ABLECLOUD
All about data & cloud

A single HCI platform for cloud data center infrastructure

ABLESTACK® HCI

Product introduction

CONTENTS

A single HCI platform for cloud data center infrastructure

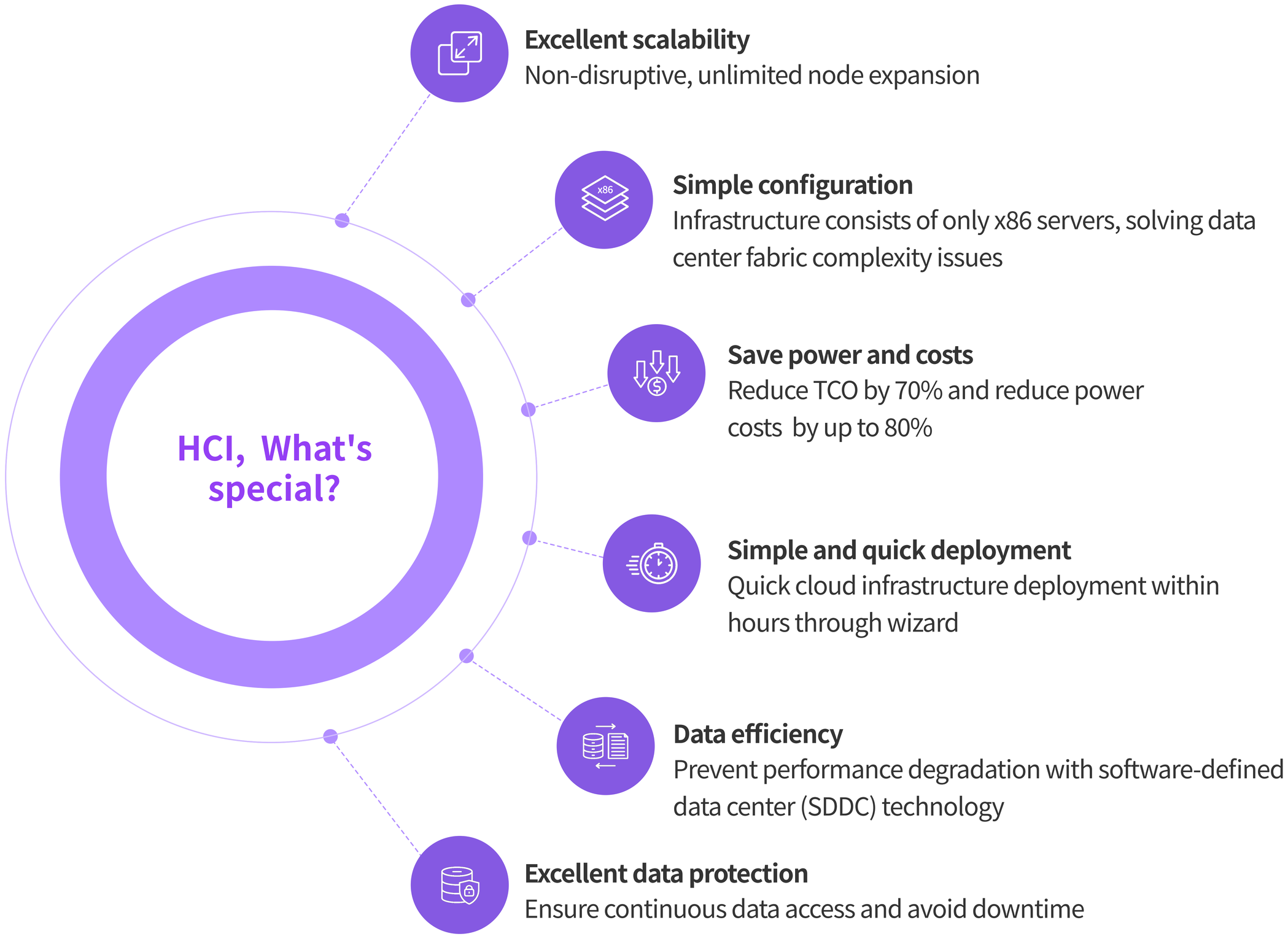
Why HCI?

Are you considering operating a cloud data center or do you have a solution for building a data center? Everything is solved with ABLESTACK HCI.

ABLESTACK HCI is an HCI-based data center construction solution that provides high-performance storage, Virtual machine (VM), network management, etc. Components required to operate a cloud data center All are installed.

Optimized Platform for Virtualization and Cloud Service Operations

- ☑ HCI-based data center model
- ☑ Software-defined infrastructure control plane
- ☑ Self-diagnosing, self-healing, non-disruptively expandable infrastructure data plane

