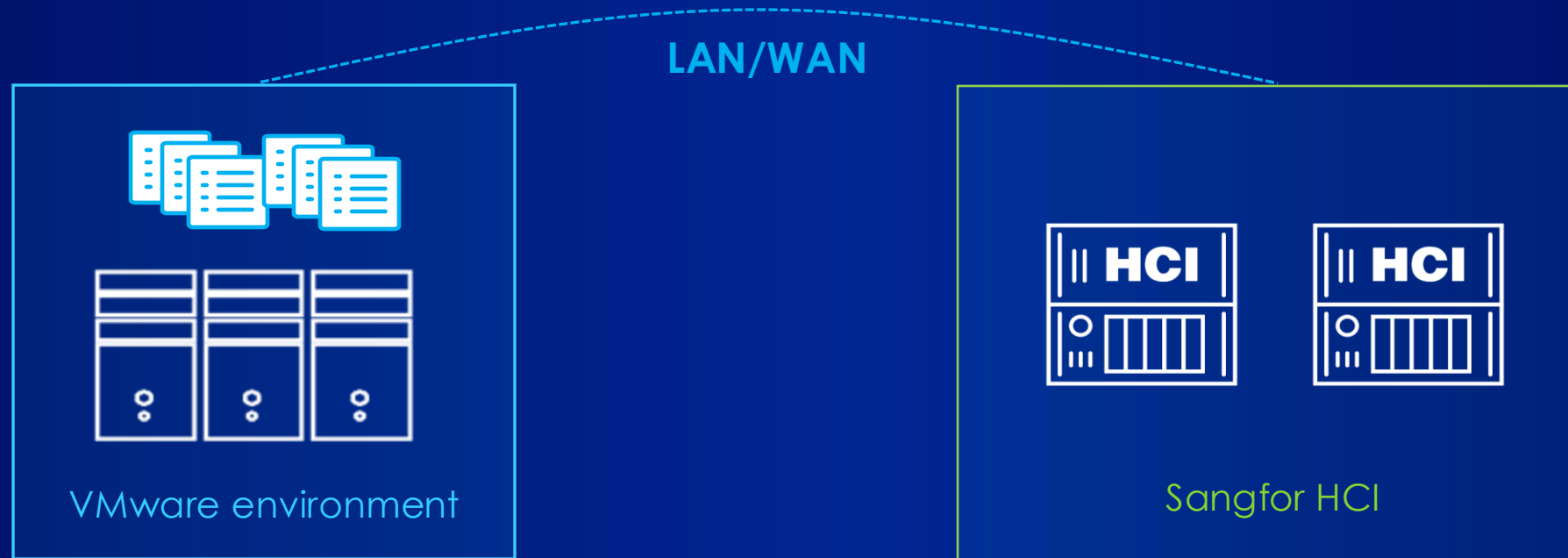
- ☹️ Pre-investment 3-5 years in advance
- ☹️ Data migration for expansion
- ☹️ Performance bottle neck

- 😊 Start with only 2 nodes
- 😊 Expansion without down time
- 😊 No capacity limitation

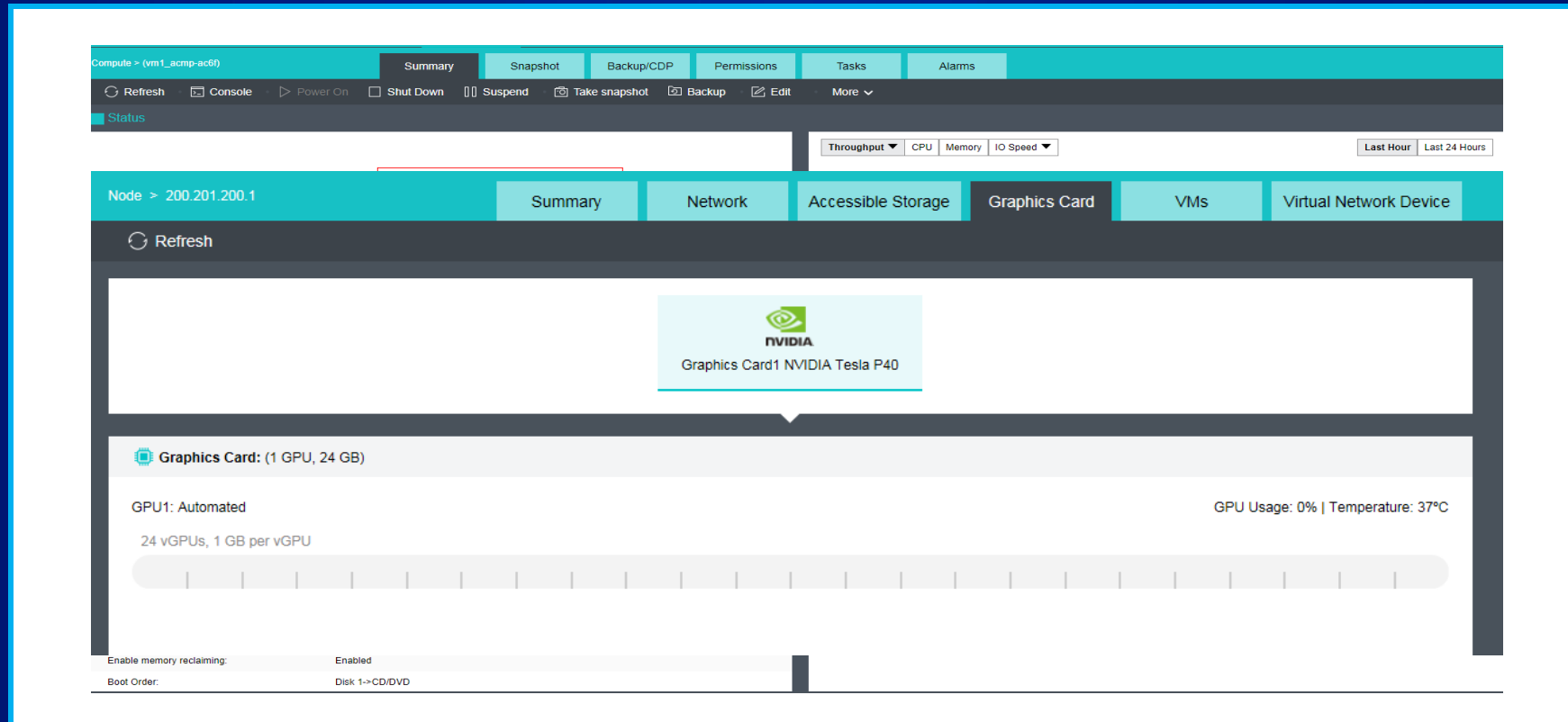


## 6 steps to launch Oracle RAC cluster



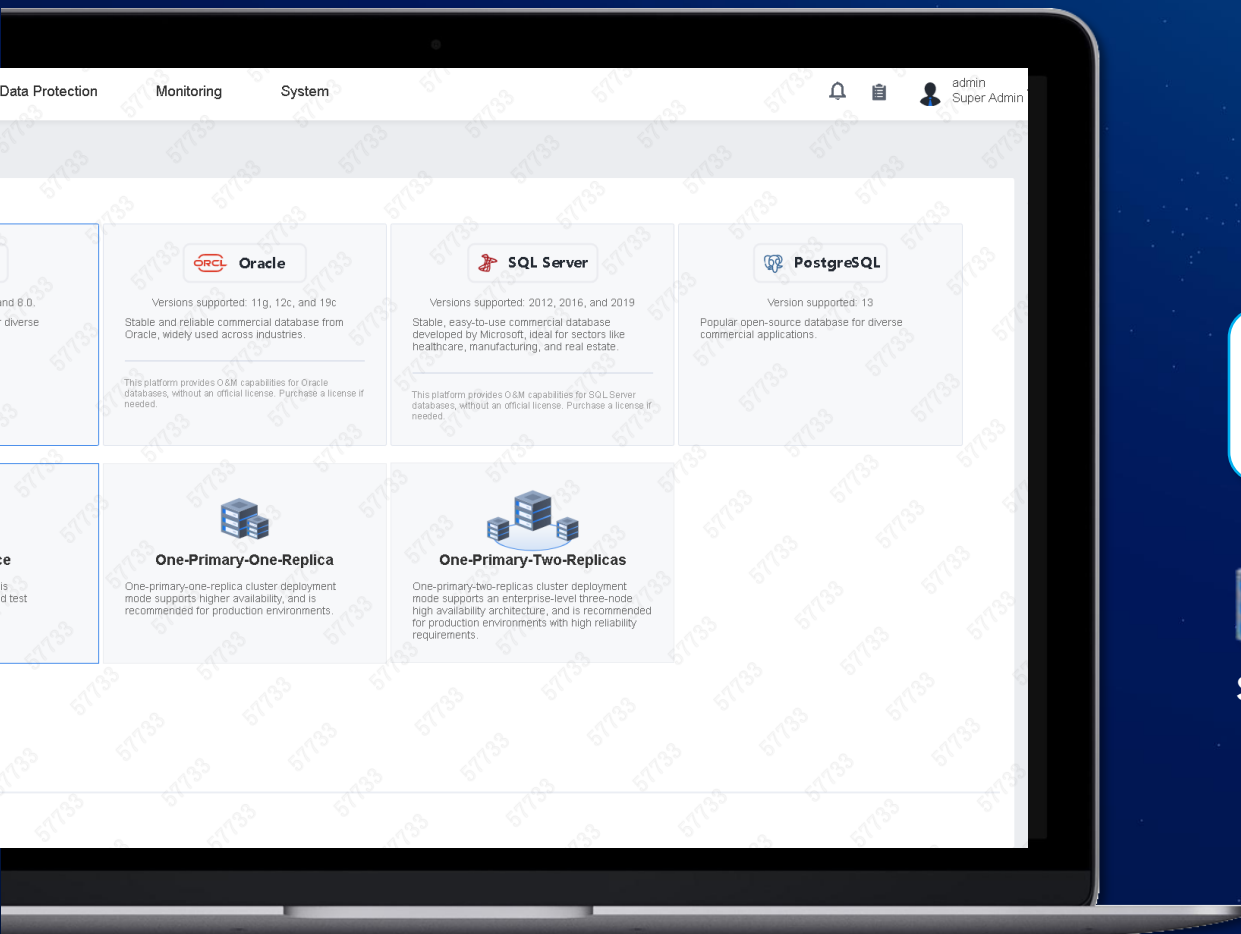


- 😊 Built-in VMware lifecycle management
- 😊 Bi-directional migration
- 😊 Built-in backup from VMware to Sangfor & instant recovery
- 😊 VMware vSphere 7.0 Support

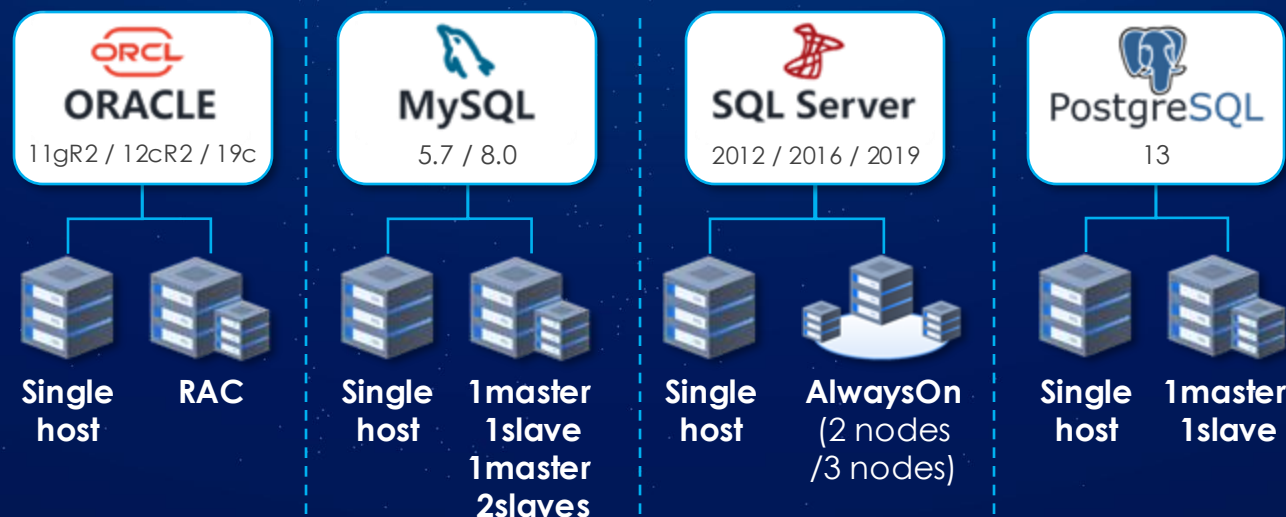


1. Visualized management for GPU, demonstrating GPU utilization in real-time
2. Dynamic display of current GPU's resource assignment to optimize distribution and utilization

DMP is deployed on SCP and supported on version 6.10.0 and later only.



You can **create new database** instances as well as **manage existing databases** with Sangfor DMP.



# Unified Platform for Both VM and Container

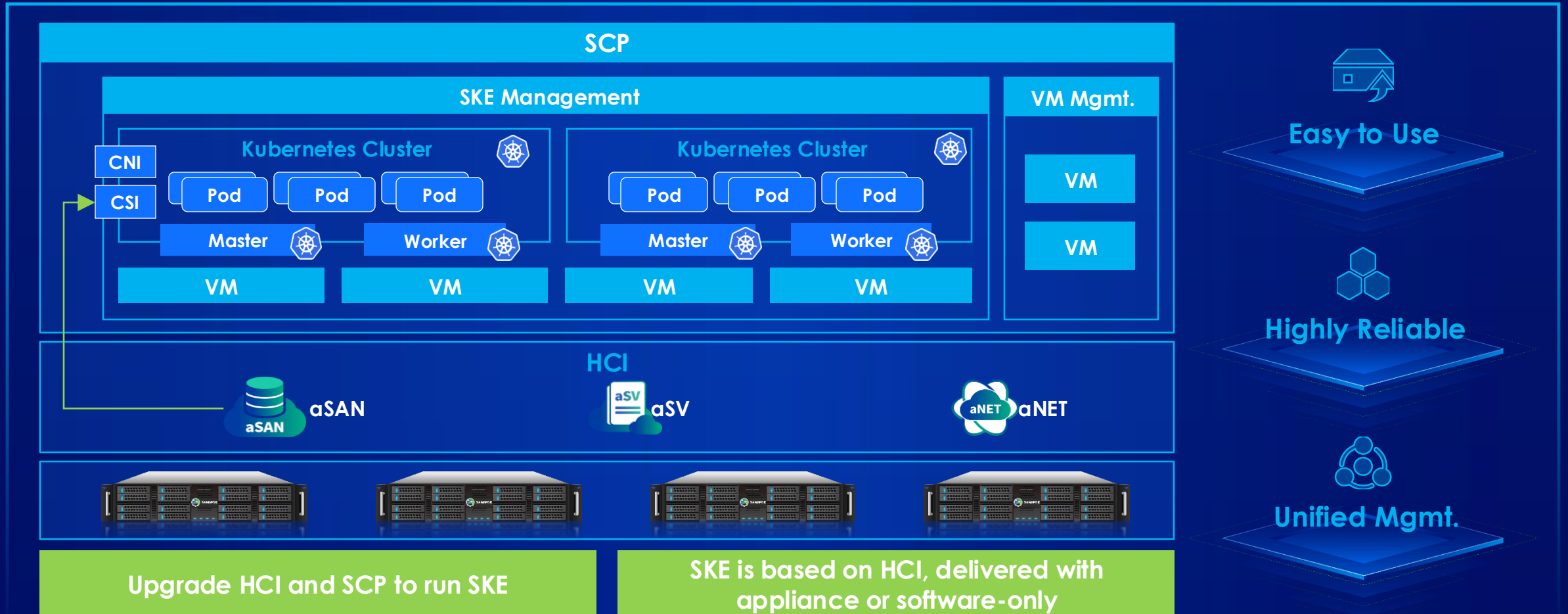


Cloud-native

- MES
- E-com.
- Internet

Traditional

- Oracle
- MySQL
- OA



- Easy to Use
- Highly Reliable
- Unified Mgmt.