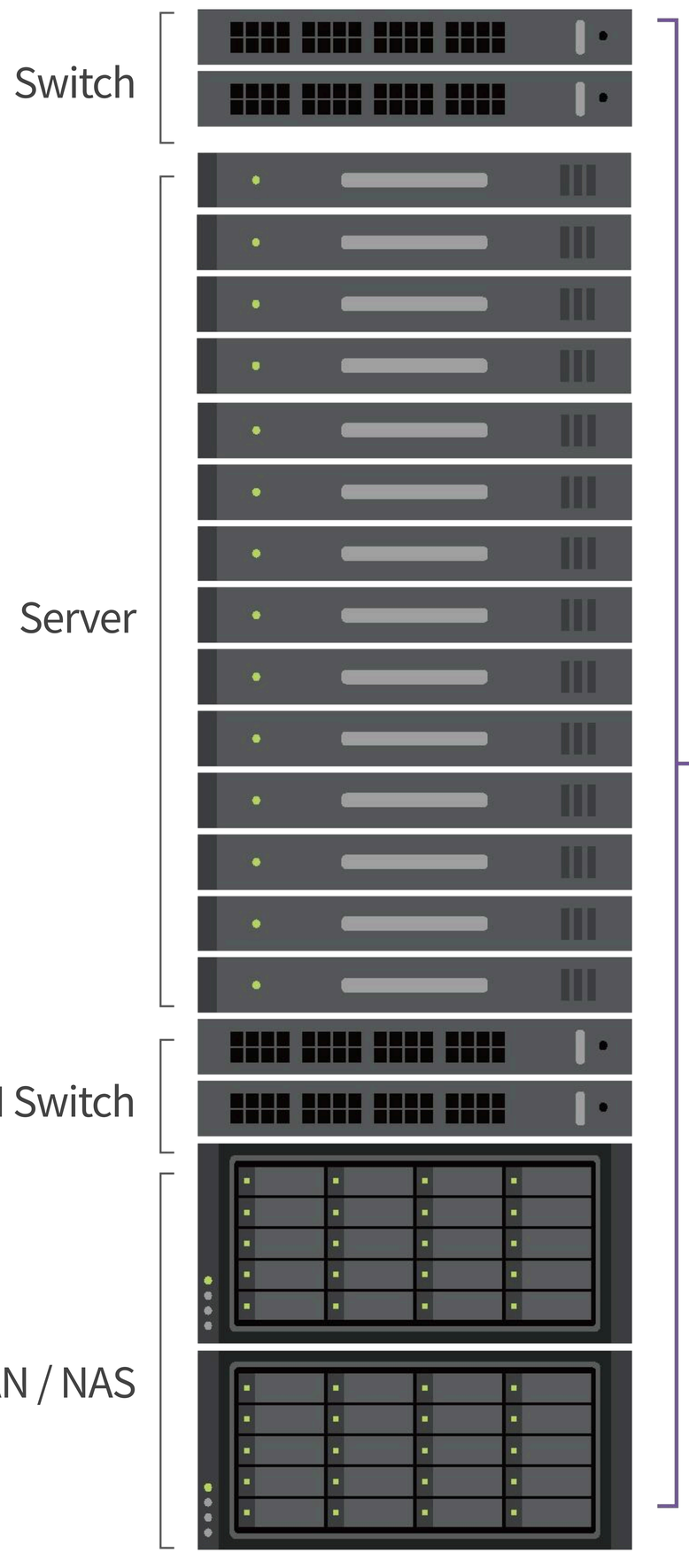


HCI (Hyper Converged Infrastructure)

HCI: A Major Trend in the Infrastructure Market

Hyper-Converged Infrastructure (HCI) is a software-defined, unified system that integrates all the components of a traditional data center: storage, computing, networking, and management. With its simple and integrated resource management, HCI enables organizations to build and operate data centers at a lower cost than traditional IT operating models.

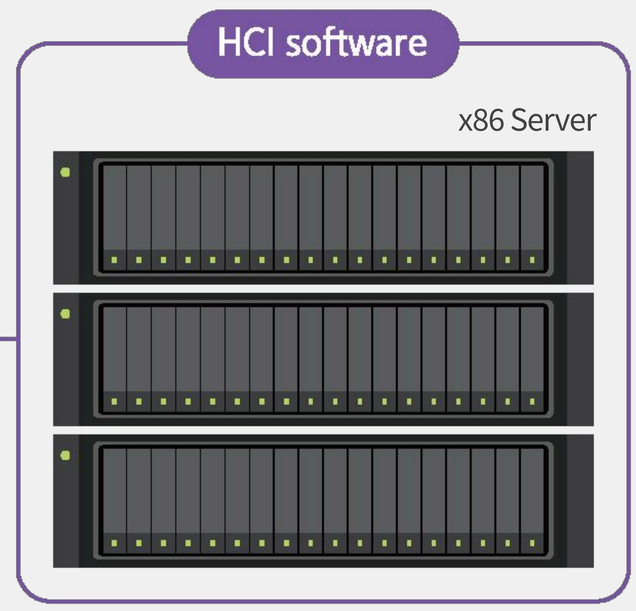
AS -IS
Lagacy Infrastructure



TO -BE
HCI

70% cost savings

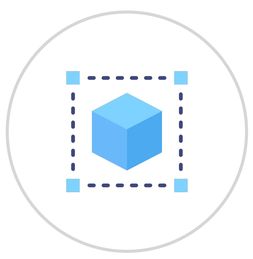
#Initial introduction fee
#expansion cost
#maintenance fee



ABLESTACK HCI

ABLESTACK HCI is an HCI-based data center construction solution.
When ABLESTACK HCI is installed on a commercial x86 server, virtual machines, storage, network, All cloud management features are available.

ABLESTACK HCI 's unique advantages



Simplified Hardware Architecture

ABLESTACK HCI 's simplified hardware architecture through virtualization effectively reduces a data center's initial build costs, maintenance expenses, and expansion costs.

Single Software License

All features and technical support provided by ABLESTACK HCI are offered with a single, perpetual software license at no additional cost.

High Availability and Web-Based Integrated Infrastructure

It provides an HTML5 web-based unified management environment, enabling operation of a high-availability data center without any additional external devices or software.

Diverse Virtualization and Cloud Functions

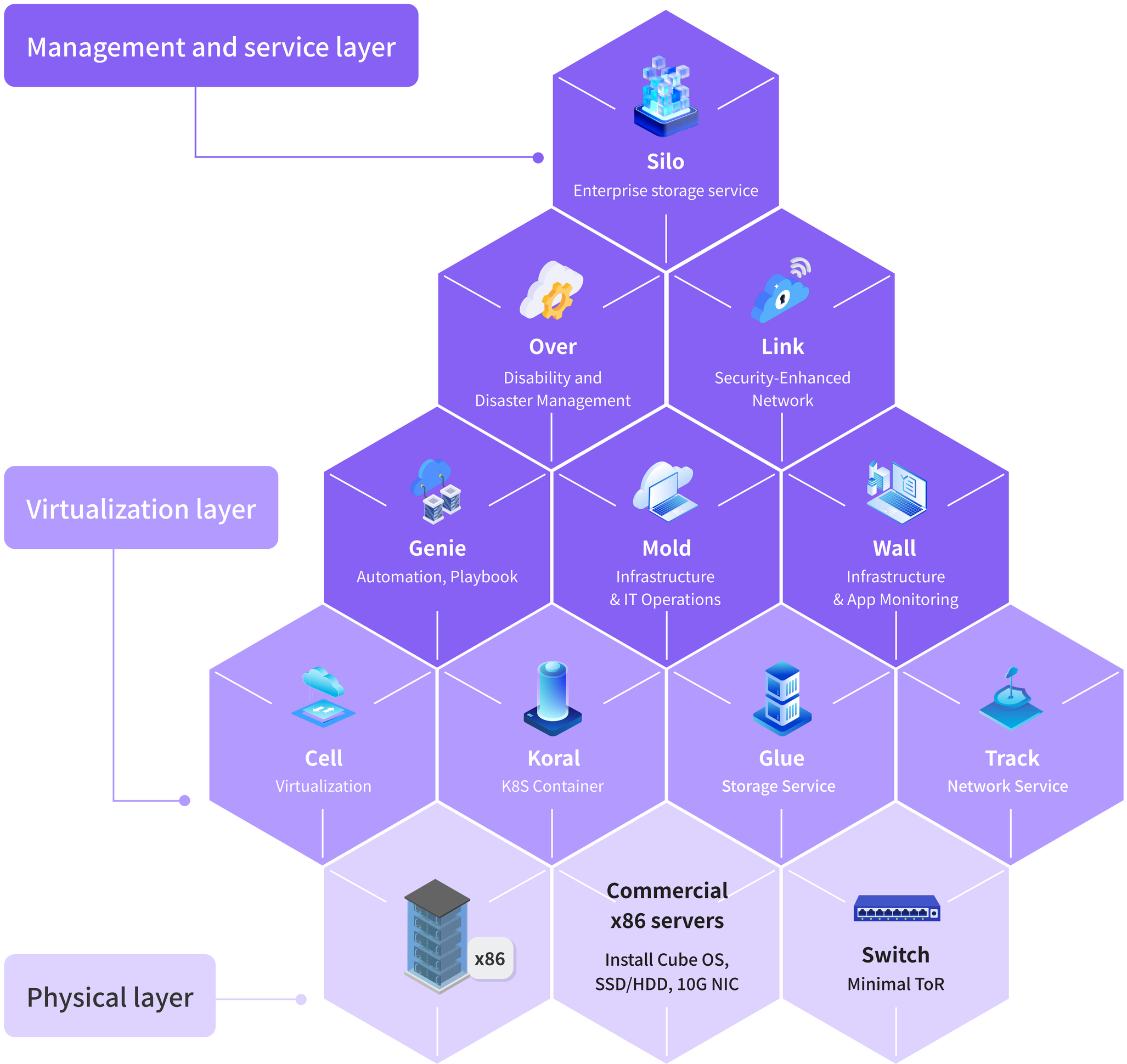
It provides all the necessary functions for cloud data center operation, including virtual machines, containers, virtual disks, virtual networks, virtualization, and self-service.

Minimum Operating HW Specifications (Based on 1 Node)

CPU	Intel Xeon Scalable 2.0GHz or higher, 1 Socket or more, 16 Cores or more
Memory	DDR4 ECC or higher, 128GB or more
HDD	OS Disk Usable 300GB or more (RAID1/5), DATA Disk SSD 2TB or more
NIC	10GbE 4 ports or more, 1GbE 2 ports or more, IPMI compatible Mgmt Port
	ABLESTACK HCI configuration requires a minimum of 3 nodes and a 10Gb ToR switch (2 switches for redundancy).

ABLESTACK HCI Components and Features

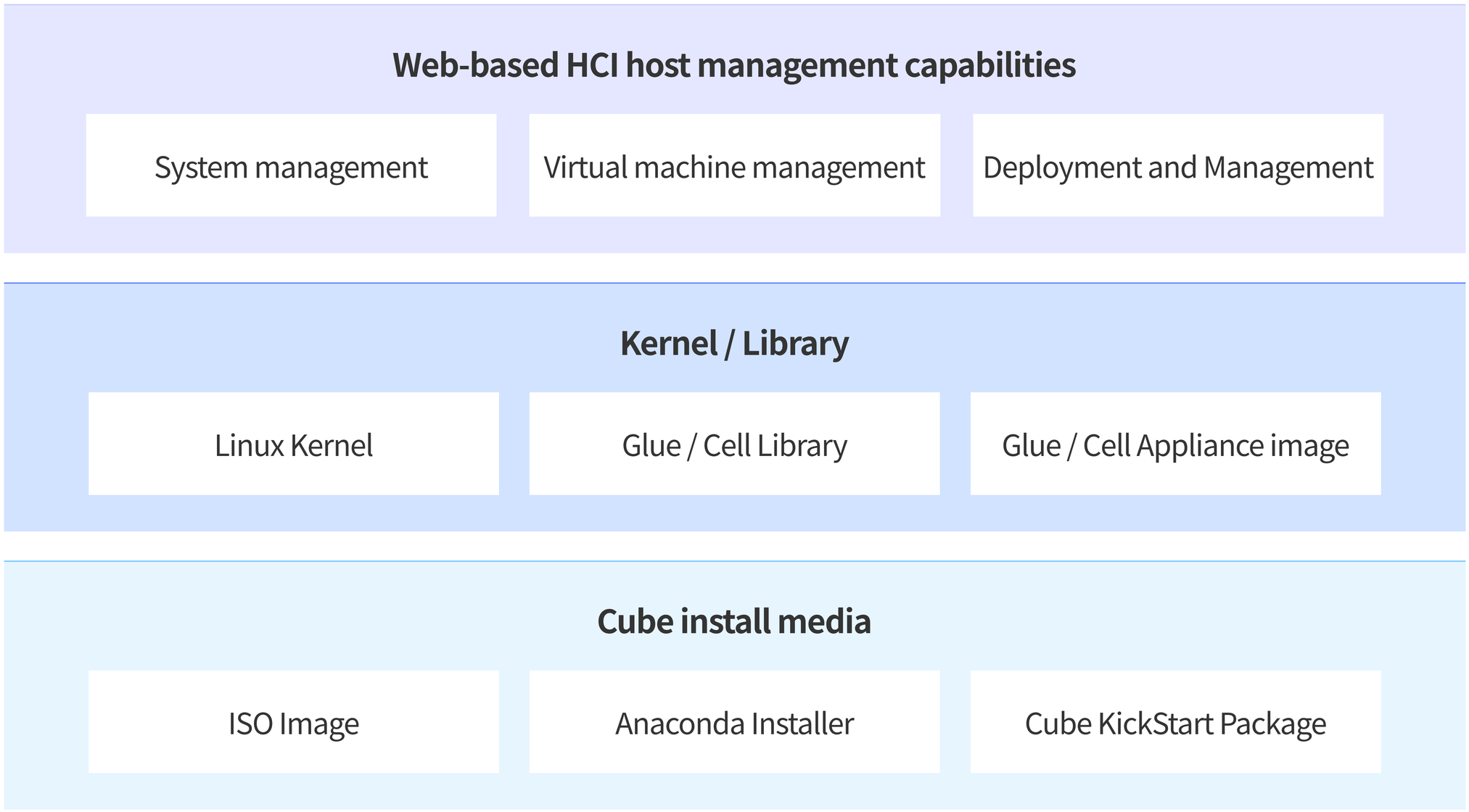
If you install ABLESTACK HCI on standard hardware equipment, you can use all the core functions necessary for data center operation.
Explore the various features that ABLESTACK HCI offers.



OS / Cube

Cube is an operating system that is installed to enable ABLESTACK HCI to operate on commercial servers. It is based on the Linux kernel and allows hosts to be managed and monitored via a web-based interface.