# More Simplified in Management

## HCI + VDI

SCP unified management



VDC

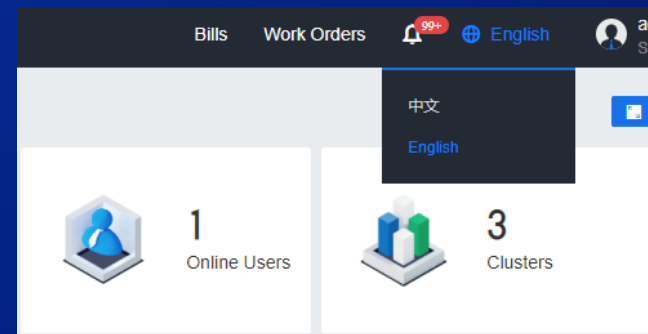
Business VMs

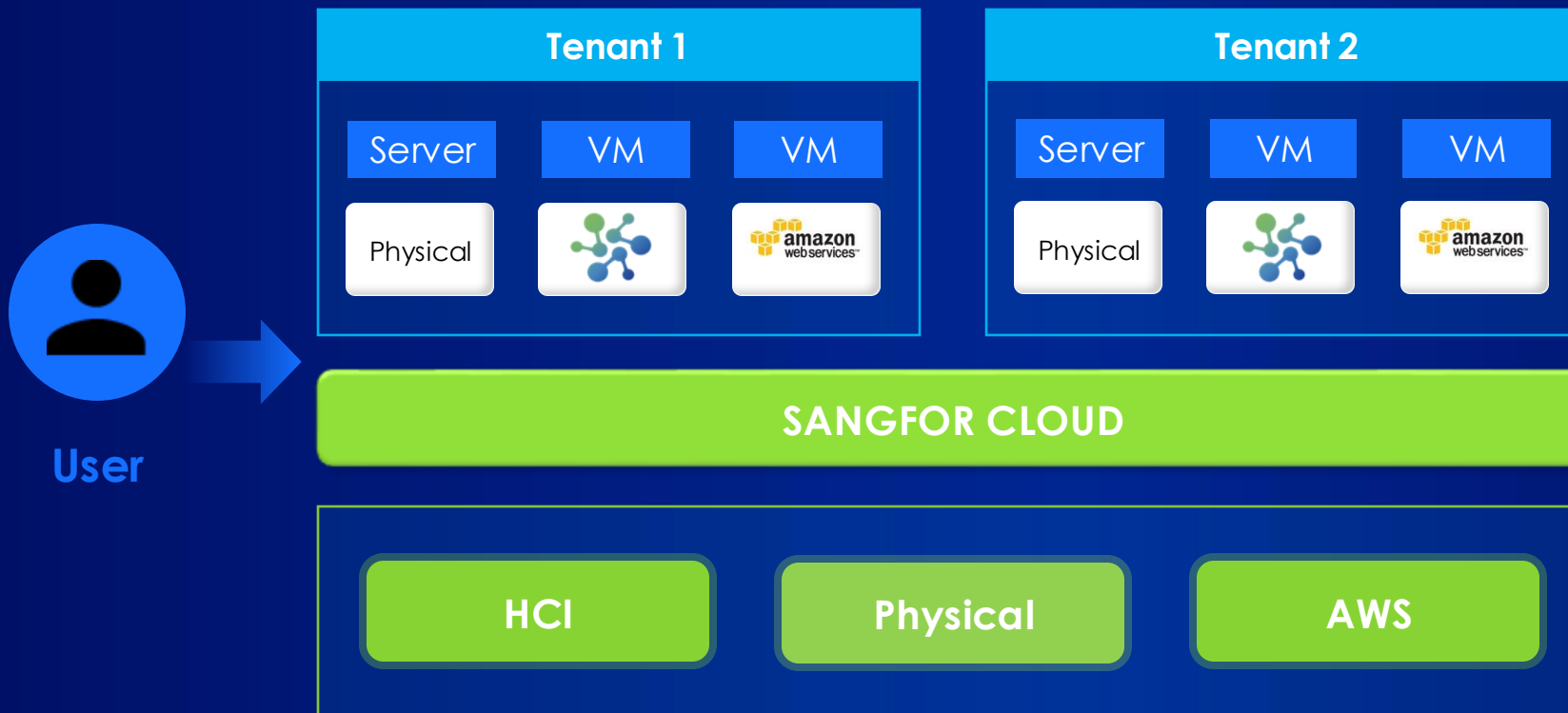
HCI cluster

## CLI support

```
PS D:\Users\Sangfor\Desktop> powershell -Command "Get-VM -Name 11-huncu-dev"
CoreoVeeSocket Id Name NumCpu PowerState
-----
2 873288542254 4096 Qu-语言/云迁移(10.103.200.3) 1 1
4 897881631064 4096 ITServer(200.3) 1 1
2 59187922538 4096 Ucayun(10.102.200.1) 1 1
2 2745918281514 2048 linlin-eechar7 1 1
2 418886525626 2048 windows7(10.102.200.6) 1 1
2 220525291170 2048 windows7(10.102.200.7) 1 1
4 1718892102966 8192 aGMP(10.103.200.5) 1 1
8 4630136327480 16384 L1111 1 1
2 3942859182379 2048 CentOS7 1 1
4 5274949358176 2048 CentOS7(HCI6.7.0-编译环境10.103.200.6) 2 2
4 439449764546 2048 HCI6.7.0-编译环境(10.102.200.6) 2 1
2 299910677962 2048 HCI-编译环境模板 1 1
2 1322322316278 4096 Manage19 1 1
2 7262983359048 2048 aCluu3598编译环境0001 1 1
8 813895558270 16384 cdevIccfwscw 1 1
8 2152791237624 16384 ddd 1 1
2 2401925807990 2048 de3kan7_B(Guesty) 1 1
1 883271487332 4096 11-huncu-dev 1 1
4 7626162259400 2048 Isy with docker(200.0) 1 1
1 654929209521 3072 share-mirror-常开-可短暂关闭 1 1
1 125286018894 1024 test 1 1
1 730949358172 1024 test0615 1 1
1 2539060912 1024 test2 1 1
2 639796586700 2048 test3 2 2
2 4955128597622 2048 test4 2 2
2 4000028109068 2048 test5 2 2
2 8052825431218 4096 ommu 1 1
4 67218076540 3072 update_vm_best 1 1
```

## Dual language support





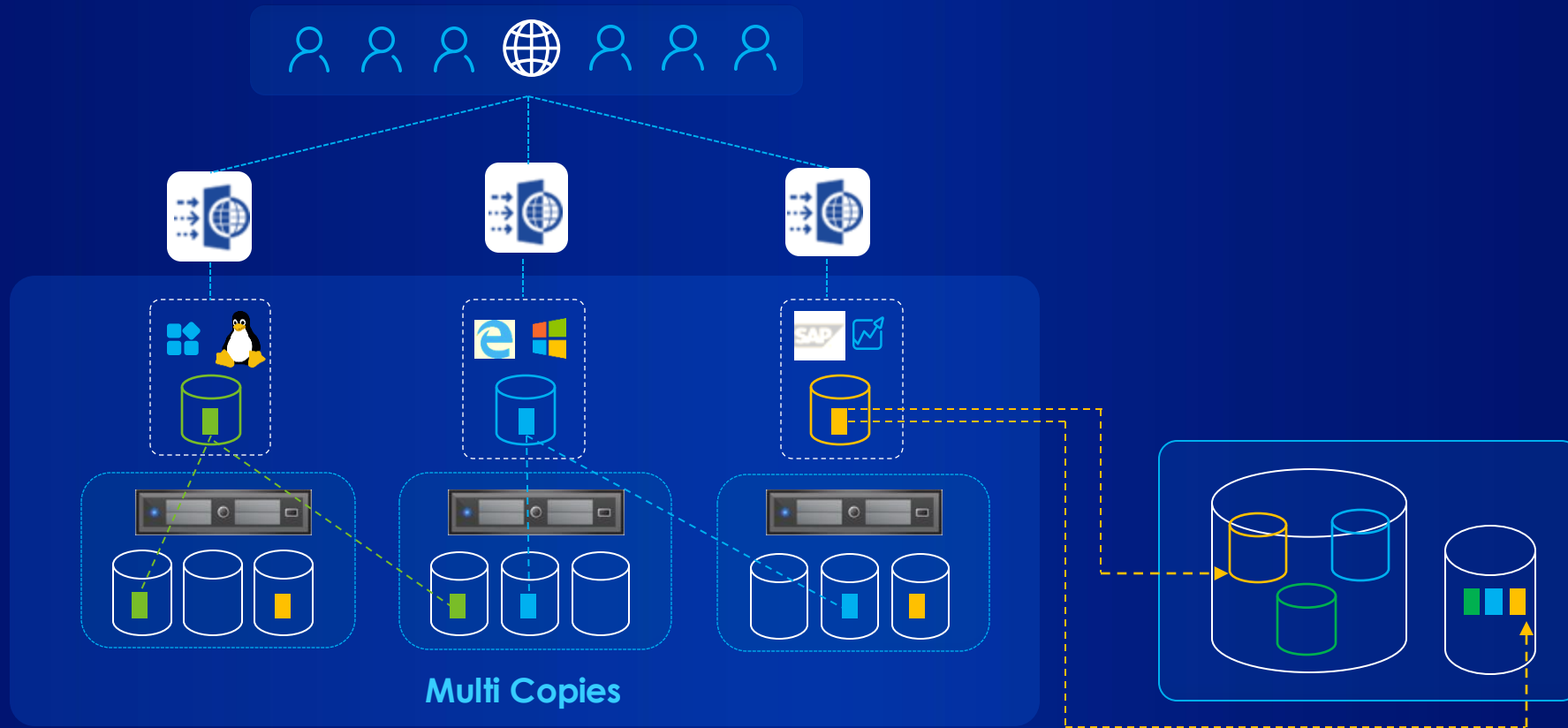
## Unified mgmt. for hybrid cloud and multi-cloud:

- Consistent IaaS user experience between physical, private cloud and public cloud.
- Each tenant can only see and manage its own cloud resource, simplified O&M with guaranteed isolation

# Stable

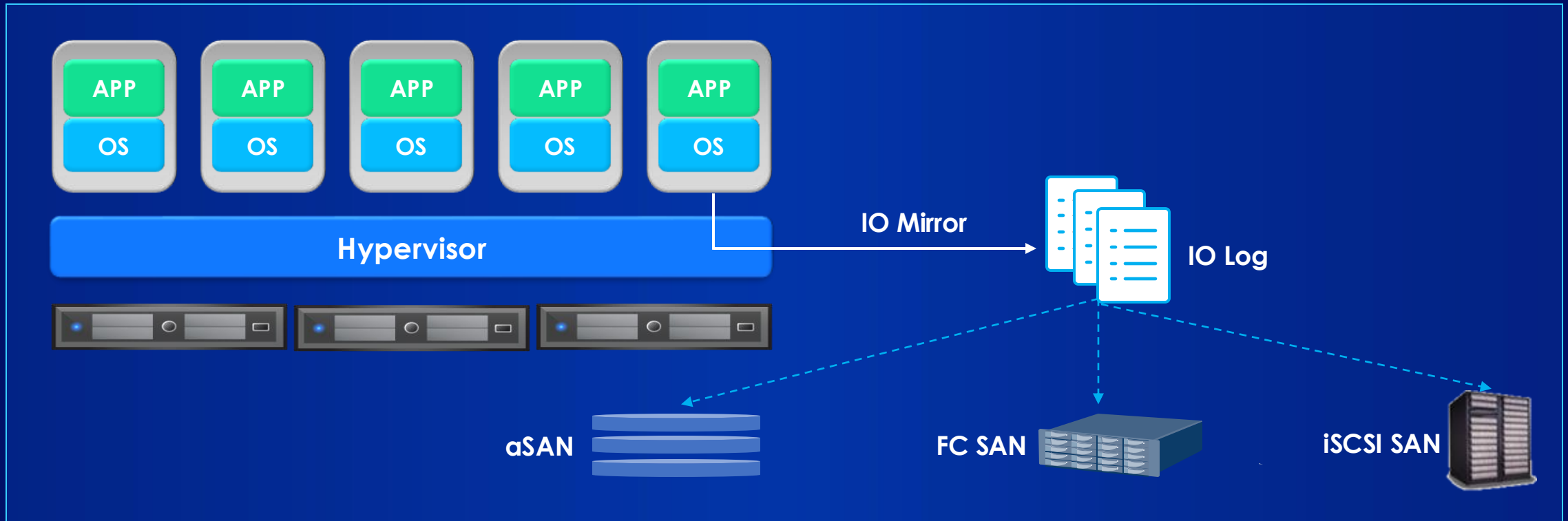


# Multi Copies & Built-in Backup



- ☹️ Single point of failure
- ☹️ Additional backup software required

- 😊 Inherent multi copies design
- 😊 Built-in backup feature with RPO=1 hour



😊 Built-in advanced data back up

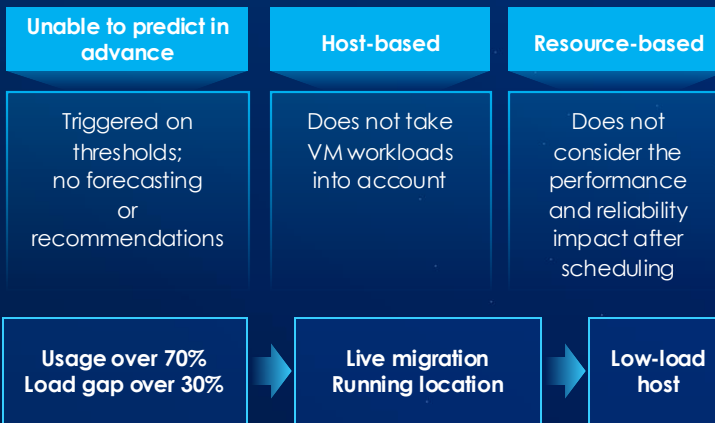
😊 RPO≈0. RTO≤5 Min

# DRS 2.0: Proactively Intelligent



- Dynamic Resource Scheduling (DRS) is a technology used for balancing and scheduling cluster resources. By monitoring the resource usage of each host, DRS promptly migrates VMs to avoid resource hotspots or uneven loads, ensuring business continuity.

## DRS 1.0: Load balancing of hosts is paramount



CPU/RAM over threshold

Triggered



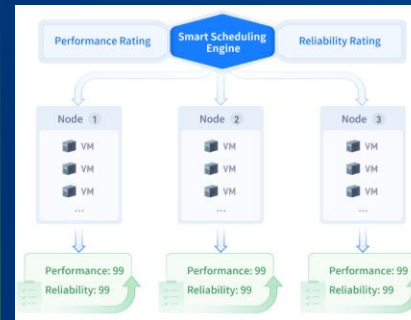
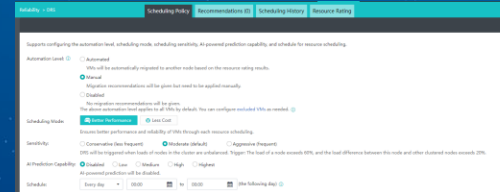
Execution



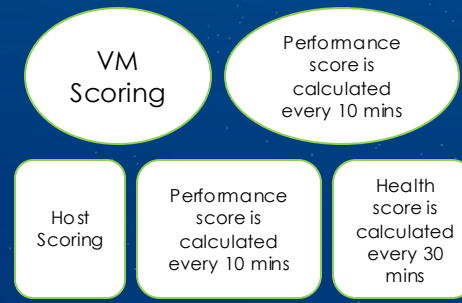
Migrate

## DRS 2.0

- Load balanced
- High reliability
- Minimal impact
- No performance degradation



Intelligent scheduling can be applied to either on-premises or cloud-based hosts based on the historical resource data from the past 5 days and the estimated future load for the next 2 hours.



To optimize DRS effectiveness and ensure business continuity, scheduling considers scores from two dimensions: hosts and VMs.

Performance & Reliability Scoring Parameters (Partial)	
Factor	Parameter
CPU	CPU actual usage/expected usage, logical cores
RAM	Actual RAM usage, swap partition size, CE qty., CE storm, UE error
Network	Packet loss/error rate
Storage	Replica location, disk usage
RAID	RAID card reset/backplane and SAS cable alert
Disk	HDD bad sectors/irreparable sectors, SSD life
	Disk overheat, failure alert

A comprehensive scoring system based on detailed metrics ensures that business reliability remains high and performance improves after migration.



Intelligent Live Migration



# HA 2.0: Proactive Reliability

➤ HA (High Availability) is an effective solution for ensuring business continuity in virtualized clusters. It aims to minimize the impact on business operations when system software or hardware failures occur.

## HA 1.0

Bottom-line function to ensure business continuity when failure occurs

### Passive Response

It primarily focuses on handling failures when they arise and is unable to address potential risks.

### Limited Scope

Only considers data and resources. However, failure could occur due to extreme scenarios.

### No Detection

Lack of monitoring and assurance of HA conditions.

### Failure Detection

- Server power outage
- Motherboard component failure
- Storage service failure
- Business network failure



### Response Mechanism

- Kills the process on the source end
- VM restarts on a new host



### Target Host

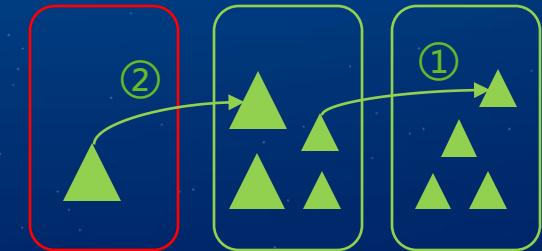
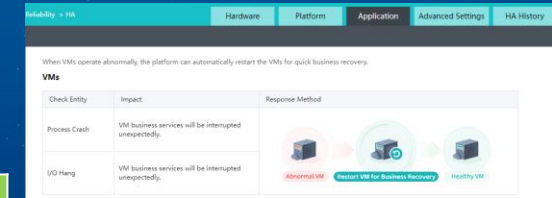
- Replica available
- Sufficient CPU resources
- Remaining configurable memory is greater than the VM



## HA 2.0

- ✓ More comprehensive detection dimensions
- ✓ More proactive response actions
- ✓ More intelligent scheduling methods
- ✓ More visualized operation and maintenance records

Anomaly	Impact	Response
Low CPU microcode version	Host is at risk of failure	Intelligent live migration
Persistent CPU overheating	Host is at risk of failure	Intelligent live migration
Memory ECC errors	Available memory resource decrease	Intelligent live migration
OS disk lifespan ends	May lead to host going offline	Intelligent live migration
Only 1 power module remaining	May lead to host going offline	Intelligent live migration



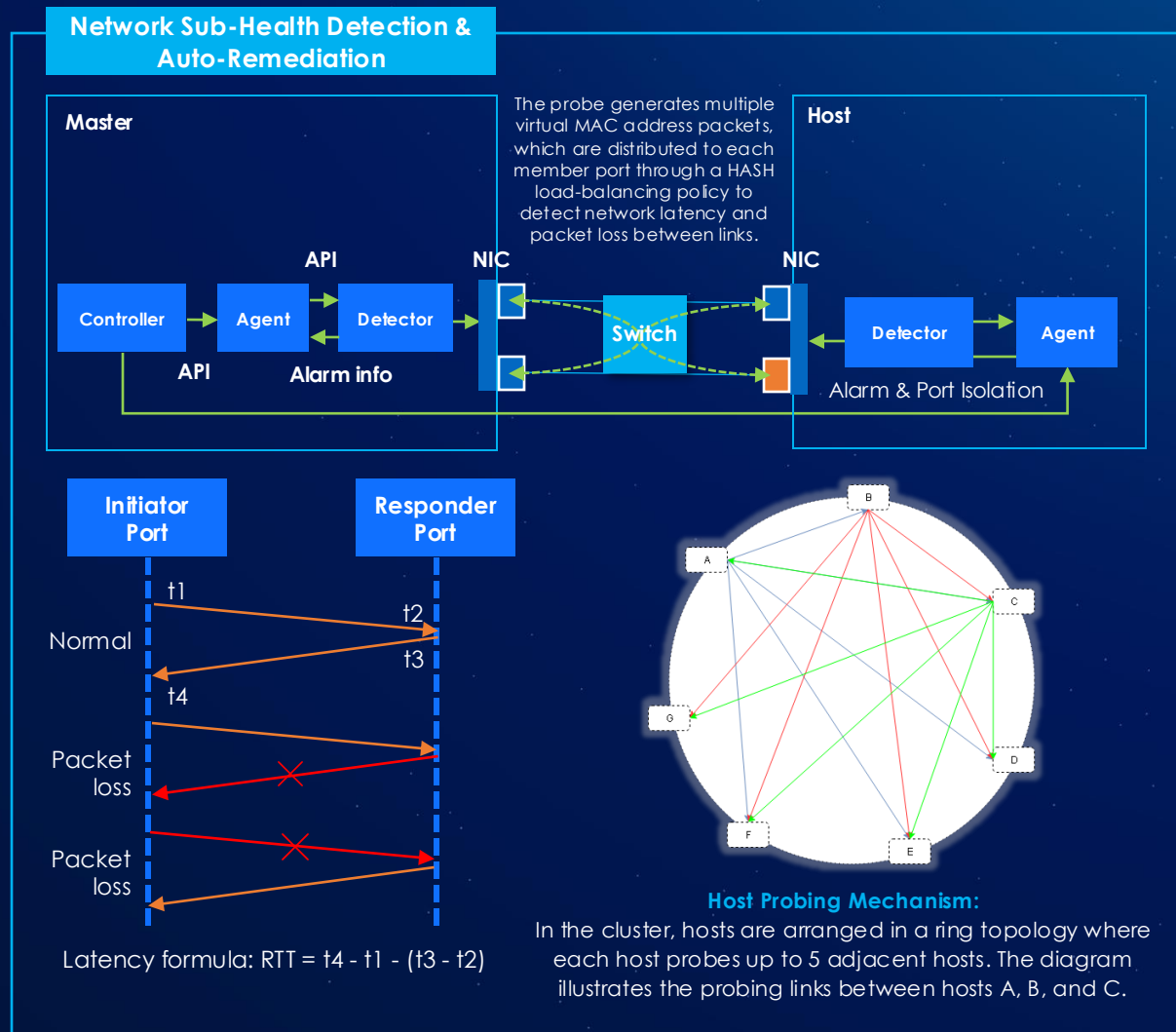
Proactively handles suboptimal health states through detection instead of passively migrating when failures occur

Intelligently predicts and reallocates host resources based on resource demands instead of experiencing direct HA failures



Intelligent Live Migration



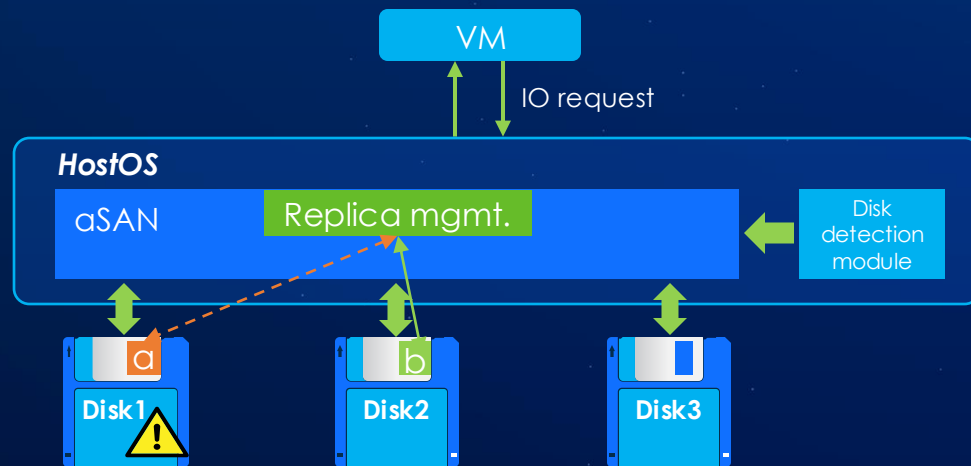


- Link aggregation provides protection against scenarios where port failures or optical module unavailability directly cause single-link failures by automatically switching to redundant links. However, it does not address network performance anomalies caused by optical attenuation - such as latency or intermittent connectivity - and continues to use the degraded link for packet transmission, ultimately resulting in service slowdowns. These issues are particularly challenging to diagnose, requiring significant troubleshooting time and resulting in prolonged business impact. Sangfor's network sub-health detection technology addresses this by generating multiple virtual MAC address packets that are distributed across member ports via a HASH load-balancing algorithm. This method proactively measures inter-network latency and packet loss to rapidly identify problematic links.
- The detection process works as follows: The initiating HCI physical network port sends probe requests, which are received and responded to by the destination HCI host. If the initiating port receives the corresponding response packet, the probe is considered successful with no packet loss. Failure to receive a response is recorded as packet loss. When port latency or packet loss exceeds predefined thresholds, the system evaluates whether remediation conditions are met and executes appropriate actions when thresholds are breached.

	LACP	Non-LACP
Storage Ports	Remove faulty port from the aggregation group	Shut down the faulty port
Non-Storage Ports	Remove faulty port from the aggregation group	For active/standby aggregation: Shut down the port Other aggregation modes or standalone non-aggregated ports: No action taken

## Storage Virtualization Sub-health Detection & Automated Remediation

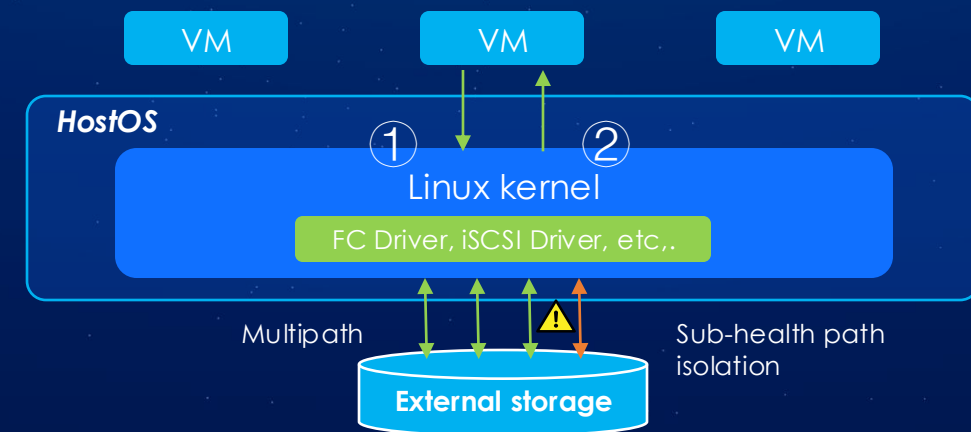
- In **storage virtualization**, a **new service I/O latency awareness module** has been introduced. This module determines disk sub-health status by analyzing I/O latency combined with disk detection results. When identifying slow I/O replicas, it forcibly returns results to prevent service slowdown while **silently handling the affected replica**. Subsequent I/Os are configured by default to avoid reading from this replica. However, before Disk 1 is micro-isolated, replica A can still be read if another replica B becomes abnormal. Compared to current industry practices that only detect disks, this mechanism offers three key advantages: **timelier slow I/O processing, smaller impact scope, and more accurate identification**.



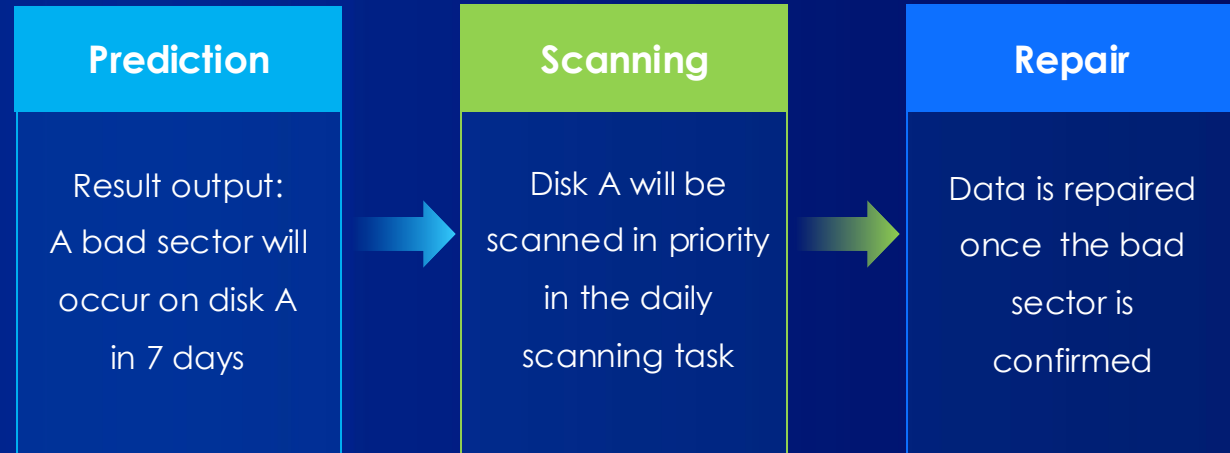
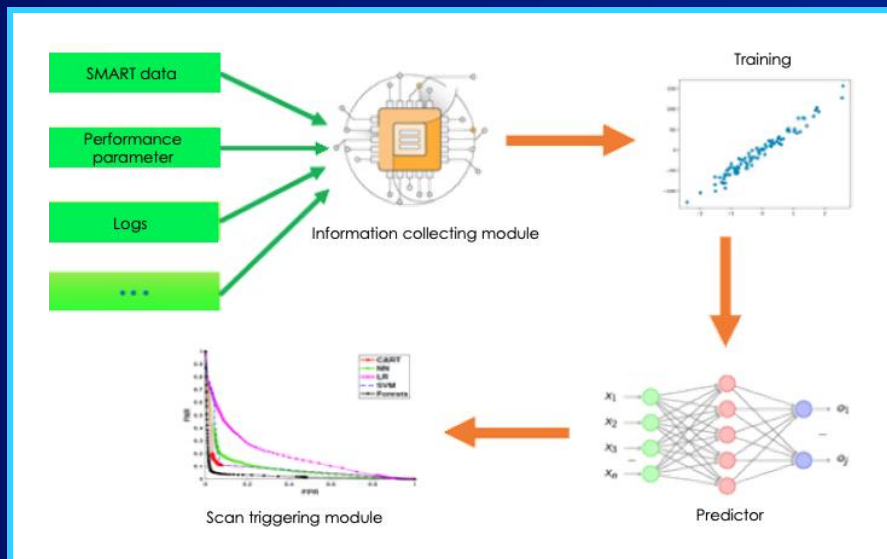
a/b represents two replicas of the same data

## External Storage Sub-health Detection & Automated Remediation

- The system actively collects storage I/O latency statistics for every path of each LUN **at the kernel layer** (reference diagram location ②→①), enabling **high-accuracy identification** of storage performance degradation.
- Automated Sub-health Path Handling For identified sub-healthy external storage paths, the system executes:
  - **Alerting** - Immediate notification of path anomalies
  - **Intelligent Isolation** - Enforces two critical safeguards:
    1. **Never exceeds 50% isolation of available paths**
    2. **Always maintains at least one active path**
- This dual-protection mechanism ensures minimal business impact during remediation.



# Disk Bad Sector Prediction And Repair (with aSAN)



➤ The time it takes to discover bad sector is reduced from **weeks** to **1 day**, minimizing data loss risk.