Cube Structure diagram



Cube Features

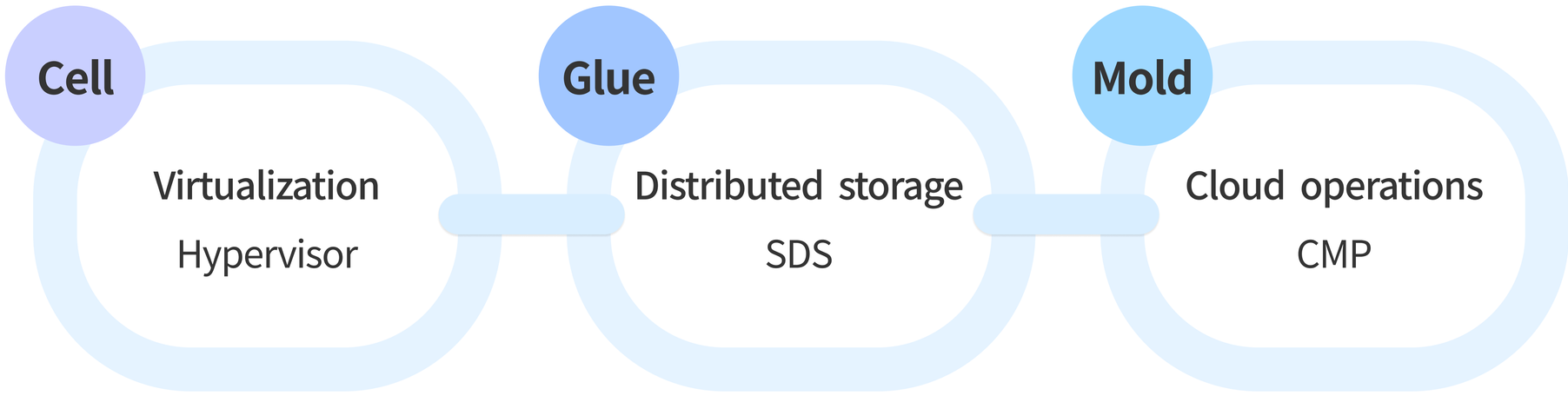
☑ **Installation media and installation wizard**	Provides bootable ISO image (can be converted to media such as USB separately) Provides Anaconda and an installation wizard (GUI)
☑ **Kernel and core libraries**	Includes a Linux kernel based on Enterprise Linux 9 Comes with a cell library and VM appliance image
☑ **Web-based management**	Provides web-based management of hosts, including virtual machines and containers, and offers various service management and host security management features.

Virtualization / Cell

Virtualization Cell hypervisor is ABLESTACK HCI 's basic hypervisor that can be used in an enterprise environment without a separate license.

HCI-embedded Hypervisor, Cell

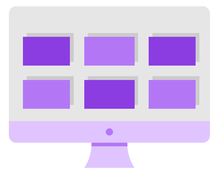
Combines seamlessly with ABLESTACK HCI 's Glue storage and all of Mold's cloud capabilities to maximize HCI simplicity. Experience a high-performance virtual server environment through Cell.



Cell Features and Benefits

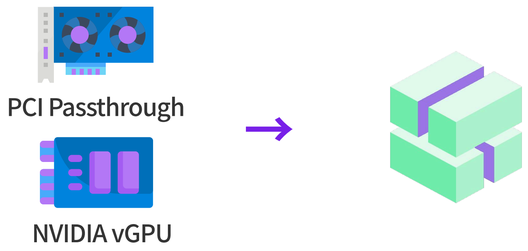
User Transparency

Because it is fully integrated into Mold and Glue, users can create a virtualized environment. There is no need to be conscious



Single control platform

With Mold, you can manage virtualization, security, infrastructure, networking, and self-service—all from a single platform.



Optimal performance and feature

Supports the latest technologies such as PCI Passthrough and NVIDIA GPU to deliver the performance and features required for demanding workloads.

Network security

Based on native bridge networking, it provides software-defined networking, network virtualization, and micro-segmentation to protect applications and data.

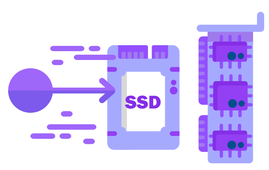
Distributed storage / Glue

Glue is the name of ABLESTACK HCI 's storage platform. It provides virtualized storage space using disks in the host, and you can check the operating status of the storage in real time.

Features and Benefits of Glue Storage

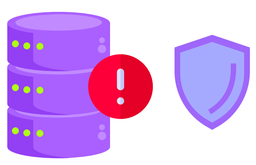
Glue is the name of ABLESTACK HCI 's storage platform. It provides virtualized storage space using disks in the host, and you can check the operating status of the storage in real time.

Local Data IO



IO on local disks configured with SSDs or PMEM accelerates the performance of virtual machines and applications.

Automatic identification of faults

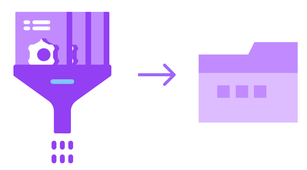


Through dynamic data selection and periodic data scrubbing, disk errors and bit rot are identified, and corrupt data is protected.

Self healing

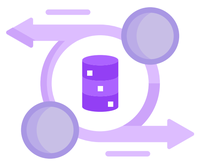
Data is automatically restored to ensure that services can continue to operate even in the event of a host or disk failure within the storage configuration.

Save storage space



By applying data deduplication and compression features, you can reduce data storage capacity without compromising performance or resilience.

Backup and Disaster Recovery



Built-in data recovery and snapshot features support backup and disaster recovery functions for data restoration.

Expand while operating

You can add host or disk resources without service interruption, even while the system is in operation.

QoS provided

QoS can be controlled on a per-virtual machine and per-application basis, ensuring throughput and providing the necessary performance for each app.