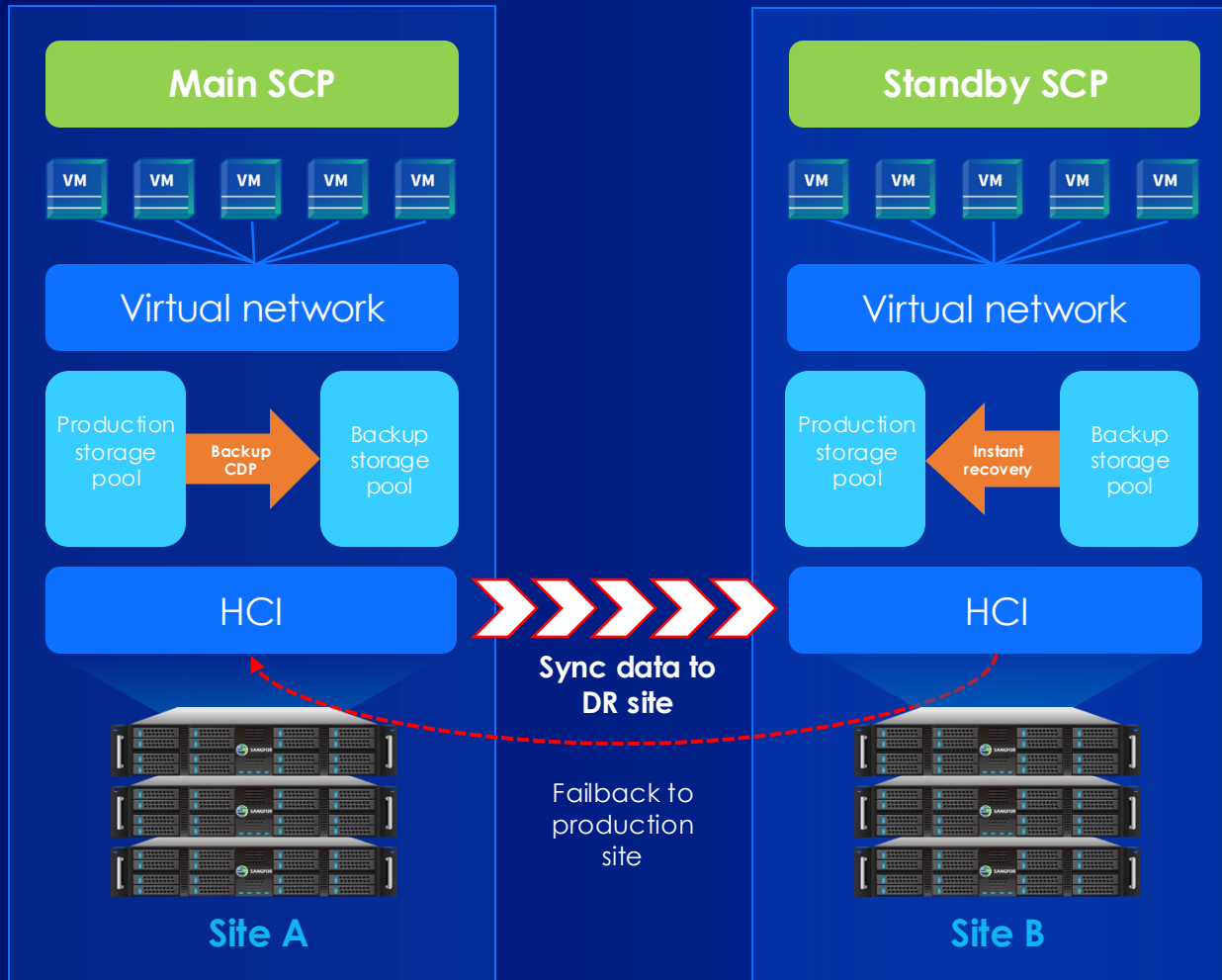
# Sangfor Disaster Recovery Management (DRM)



On-Premise DR	Cloud DR	Planned Migration	Disaster Avoidance	Planned Downtime	Inter-site Load Balancing
Active-passive disaster recovery		Active-passive disaster recovery		Active-active stretched cluster	
Heterogeneous DR (hDR)		aDR		aSC	
hDR Management		SCP			
3rd-party Server/ Hypervisor/ Cloud		Sangfor aSV/aSAN/aNET/aSEC			
x86	x86	x86	x86	x86	x86

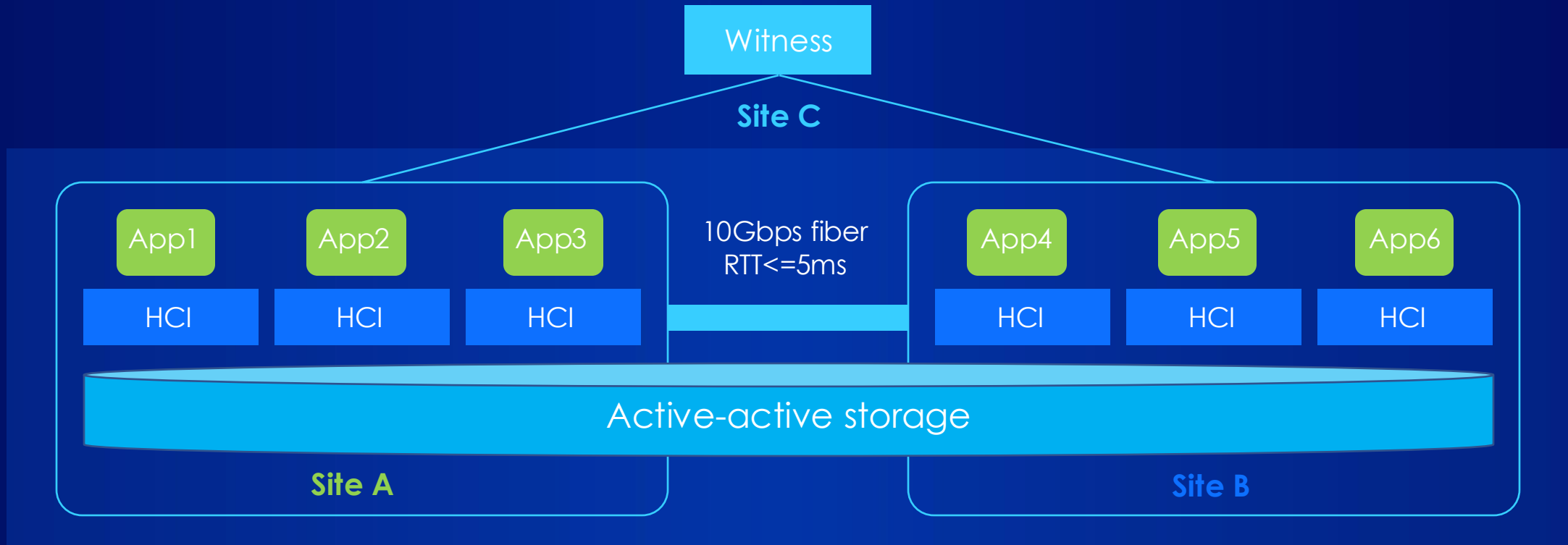


# Sangfor Active-Passive Disaster Recovery



- Integrated and easy to use
- Local backup + remote replication
- Flexible RPOs, min. 1s

# Sangfor Active-Active Stretched Cluster



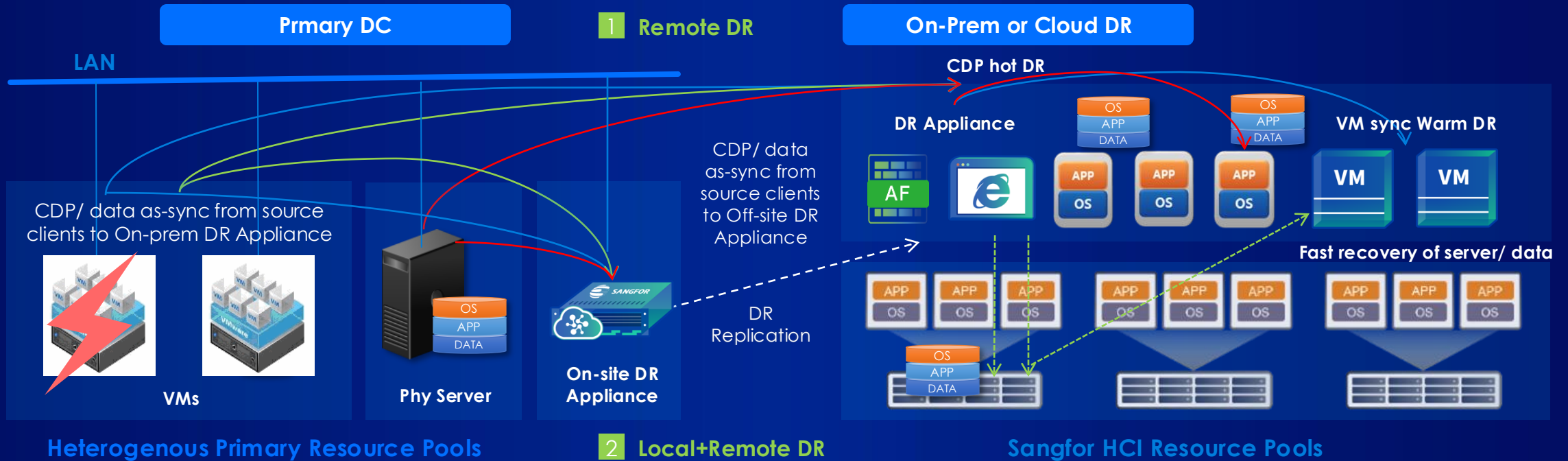
Automatic failover

Minimal downtime

0 data loss

Easy to deploy and manage

# Sangfor heterogeneous DR (hDR)



Heterogenous Primary Resource Pools

2 Local+Remote DR

Sangfor HCI Resource Pools



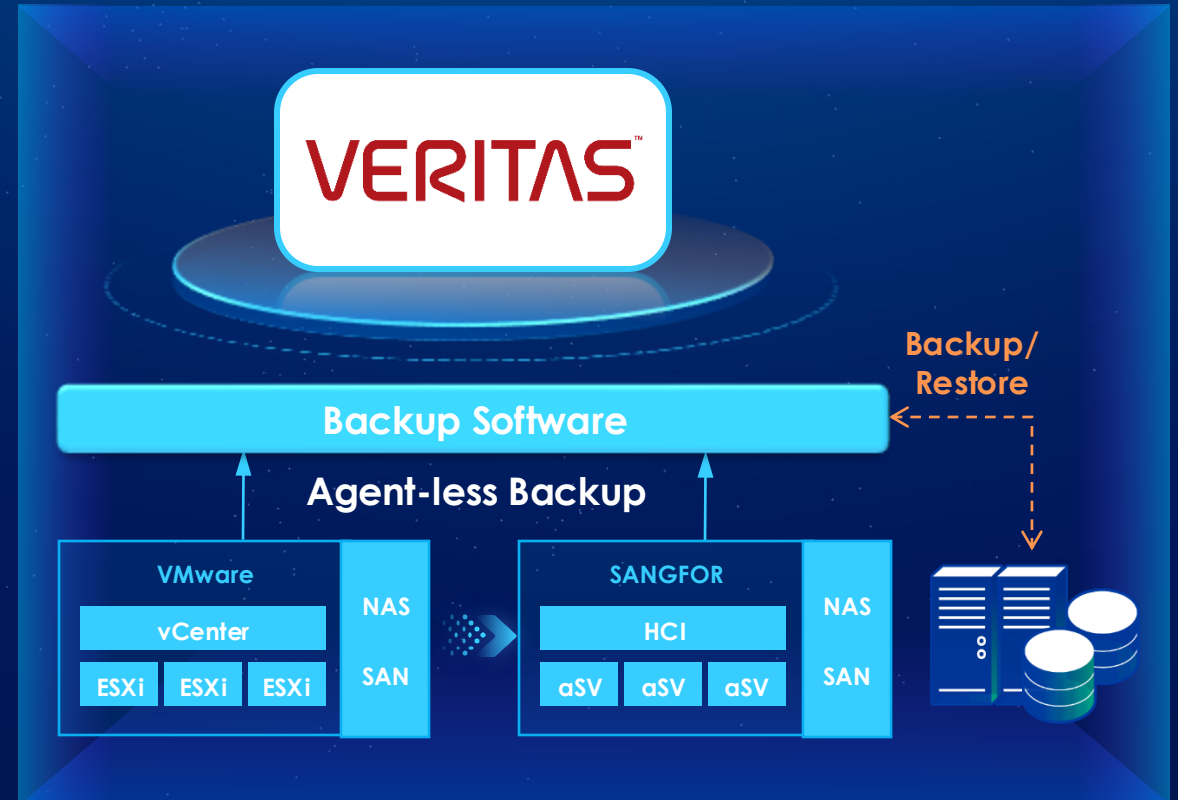
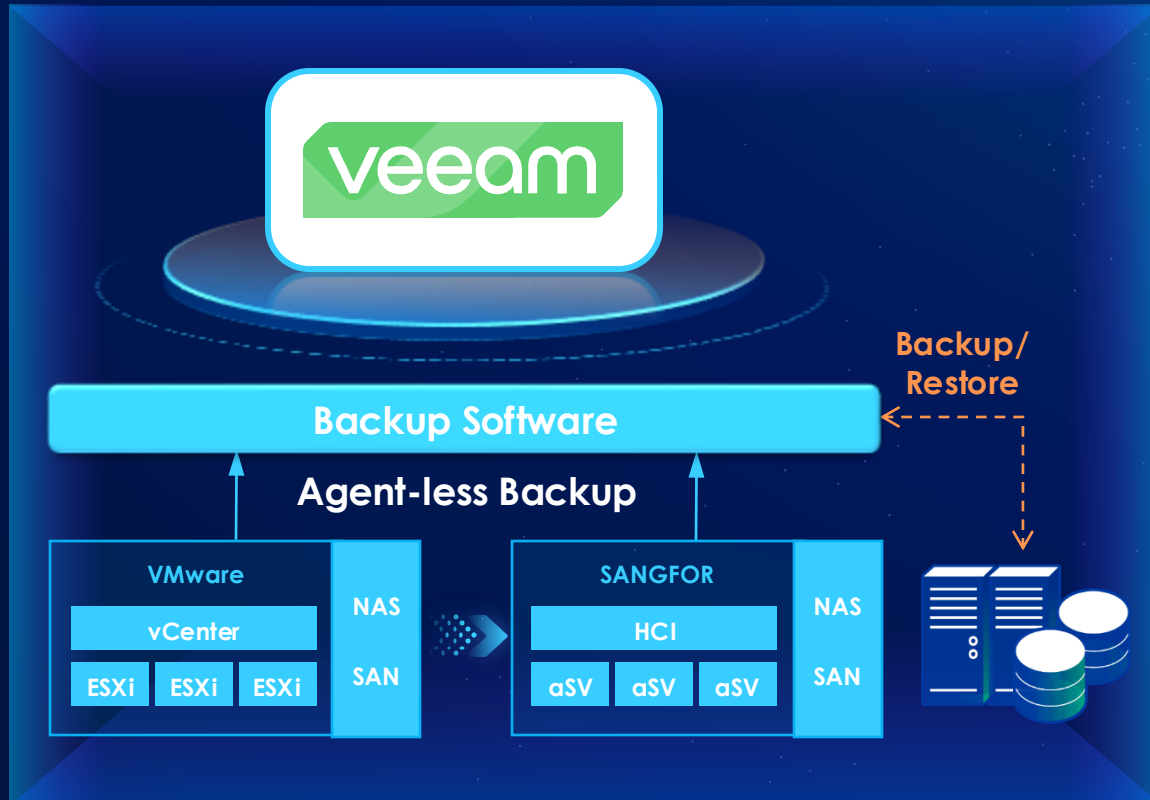
# Backup Copy to S3-Compatible Object Storage



Features	Target Users	Competitors	Values
Backup copy to S3	MSP, CSP: HCI+SCP+S3	VMware, Veeam, AWS	1. Improved data protection with backup copied to S3, supporting encrypting backup files.
			2. Reduced cost of off-site backup and archiving, lowering TCO and O&M difficulties.
			3. Better data compliance (especially for the European market).

**A MySQL database VM needs to be configured on HCI to store metadata. 200GB disk space is required for 100TB of backup data.**

## Agent-less backup support for Veeam and Veritas.



# Secure



## Platform Security

HTTPS Login

Anti-blasting

2FA Login

Weak pwd detection

Idle session timeout

Resource Access Mgmt

IP/MAC Whitelist

Built-in WAF

## Platform Security

### αSEC-NFV



NGAF



IAG



AD



Log Audit (LAS)