Low-cost, high-performance design

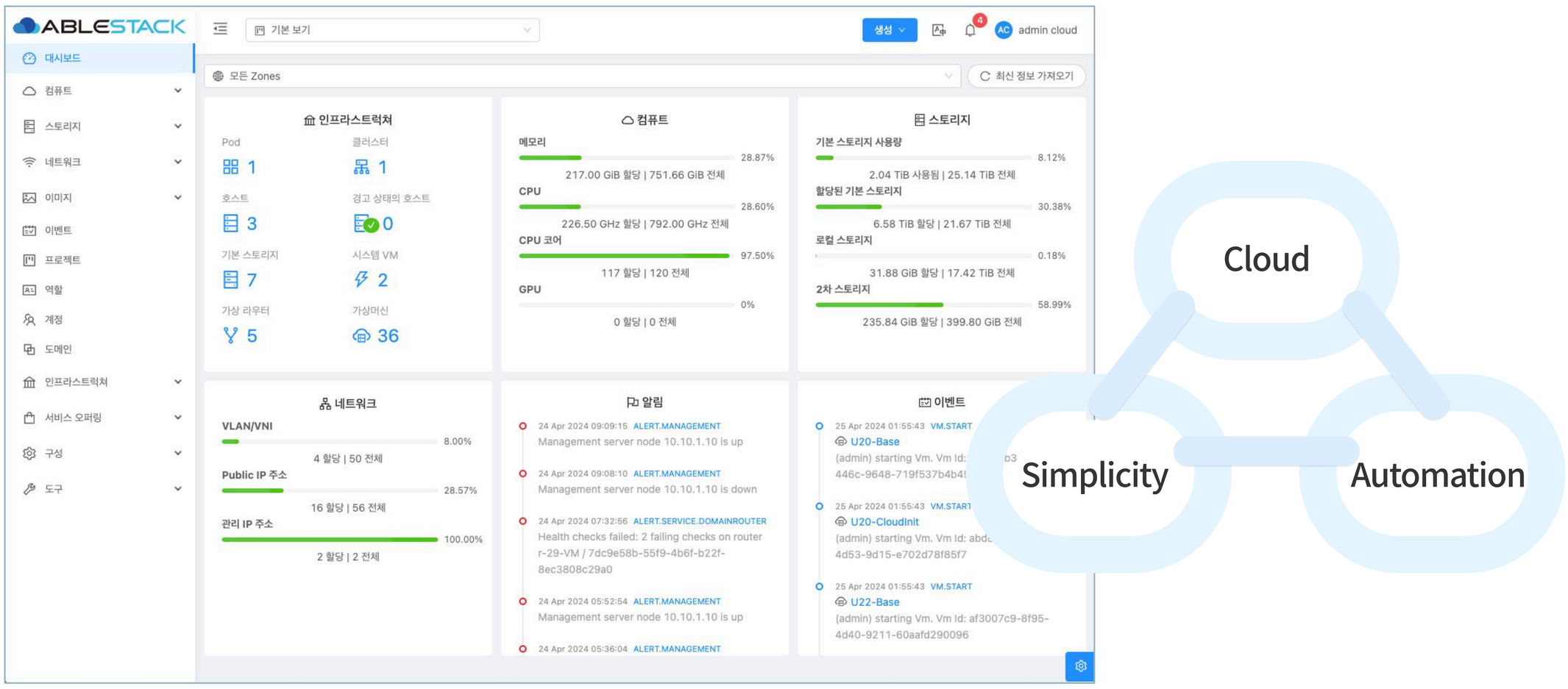
Designed to avoid wasting capacity or resources, it allows you to use high-performance infrastructure resources at a low operating cost.

Infrastructure and IT Operations / Mold

Mold is an administrative web console that helps you easily manage your IT infrastructure. Manage everything in your infrastructure, including virtual machines, volumes, networks, backups, and containers, from a single console.

Automate with one click, Mold

You can handle most tasks with a single click, automate the operation of your infrastructure and applications, and manage your infrastructure efficiently.



Mold Features and Benefits

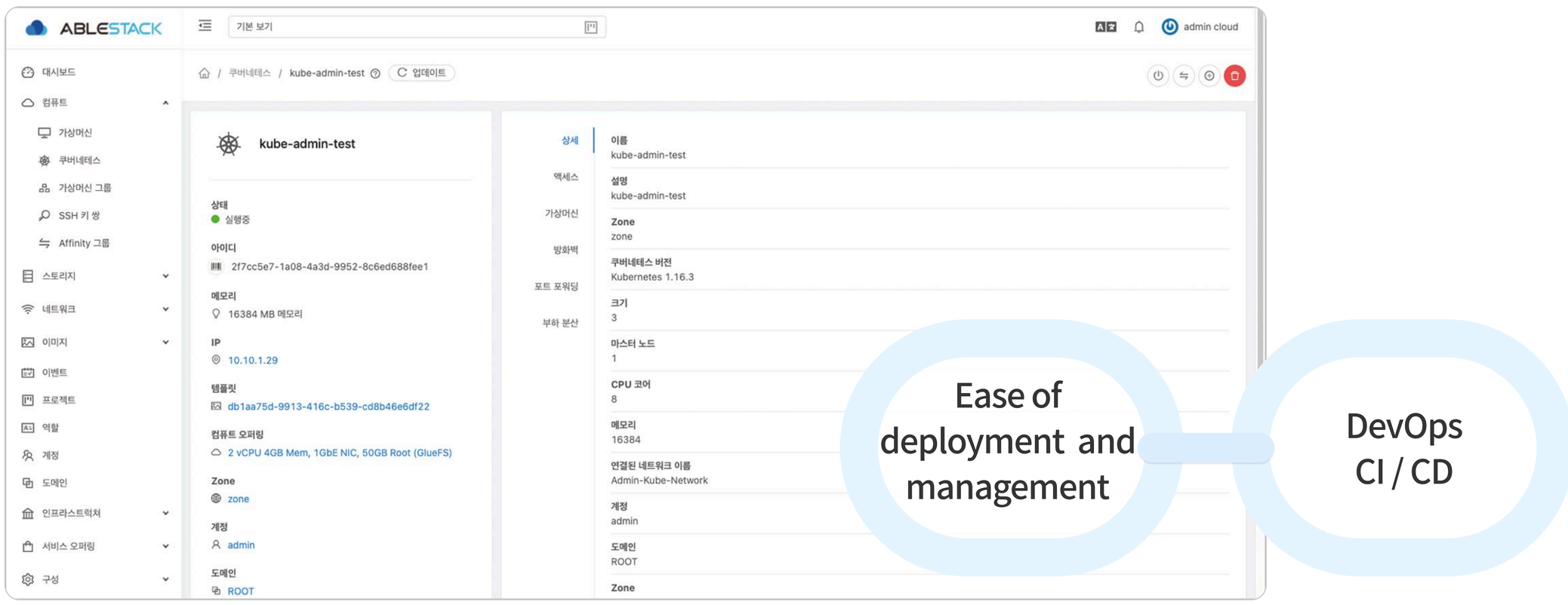
- ☑ You can manage all virtualization resources through a management console with an intuitive UI.
- ☑ We provide multi-tenant cloud services through self-service.
- ☑ Manage complex IT infrastructure with minimal effort.
- ☑ APIs allow you to automate user-level workflows and create automated provisioning with predefined code.

Kubernetes(K8S) / Koral

Koral helps you to quickly deploy and use Kubernetes, an enterprise container management platform. Simplify management tasks such as application provisioning, lifecycle operations and autoscaling with Koral.

Kubernetes Cluster, Koral

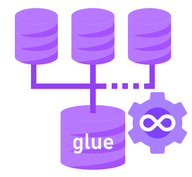
You can handle most tasks with a single click and automate the operation of infrastructure and applications, allowing you to manage your infrastructure efficiently.



Koral Features and Benefits

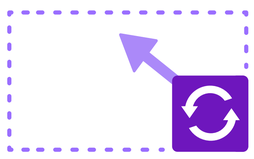
One-click simplicity

With just a single click, you can deploy a high-availability Kubernetes cluster and launch applications within minutes using the cluster.



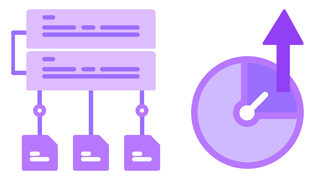
Persistent storage support

Supports persistent storage through a built-in CSI driver, integrating with storage volumes, files, S3, and Swift object storage.



Online expansion and autoscaling

Easily expand clusters by adding nodes online. Automatic worker node scaling is supported through autoscaling.



Provides high availability

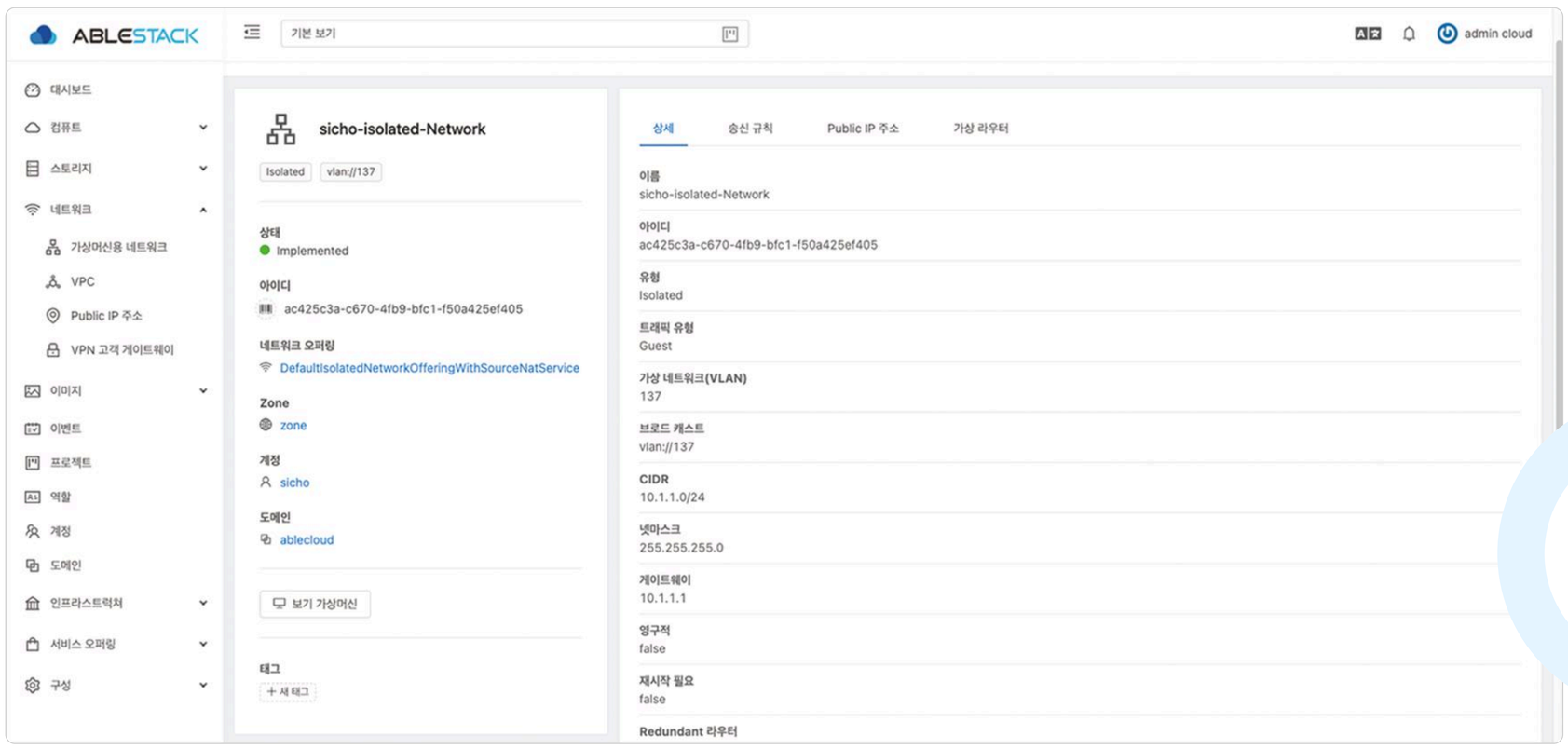
With master node redundancy, production applications can remain uninterrupted while upgrading the operating system version of nodes.

Virtual Networking / Track

Track constructs a virtualized networking layer on top of the physical network. Deploy a software-defined network with Track.

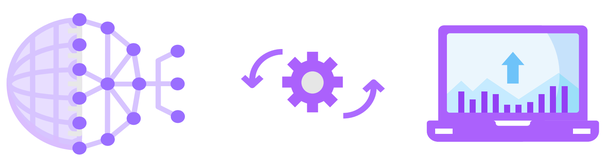
Overlay Virtual Networking, Track

It is a virtualized networking technology that overlays a physical network.



One-click deployment management

Track Features and Benefits

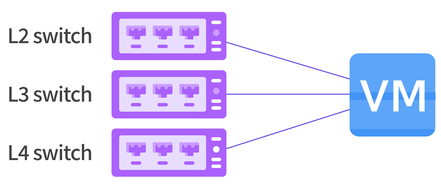


Easy deployment and management

By automatically deploying a virtualized network appliance with various switch functions, users can easily deploy the network services they want, and all management is possible via the web.

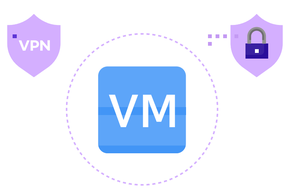
Increased security

Security can be strengthened by providing VPN and firewall, and only authorized external networks can be set to access the virtual machine.



Provides various network environments

By supporting all L2, L3, and L4 switches, various levels of network can be supplied to virtual machines.



Hybrid Cloud Offering

It provides a network with multiple subnets, enabling a hybrid cloud that is fully compatible with AWS VPC.

Monitoring platform / Wall

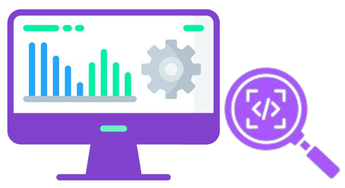
Wall is an integrated monitoring platform that monitors all infrastructure, user virtual machines, and applications that make up ABLESTACK HCI.

Infrastructure and application monitoring platform, Wall

Wall Features and Benefits

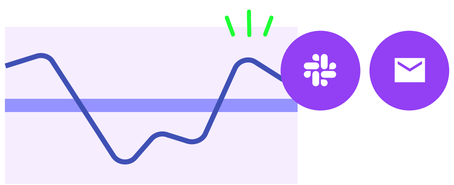
Live monitoring

Provides real-time monitoring information on the physical infrastructure and user virtual machines that make up ABLESTACK HCI.