Database Audit



BVT



OSM

### αSEC

#### Built-in Cloud Security Center



Host Protection



Asset Identification



Event Mgmt



Vulnerability Mgmt



Built-in Network Security\*

## Monitoring

Operation Log

Audit Log Backup

Risky Behavior Alert

Security Event Monitoring

Security Monitoring Dashboard

## Coding Security

SDL

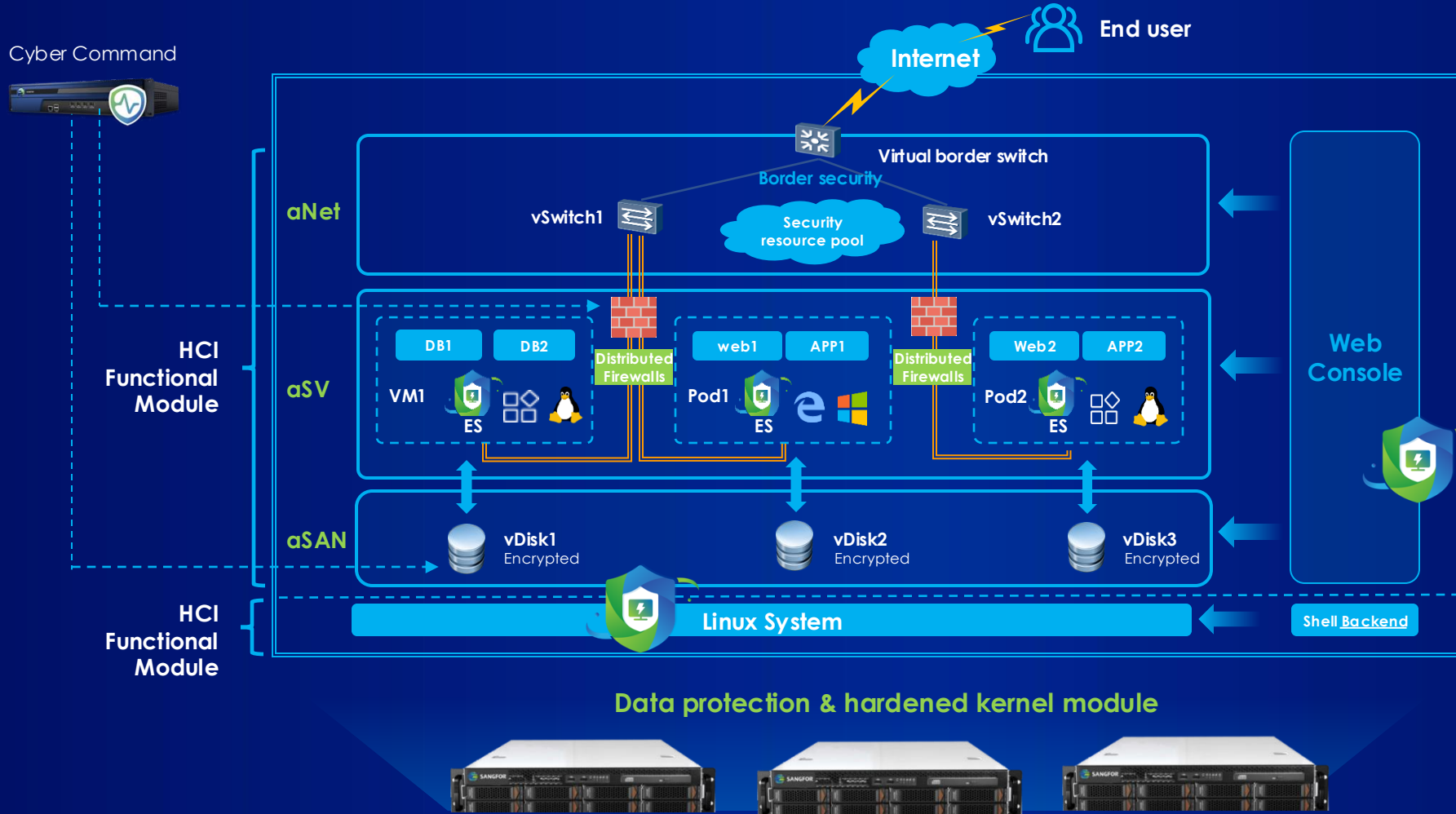
Code Obfuscation

Code Vulnerability Scanning

Penetration Testing

Dependency Mgmt

# Maximized Security, Inside out



## Platform Security

- Cyber Command correlated service

## Network Security

- vAF
- Distributed FW

## Endpoint Security

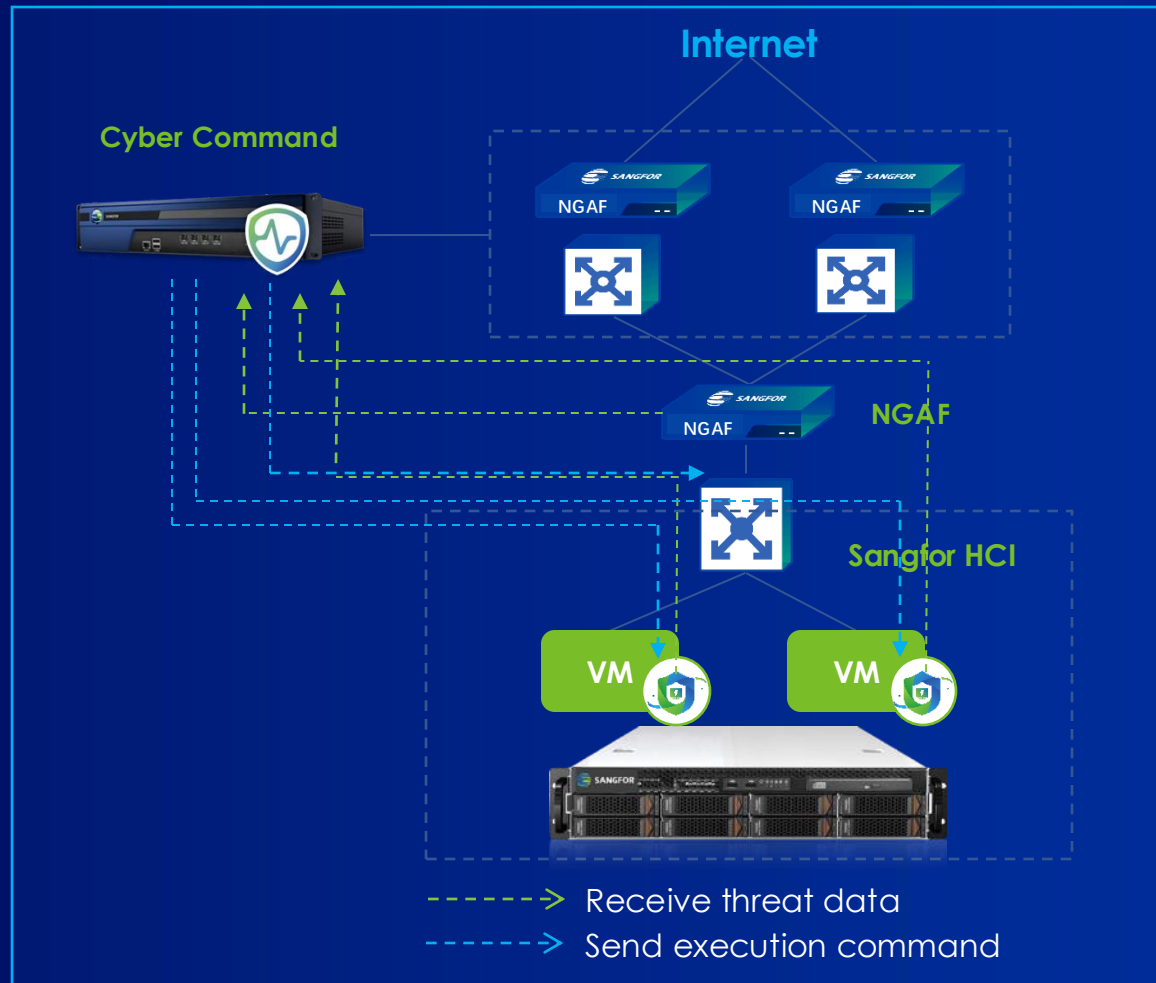
- Endpoint Secure integration

## Data Security

- Encryption

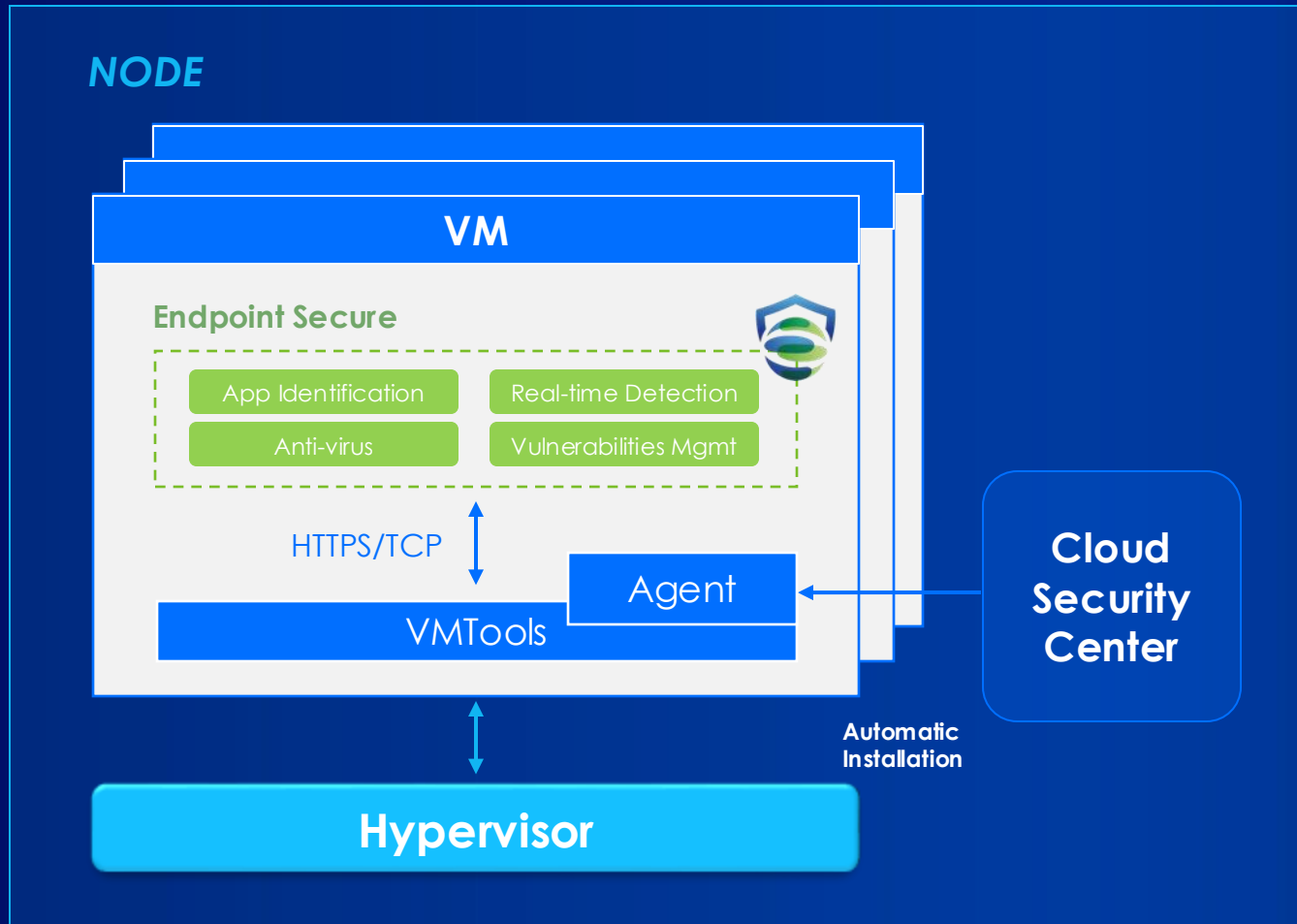
## Kernel Security

- Built-in WAF

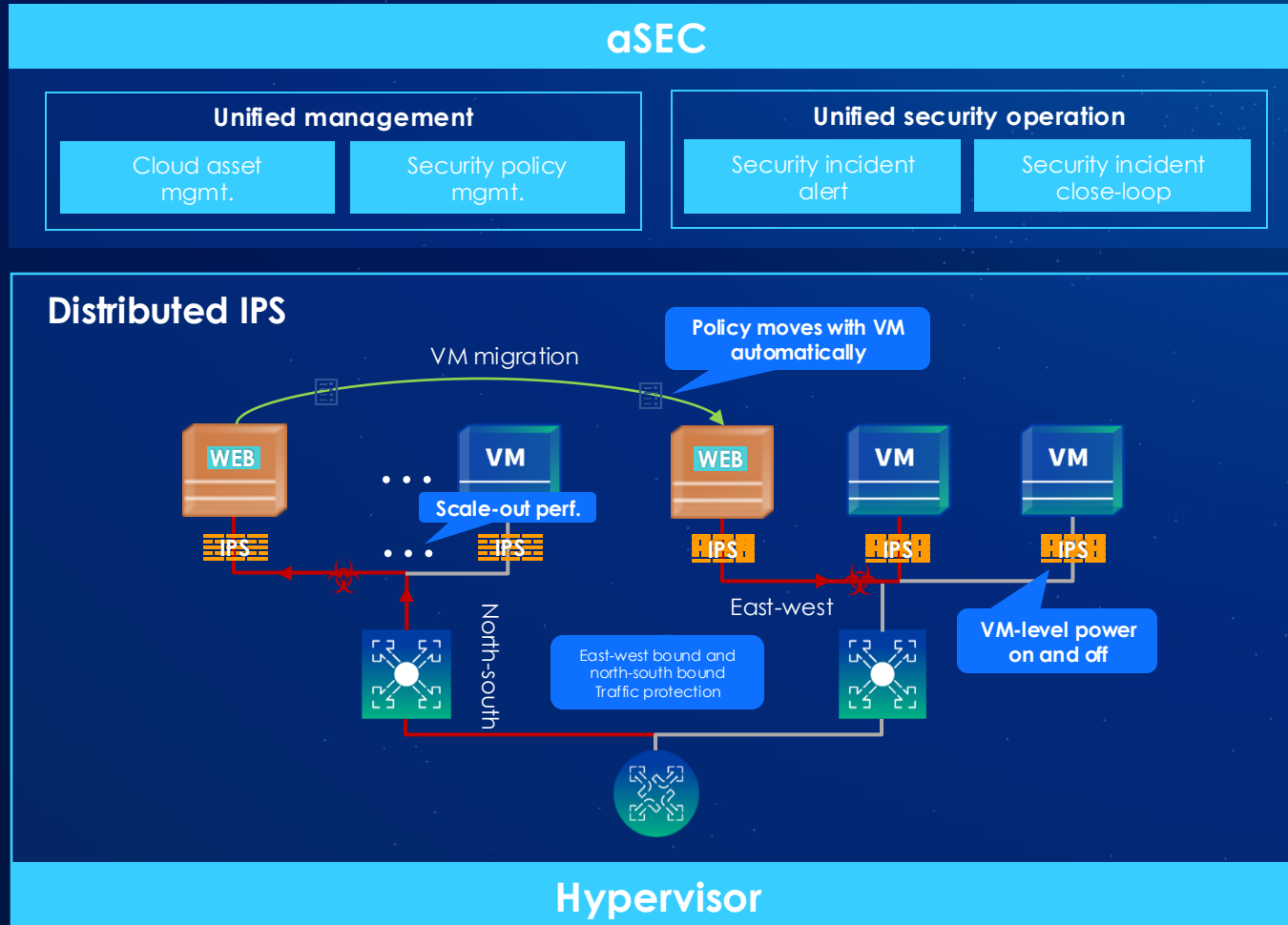


**CC detects security threats through network traffic analysis, NGAF and ES, and then takes action based on different threats:**

- For scenarios like zombie network, CC works with distributed firewall to quarantine infected cloud host automatically
- In ransomware scenario, CC leverages storage snapshot API to take snapshot of the infected VM to minimize loss
- For mining scenario, CC sends command to power off/suspend the mining VM to avoid unnecessary resource consumption
- Manual/automated policy: policy can be issued manually on CC



- Automatic Agent Installation
- Built-in Endpoint Secure Capabilities
- Low Resource Consumption
- File-level Protection for Linux



## Business is secured once it's online

- No additional deployment and configuration is required, 1-click security policy application.

## Adaptive security policy

- The security policy automatically follows the dynamic state of VMs.

## Unified management

- Unified management for both security and cloud resource.

## Flexible and scalable

- VM-level control granularity
- Scale out with business



# Automated Policy Recommendation for Micro-Segmentation

➤ Sangfor HCI 6.10.0 intelligently recommends policies for micro-segmentation by **visualizing aNI (Network Insight) flows**. It **relies on the effectiveness of distributed firewalls** rather than aSEC's distributed IPS engine. However, this feature belongs to the aSEC component, so it requires an aSEC license, not aNET. The price of the aSEC license **remains unchanged** in this version.

## Easy Configuration

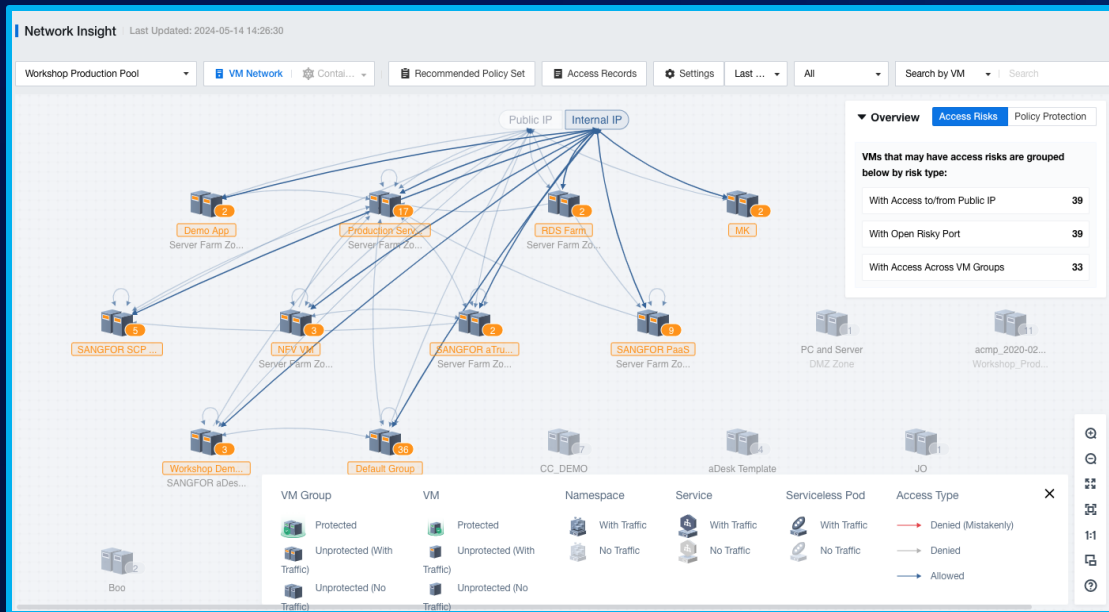
Automatically generates access control policies between business VMs based on their application access relationships from the last 30 days. This helps operations personnel configure access control policies more quickly and easily.

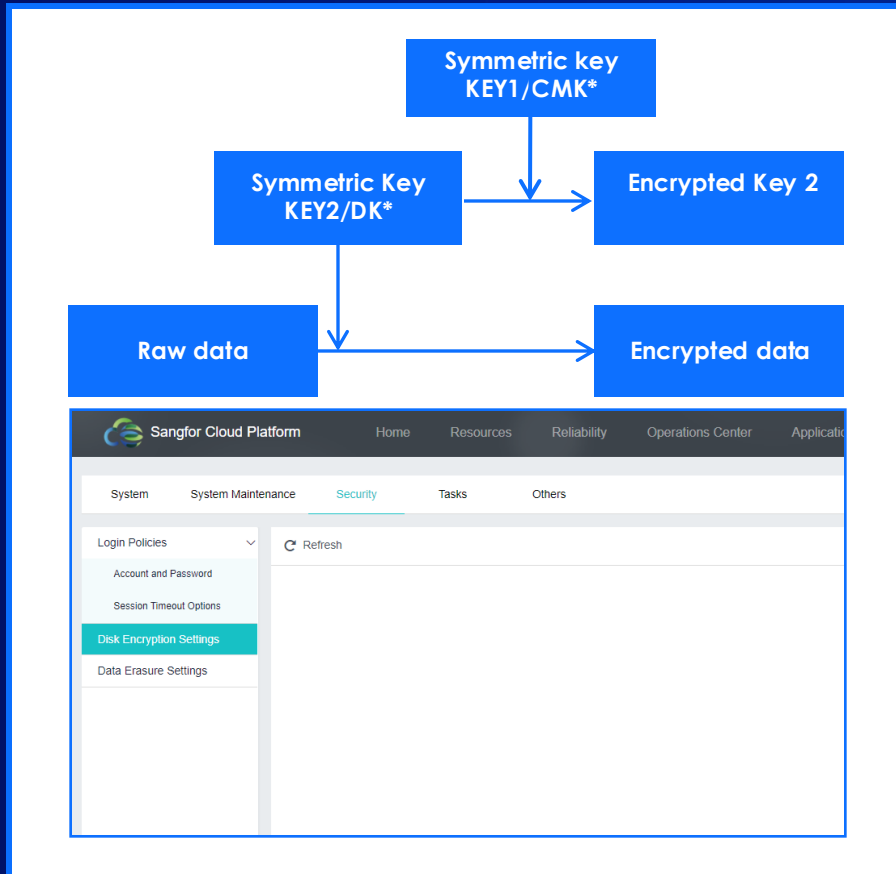
After generating the policies, a visual preview of deployment effects is provided to spot misconfigurations or omissions. This allows for quick verification and adjustments to ensure policies don't negatively impact the business.

## Effective Verification

## Policy Alerts

The system continuously monitors business access patterns and raises alerts for abnormal access. This helps operations personnel identify and address any misconfigurations, enabling them to promptly restore application access.



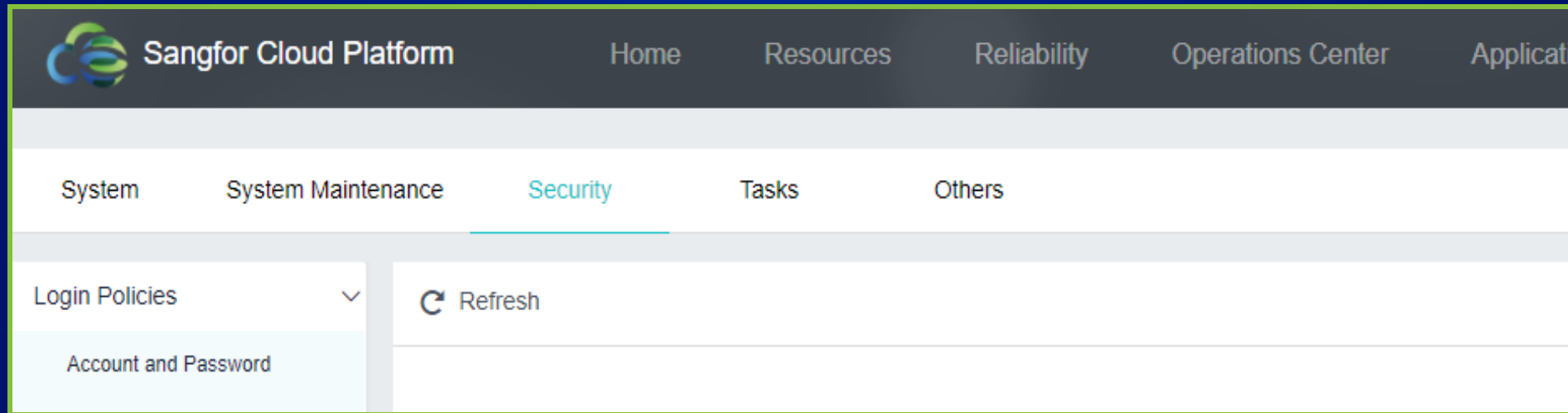


## Scenario

- Realizing the encryption of images and snapshots based on VM disk encryption.

## Feature

- **Encryption algorithm:** AES-256, SM4.
- **Range:** one VM with one encryption module.
- **Key:** one VM with one key.



## Scenario

- Ensuring the deleted data is completely wiped from the disk when recycling storage resource.

## Feature

- Wiping disk data thoroughly.
- Customized overwriting strategy.
- Supporting specific rate of overwriting and erasure for different cluster.

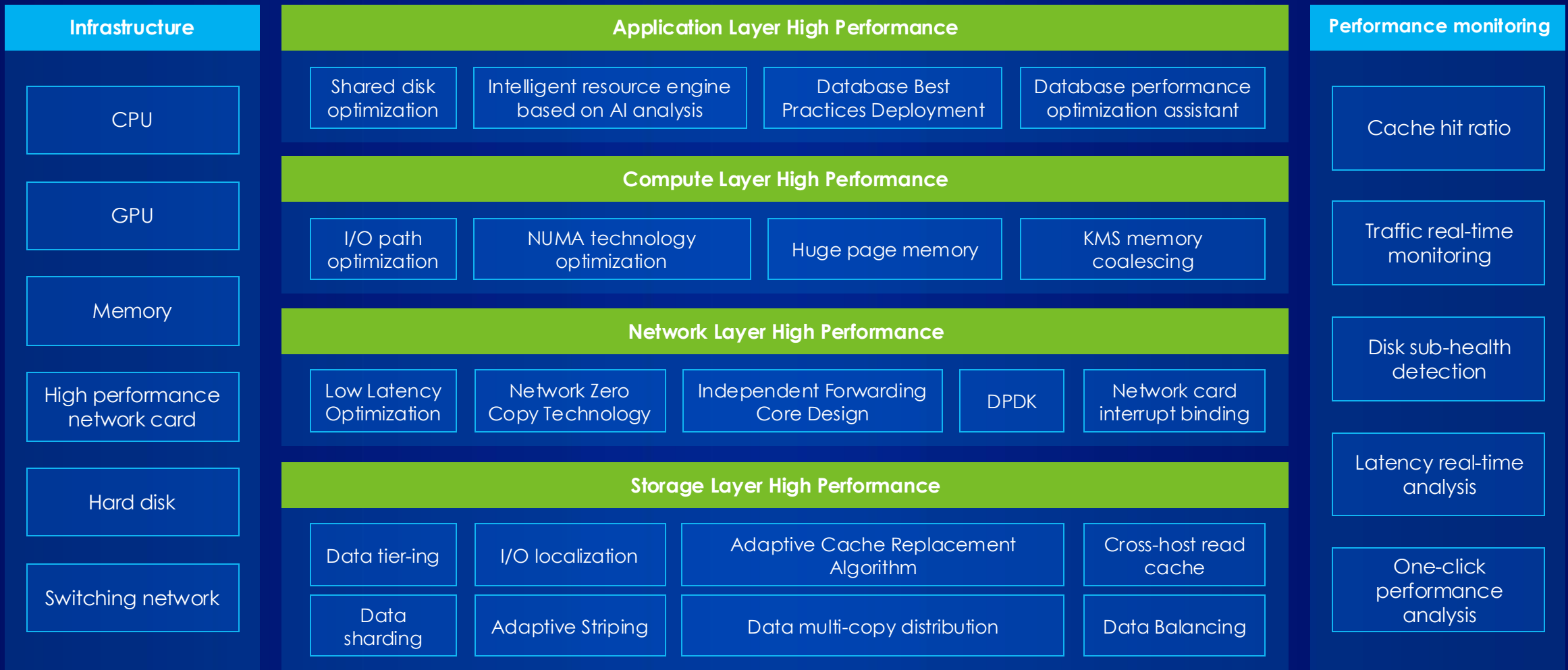
## Note

- Users' business system will be interfered in data erasure process because of occupancy of Disk I/O and CPU capacity.
- The wiped data cannot be recovered.

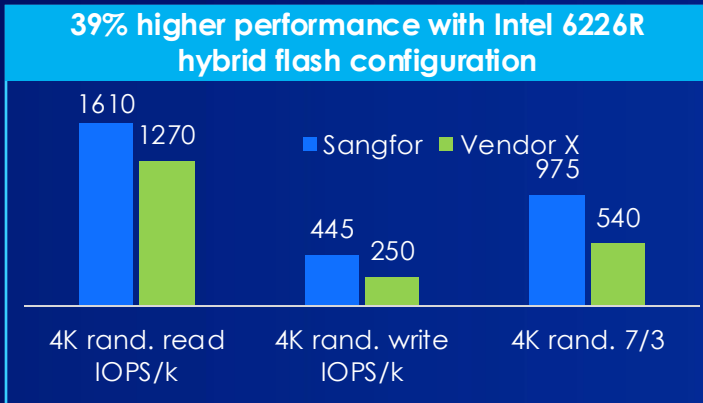
# High Performance



# Panorama of High Performance Capabilities



# Full-stack Performance Optimization



3 nodes, 2\* NVMe + 6\* HDD + Turbo + 25G RDMA

4K	randwrite	89287	189024	111.7%	357	756	111.8%
4K	randw 70%	97441	254642	161.3%	389	1018	161.7%
4K	randread	99214	266931	169.0%	396	1067	169.4%
8K	randwrite	91922	164103	78.5%	735	1312	78.5%
8K	randw 70%	96608	248721	157.5%	772	1989	157.6%
8K	randread	100158	262833	162.4%	801	2102	162.4%
4K	randwrite	109826	223106	103.1%	439	892	103.2%
4K	randw 70%	100309	237138	136.4%	401	948	136.4%
4K	randread	106051	245773	131.7%	424	983	131.8%
8K	randwrite	101229	213505	110.9%	809	1708	111.1%
8K	randw 70%	104153	244669	134.9%	833	1957	134.9%
8K	randread	116560	260387	123.4%	932	2083	123.5%
4K	randwrite	177971	374448	110.4%	711	1497	110.5%
4K	randw 70%	291351	683085	134.5%	1165	2732	134.5%
4K	randread	292469	796123	172.2%	1169	3184	172.4%
8K	randwrite	160336	361886	125.7%	1282	2895	125.8%
8K	randw 70%	291402	635965	118.2%	2331	5087	118.2%
8K	randread	296678	789441	166.1%	2373	6315	166.1%
4K	randwrite	170068	418605	146.1%	680	1674	146.2%
4K	randw 70%	355420	751206	111.4%	1421	3004	111.4%
4K	randread	804533	1385222	72.2%	3218	5540	72.2%
8K	randwrite	158078	395798	150.4%	1264	3166	150.5%
8K	randw 70%	336506	718905	113.6%	2692	5751	113.6%
8K	randread	638913	1280532	100.4%	5111	10244	100.4%
				82.4%			82.4%



Compute

## Heavy-load VM Intelligent Scheduling

- Large-core VM CPU scheduling optimization
- NUMA resource affinity

20% increase in CPU scheduling efficiency  
10% increase in resource reservation



DB

## Oracle DB performance optimization

10% increase in overall DB performance  
20% higher performance than peers



Storage

## Turbo SPDK Kernel Acceleration RDMA

50% higher throughput  
20% higher IOPS  
35% higher write performance



Network

## SR-IOV Low Latency Transmission

- DPDK data processing optimization
- Network forwarding process affinity

20% higher network performance  
>90% bandwidth utilization across hosts

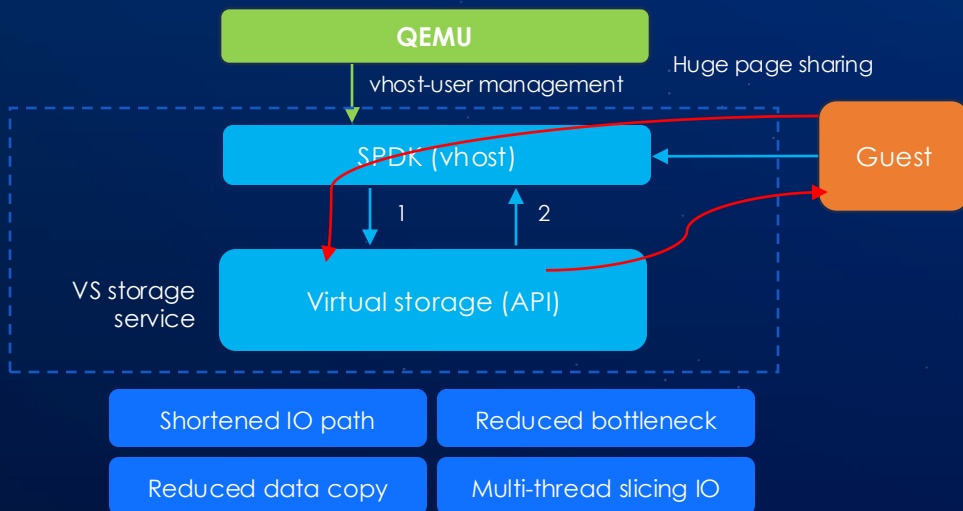


# Greatly Reduced IO Latency with SPDK Turbo and RDMA SANGFOR



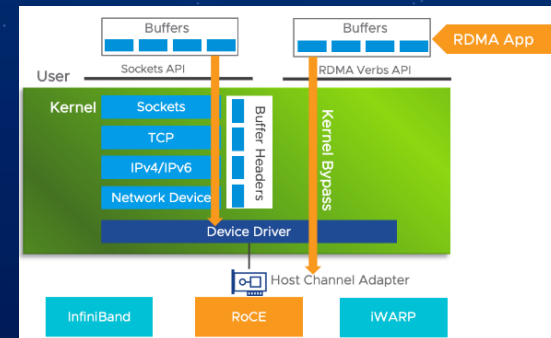
## SPDK-based Turbo Boost

- SPDK (Storage Performance Development Kit) is a toolkit used to build high-performance storage applications. In the virtualization layer, Sangfor HCI utilizes SPDK vHost technology to run VMs in user space, **enabling IO streams to bypass the kernel and access hardware directly**, thereby reducing the scheduling performance overhead caused by virtualization traps.
- With Turbo acceleration based on SPDK vHost, average latency for large block mixed read-write operations is reduced from 4ms to 2ms, **improving throughput efficiency by approximately 50% while increasing small block IOPS by over 20%**.



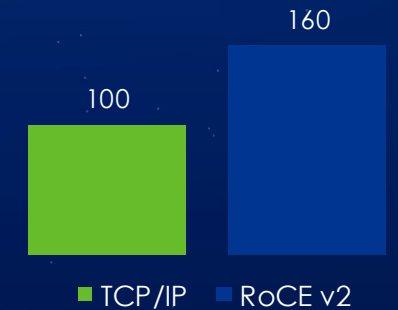
## RDMA Network

- RDMA (Remote Direct Memory Access) allows computers to directly transfer data to memory without involving the operating system, thus avoiding the performance overhead of traditional TCP/IP network protocol stack in system calls and memory copying. Distributed storage based on RDMA significantly reduces data transmission latency between different nodes and improves storage network efficiency.
- Sangfor HCI introduces RDMA in virtual storage using the RoCE v2 protocol. Combining single and dual-sided communication, it **boosts write performance by over 35% and outperforms competitors by 90% in small block write scenarios**.