Application monitoring

Monitoring can be done in a variety of ways by customizing the DB, web application, etc. that the user wants to monitor.



Threshold alarm

Based on the threshold settings, email or social media such as Slack Providing alarms allows quick response to issues.

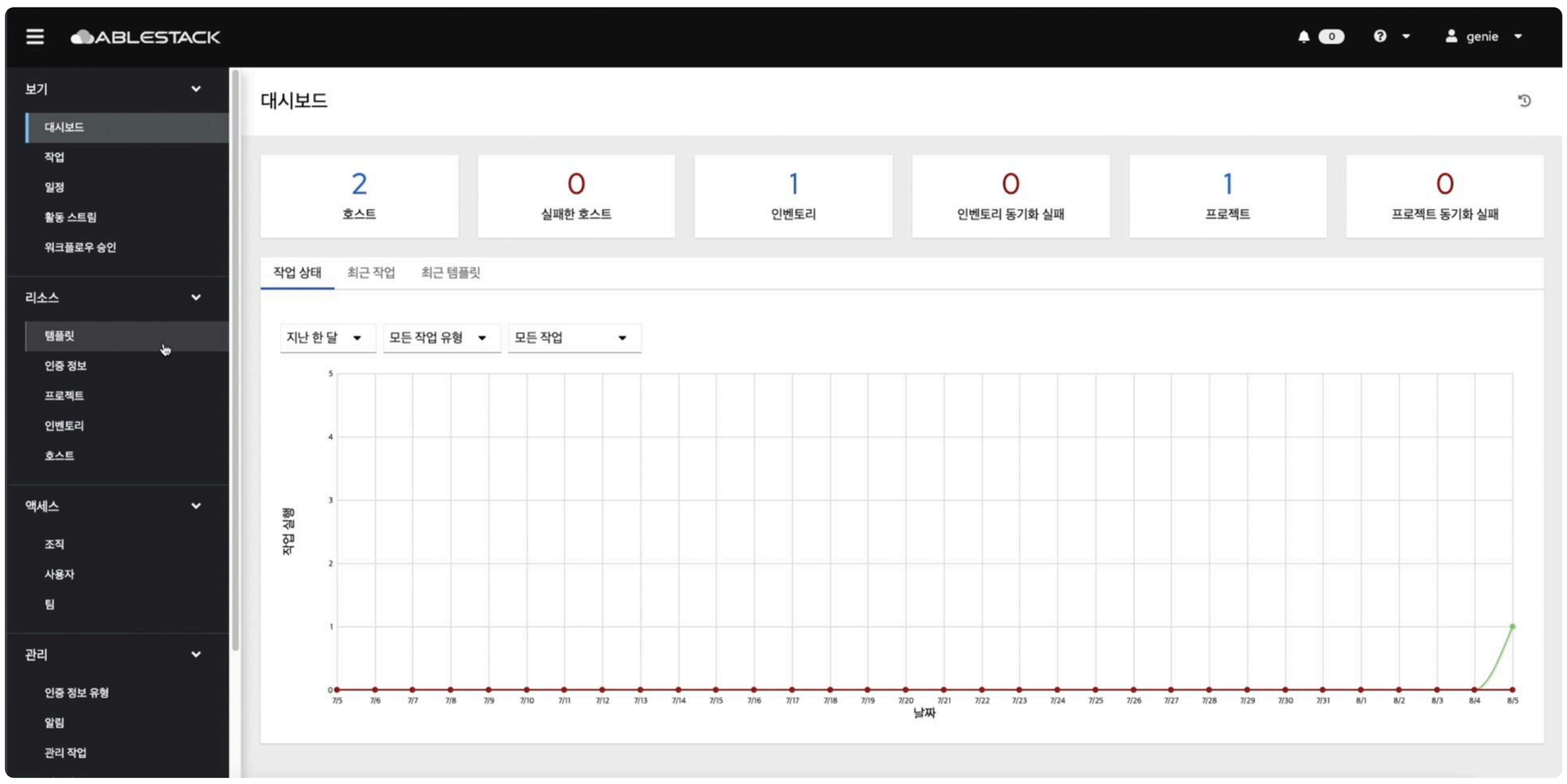
Extended Forecast

Through usage statistics for ABLESTACK HCI clusters provides prediction information on when to expand.

Automate configuration & deployment / Genie

Genie is a multi-cloud IT automation platform that supports automatic deployment of virtual machines, applications, and status monitoring in a multi-cloud environment based on user-created workflows.

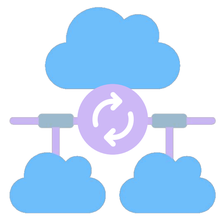
Multi-Cloud IT Automation Platform, Genie



Genie Features and Benefits

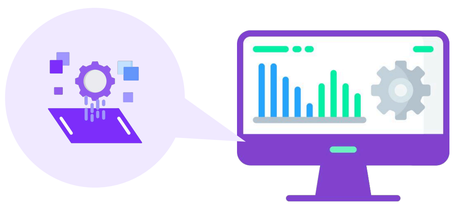
Workflow-Based Automation

Supports deployment automation for virtual machines and application sets using manifest information written in a workflow format.



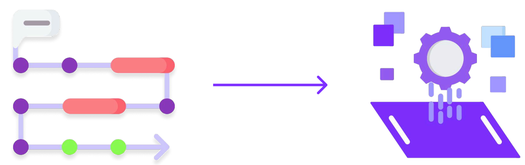
Multi-Cloud

Provides automation not only for ABLESTACK HCI but also for various cloud services like AWS, GCP, and Azure.



Deployment Resource Status Monitoring

Supports status monitoring for automatically deployed resources and applications, allowing you to check the status of your deployed services.