Single VM, 32 concurrent 4k random writes

**50% Higher Performance**



**The NICs and switches must support RDMA protocol**

*\*RDMA is only supported by virtual storage*



# Fully Optimized Network Performance

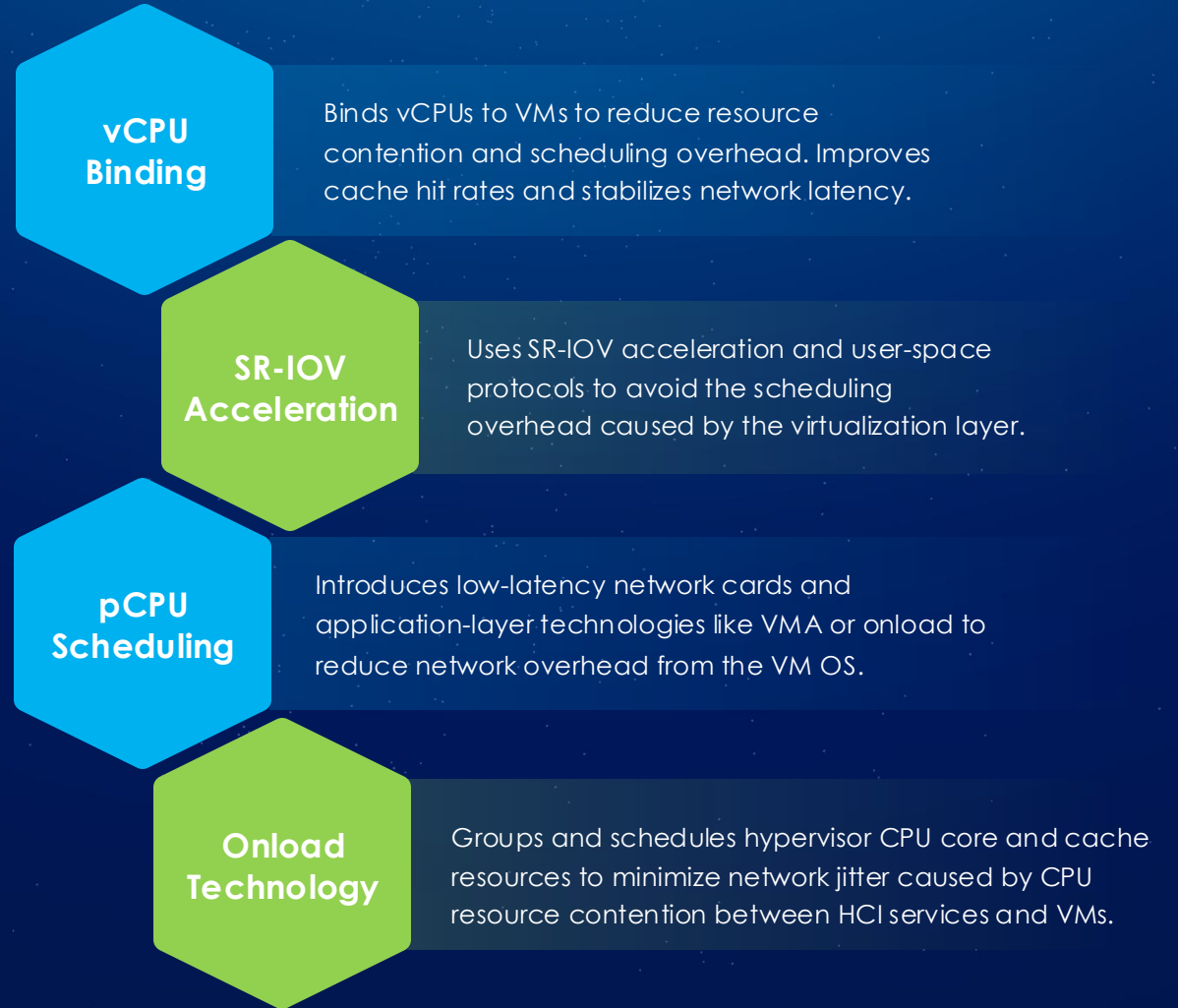


## Sangfor HCI Network Performance Test

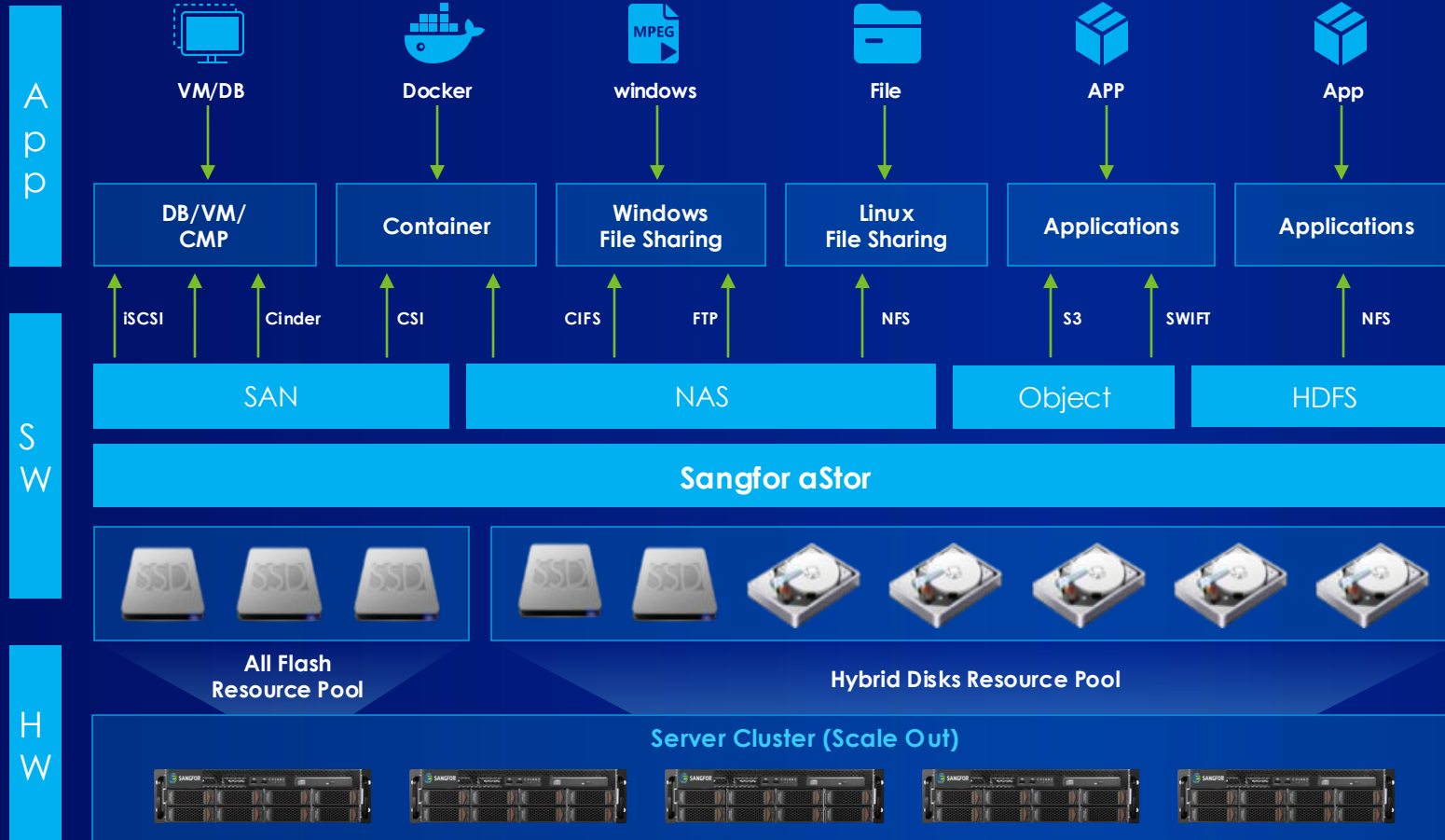
Testing Model	VM Location	Device in Between	Test Results
Intro-host	Single flow	Virtual switch	23Gbps
		Virtual router	23Gbps
	Multi-flow	Virtual switch	46Gbps
		Virtual router	42Gbps
Inter-host (20Gbps)	Single flow	Virtual switch	8Gbps
		Virtual router	8Gbps
	Multi-flow	Virtual switch	19Gbps
		Virtual router	18Gbps

## Low-Latency Network Performance

Testing Model Sockperf	Physical NIC	SR-IOV (VF)	
	Physical to Physical	VM to Physical	VM to VM
64 Byte	2.30 μs	2.33 μs	2.32 μs
128 Byte	2.34 μs	2.37 μs	2.35 μs



# New Product Available Since 2023 – aStor EDS



## High Compatibility



A cluster supports multiple storage types of blocks, files, objects, and big data, using over a dozen storage protocol interfaces, making it widely compatible with business applications.

## Agile Iteration

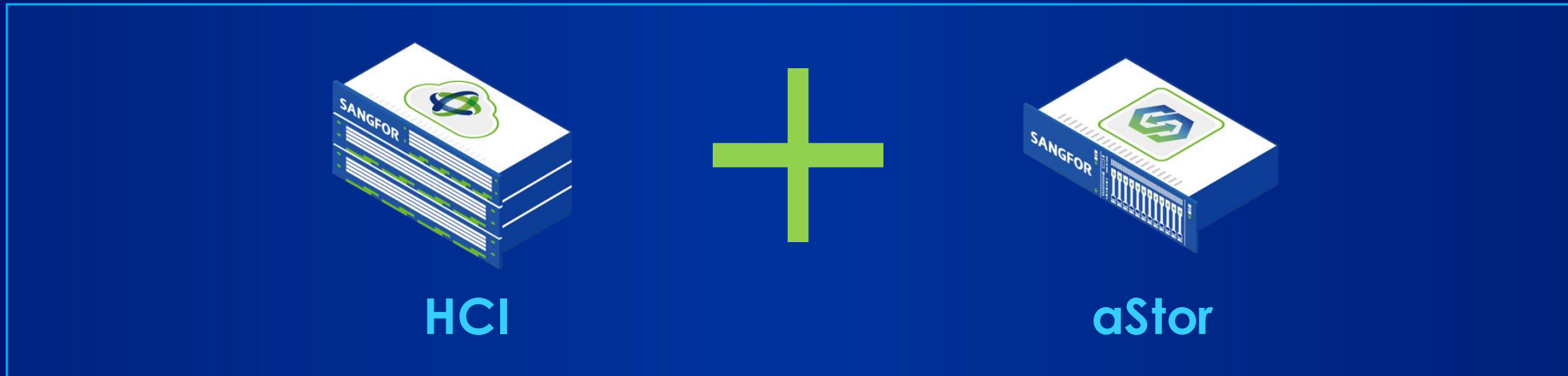


The aStor storage software uses the agile development model with rapid iteration, which can quickly support new scenarios and applications.

## HW Decoupled



Consolidation means lower cost on scale out and replacement providing minute-level expansion of capacity to quickly meet changing business needs; Quick adaptation of new hardware (eg: U.2 NVMe, Optane memory, etc.)



## HCI + aStor Use Cases

- **Large capacity:** aStor provides better per GB cost than HCI in large capacity storage deployment
- **Backup:** aStor serves as the backup repository for HCI
- **New storage protocols (file & object):** applications that require file or object storage can leverage aStor.

# The Best Building Block for Your Hybrid Cloud



## Homogeneous Hybrid Cloud

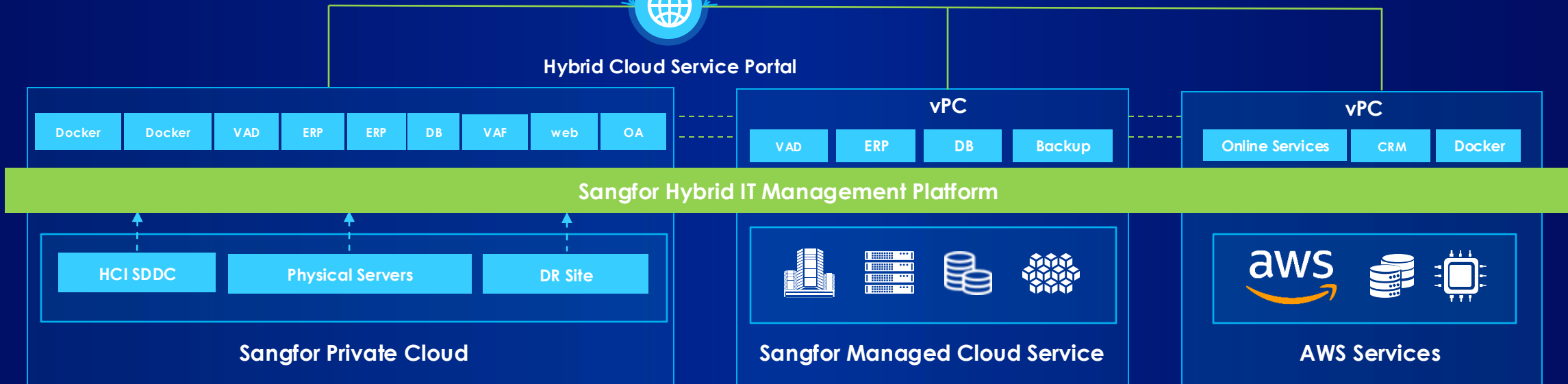
- ✓ Unified management
- ✓ Security consistency
- ✓ Simple and easy start
- ✓ Cost effective

Subsidiary    Sub-Department    Remote Access    Branch (VDI)



## Sangfor MCS

- ✓ Managed Private Cloud
- ✓ Critical Applications
- ✓ Backup & DR Services
- ✓ Hybrid Cloud Managed Services





## Data Center Consolidation

- Full convergence of compute, storage, networking and security, massive TCO reduction
- Extremely simplified data center operation with "what you draw is what you get"



## Enterprise Applications

- Intuitive guiding wizard for Oracle and SQL Server to drastically simplify database set-up and operations
- Optimized architecture to ensure application performance and data reliability



## Data Protection & DR

- Integrated backup and CDP to meet various data protection requirements
- All in one without 3<sup>rd</sup> party data protection software to simplify management and cut cost
- DR orchestration & testing



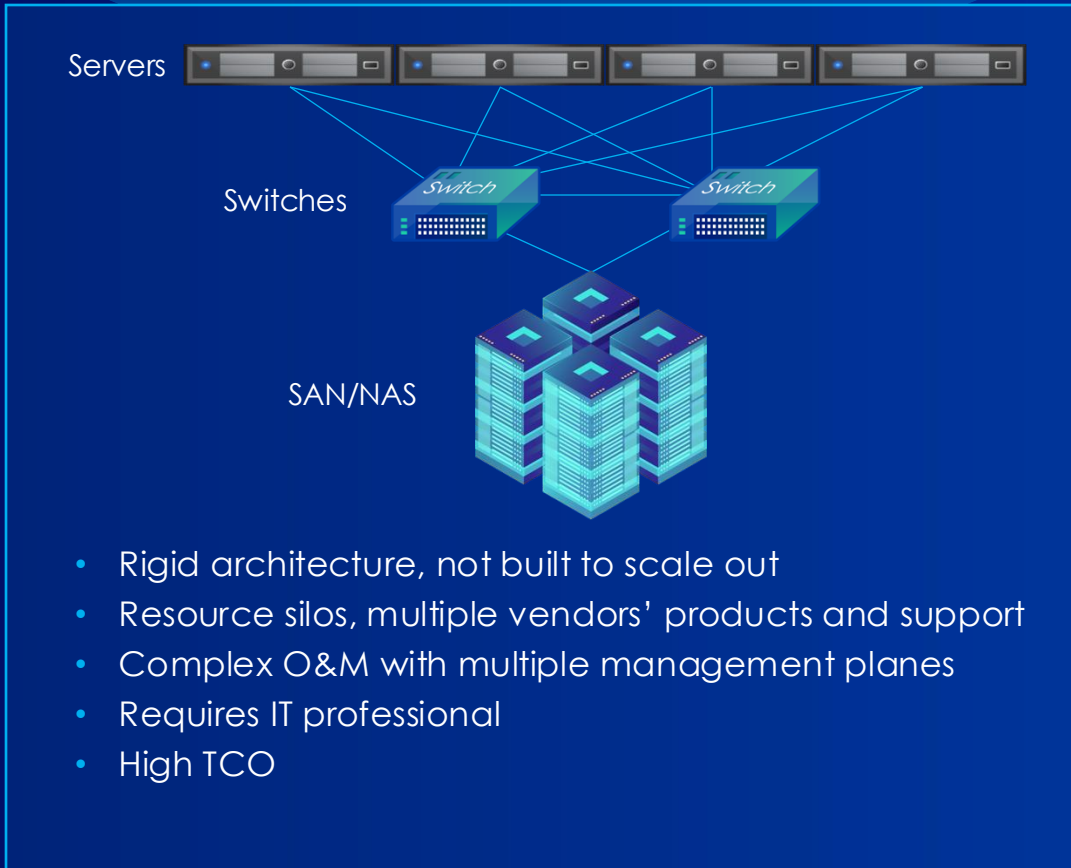
## Cloud Transformation

- All-in-one private cloud solution with all the beauty from HCI
- Smooth evolution to hybrid cloud and multi-cloud
- Cloud-native workload support

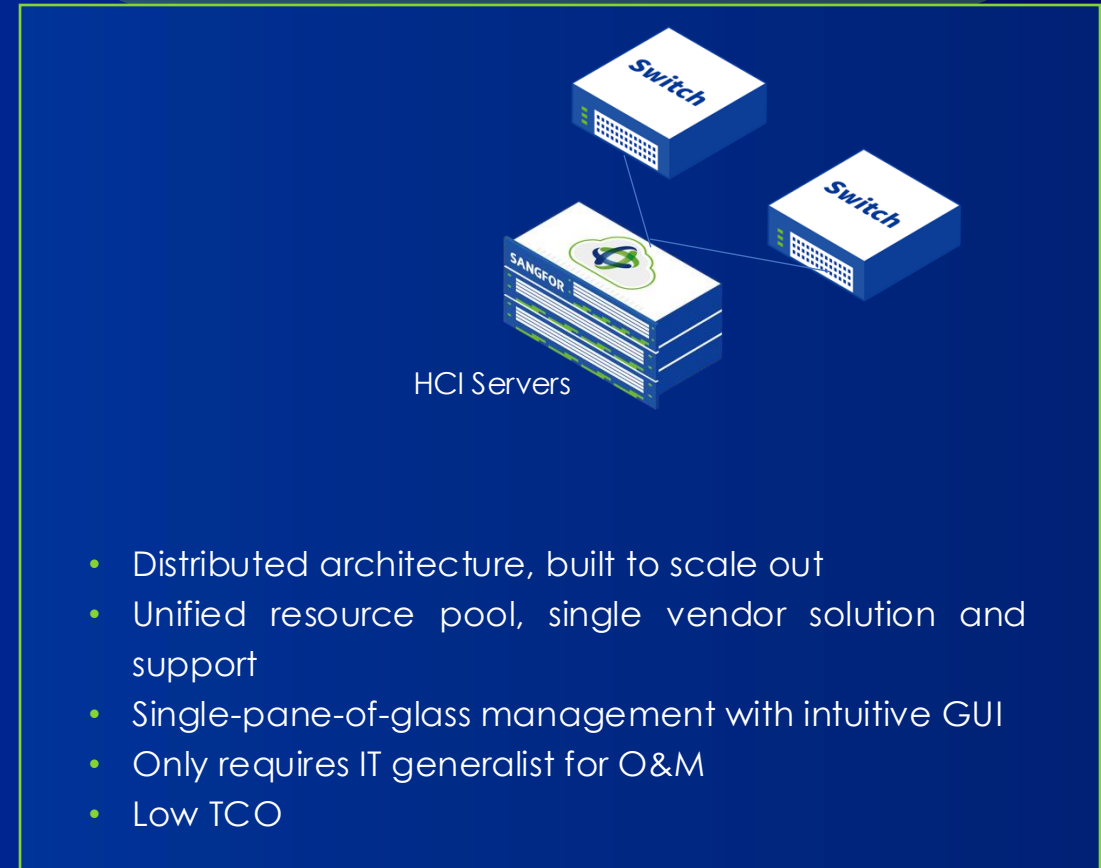
# Sangfor HCI v.s. Traditional 3-tier Infrastructure



## Traditional 3-tier infrastructure



## Sangfor HCI





Impact on Customers	Sangfor Solution
More expensive full subscription (3yrs: x1.5 / 5yrs: x2)	Perpetual & subscription licenses at better prices
Subscription model unacceptable to public sector buyers due to ownership concerns	
Uncertainties surrounding the acquisition are causing panic among buyers regarding continuous and localized innovation and support	Strategic market expansion in APAC and EMEA, ensuring robust local vendor presence and ongoing innovation and support
Users of vSphere Enterprise+ are forced to either downgrade to the Standard version with fewer features or upgrade to the more expensive vSphere Foundation	Cost-effective, on-demand software subscription with no upfront investment

	VMware	Sangfor
<b>Architecture</b>	vSphere, vSAN, NSX, vCenter, vRealize, SRM, etc Too many moving parts	aSV, aSAN and aNET are integrated
<b>Management</b>	Additional installation and license	Included
<b>L4-L7 Virtual Firewall</b>	Rely on 3 <sup>rd</sup> party	√
<b>Scheduled snapshots Consistency group snapshots</b>	×	√
<b>Linked full clone</b>	×	√
<b>Backup</b>	Rely on 3 <sup>rd</sup> party	√
<b>CDP</b>	Rely on 3 <sup>rd</sup> party	√
<b>WYDIWYG</b>	×	√
<b>Data Tiering</b>	×	√
<b>Data Locality</b>	×	√
<b>vGPU</b>	Not supported by standard edition	√
<b>Min. cluster size with 3 data copies</b>	5	3

	Nutanix	Sangfor
<b>Architecture</b>	Virtualization, server and storage convergence	Virtualization, server, storage, network and security convergence
<b>Network virtualization</b>	Partial	√
<b>Security virtualization</b>	Rely on 3rd party	√
<b>Linked full clone</b>	×	√
<b>Data tiering</b>	×	√
<b>CDP</b>	Rely on 3rd party	√
<b>WYDIWYG</b>	×	√
<b>Hardware platform</b>	SuperMicro, Dell EMC, Lenovo, Cisco, HPE	All mainstream x86 servers
<b>Heterogeneous deployment of diff. vendors' hardware</b>	×	√
<b>Stretched cluster</b>	Not support for AHV (Nutanix's own KVM-based hypervisor)	√
<b>Min. stretched cluster size</b>	6	4
<b>Min. cluster size with 3 data copies</b>	5	3

# Business Benefits Brought By Sangfor HCI



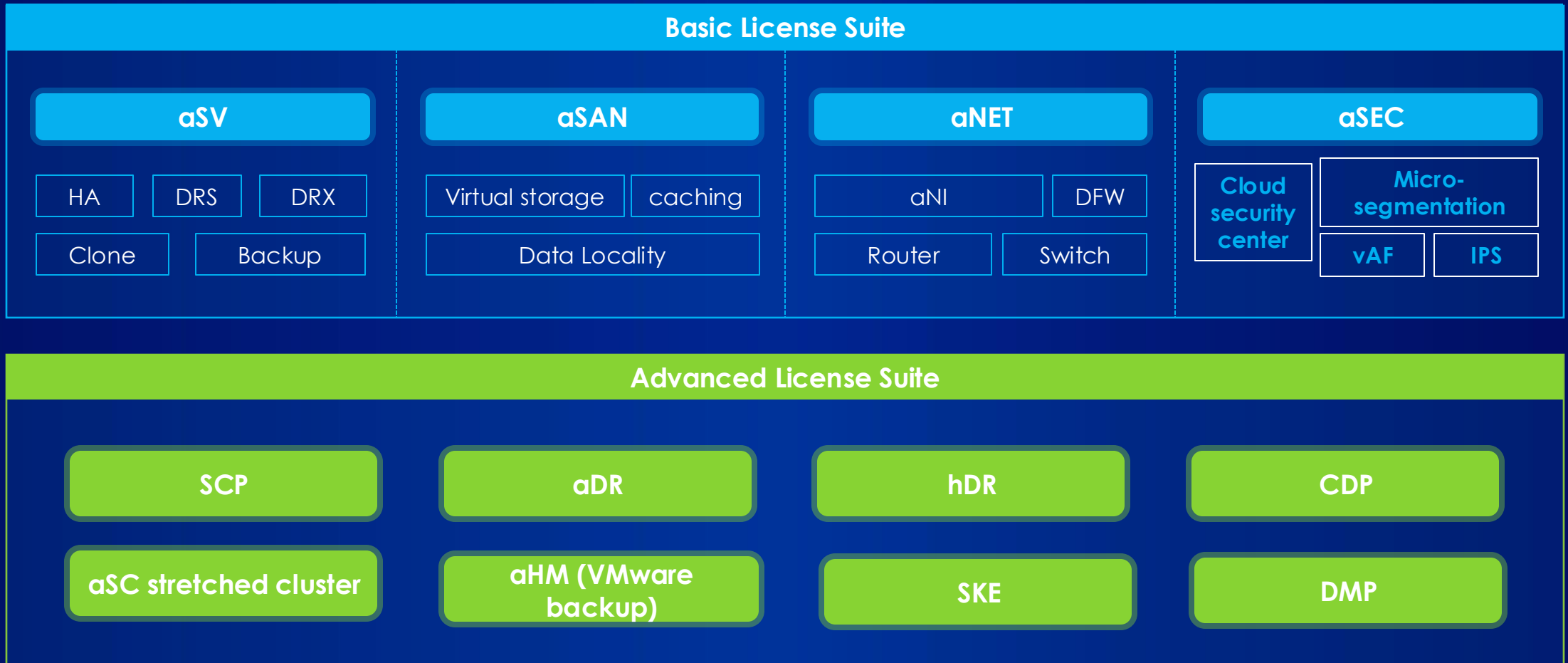
Up to **70%** TCO  
Reduction



**50%**  
TTM Reduction



**30%**  
Higher Performance





## SCC deployment on-premises (CSP scenario) (2024Q3)

- SCC supports deployment on-premises and manages multiple SCP+HCI
- Operational capabilities: Metering and billing, payment gateway, tenant self-registration, resource expiration reminder.
- O&M capabilities: Operations delegation, SkyOps deployment on-premises.
- DR scenario: On-premises DC DR to off-premises managed cloud.



## HCI & SCP 6.11.0 pre-release (2024Q4)

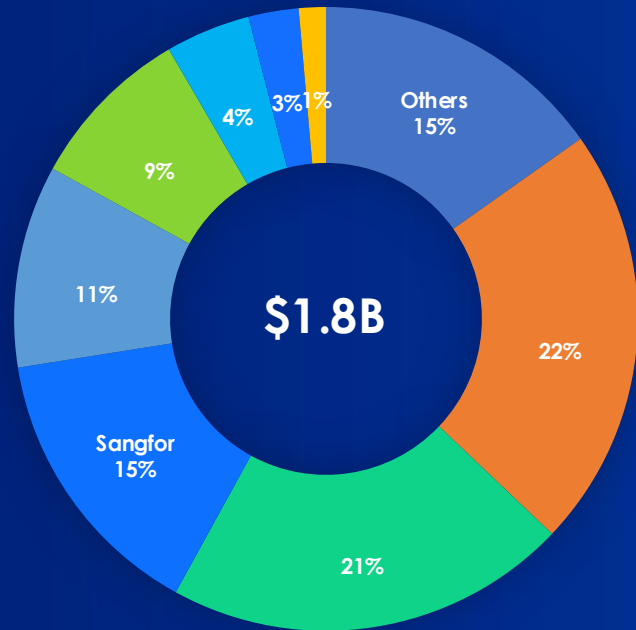
- Unified physical network configuration on HCI & SCP to improve management efficiency.
- The platform administrator can be assigned the same permissions as the super admin.



## SkyOps 3.0 (2024Q4)

- Database Monitoring and Performance Diagnosis: Supports Oracle standalone and cluster version monitoring. Indicators include: configuration parameters, TPM/TPS, table space, index structure, and other 100+ indicators. Provides SQL optimization suggestions according to slow database and failure points.
- VDC Alert Management: Improve the accuracy of VDC alerts, with a false alert rate lower than 20%.
- aStor Monitoring: Supports monitoring of performance trends, capacity, slow disk, etc.

### China HCI Market Overview, 2021



Top 3 HCI software provider in China according to IDC for 6 years



## SANGFOR Full Lifecycle Service



**Awareness  
& Consideration**



**Purchase &  
Deployment**



**Operations  
& Optimization**

- Security consulting
- Cloud transformation consulting
- Security risk assessment
- Solution design
- Best practices for use cases and industries

- Migration and replacement
- Managed cloud services
- Managed security D&R
- On-site principal support

- Policy or performance optimization
- Incident response and fast recovery
- Fast troubleshooting and upgrading
- Cloud monitoring & fault prediction
- Automated response and workflows

### Dedicated Support

- Tailored service plan across lifecycle
- Technical account manager
- Local warehouse with rapid delivery

### Local Support

- Local technical team
- Local certified partner ecosystem
- Global support center from EMEA to APAC
- English or local language communication



**6 unit** HCI Appliance



**>500K** IOPS



**>60%** Efficiency

- Too many servers to be maintained
- One server, one application, resources is not optimized
- Space become limited with too many legacy servers in occupation
- Electricity cost increases dramatically

## Customer overview

- Art Serina Piston & DYNA Metal are both factories under SERI-WATHANA ENTERPRISE. They provide pistons, bearings and other components to major automobile companies. As a joint venture company with Japan, many of the customers are Japanese companies.

## Challenges

- Constant and stable supply
- Traditional server + SAN architecture lack local redundancy and HA
- Suffered flood disaster in the past which caused significant product line downtime

## Solutions

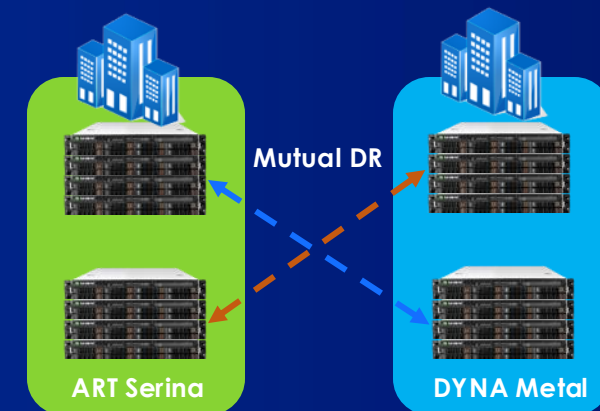
### Phase 1 2017 Q3

- Art Serina purchased 3\* aServer 2000 for data center consolidation

### Phase 2 2018 Q4

- Art Serina got additional 2\* aServer 2005 for DR
- DYNA Metal deployed aCloud software on existing servers and enabled DR
- Mutual DR between Art Serina site and DYNA Metal site

**Simplified, reliable, one-stop and cost-effective**



# Customers Who Chose Sangfor HCI



- Jakarta Eye Center: <https://www.youtube.com/watch?v=RM0KEtKPKeY>
- Ramsay Sime Darby Healthcare: <https://youtu.be/VvOdx1ZGEzA>
- The Medical City South Luzon: <https://youtu.be/TblkxQSTqmc>
- J&T Express Indonesia: <https://youtu.be/2GF9U6pGy6Y>
- fastERA (Italy): <https://youtu.be/Soltf1LVC8c>



SANGFOR



SANGFOR HCI

# THANK YOU!

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# Distributeur à valeur ajoutée de solutions IT

Cybersécurité | Réseaux | Wi-Fi | Stockage

## **HAFS NETWORKS,**

Représente et accompagne les éditeurs et les constructeurs pour créer de la proximité auprès des partenaires et des clients finaux.

## **Notre objectif :**

Proposer des solutions qui répondent aux besoins. Accompagner, former et développer pour accroître le rayonnement sur le marché français et en Afrique sub-saharienne.

**Solutions**

**Formations**

**Services**



# Portfolio Solutions

**NEXT GEN  
FIREWALL**

**HSM / HSA**

**ZTNA**  
Zero-Trust Network Access

**SD-WAN**

**EDR**  
Endpoint Detection and Response

**NIPS**  
Network Intrusion Prevention System

**NDR**  
Network detection and response

**WAF**  
Web application firewall

**ADC**  
Load balancer application

**XDR**  
Extended Detection et Response

**DLP/NEXT GEN.DLP**  
Data loss prevention

**NAS/SAN**

**HCI/VDI**

**SWITCH**

**Wifi/Wireless**

**Wifi Penetration  
Testing**

**Vulnerability  
scanner**

**Web Vulnerability  
Scanner**

**STRONG  
AUTHENTICATION**  
Hardware Token Authentication

**IAM / MFA**  
Identity et Access Management

**NETWORK  
VISIBILITY**  
Network Performance Monitoring

# Portfolio Solutions



Site web : [www.hafs-networks.com](http://www.hafs-networks.com)

## France

sales@hafs-networks.com  
+33 (0)6 51 10 87 49 / (0)9 74 98 52 96

## Côte d'Ivoire

sales-ci@hafs-networks.com  
+225 07 89 82 56 49 / +225 07 59 05 85 82