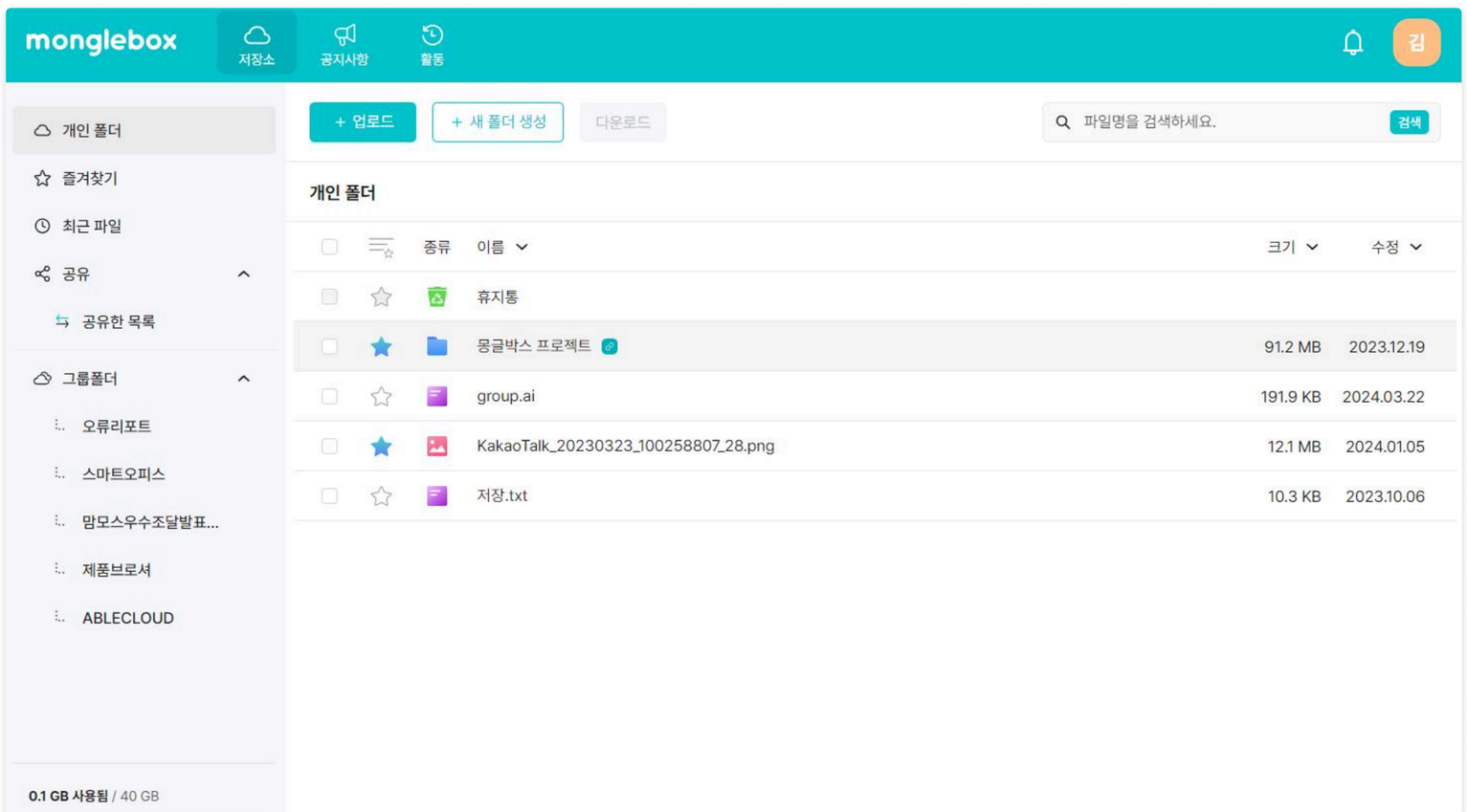
Pre-defined Workflows

Offers a pre-defined workflow, providing an environment where various open-source platforms can be easily deployed and used.

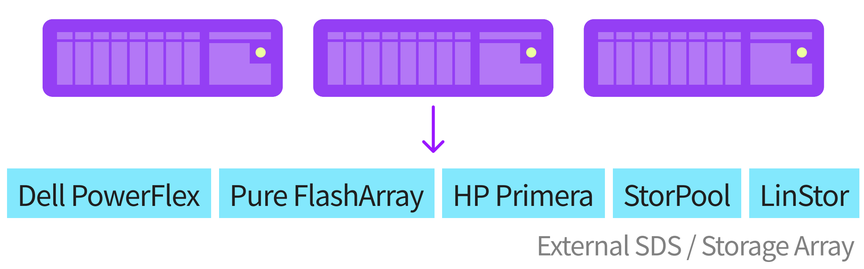
Enterprise Storage Service / Silo

Silo is a platform that, through ABLESTACK HCI , provides various storage functions that companies need while operating IT services. It increases the flexibility of storage expansion and enhances the usability of ABLESTACK HCI in various ways.

Enterprise Storage Service, Silo

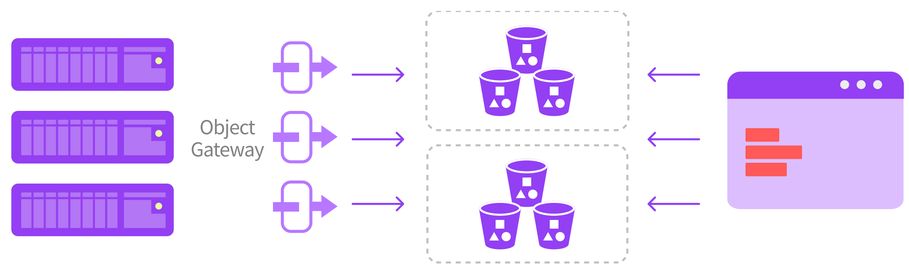


Silo Features and Benefits



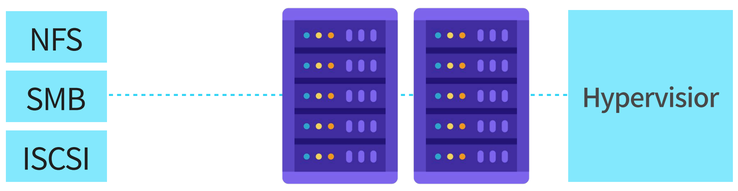
High Storage Expansion Flexibility

HCI can be configured by connecting various commercial SDSs other than ABLESTACK Glue, providing flexibility in expansion.



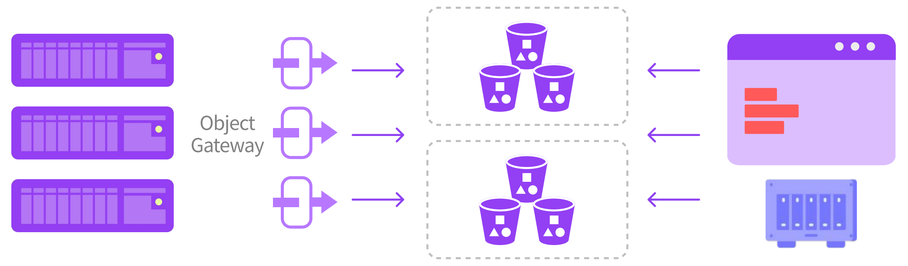
Storage for Emerging Workloads

By providing an object storage gateway and browser, data management for big data / AI, etc. is possible.



Bare Metal / Hypervisor Connection Support

Supports connection to bare metal servers and other hypervisors by creating various storage gateways such as NFS, SMB, and ISCSI.



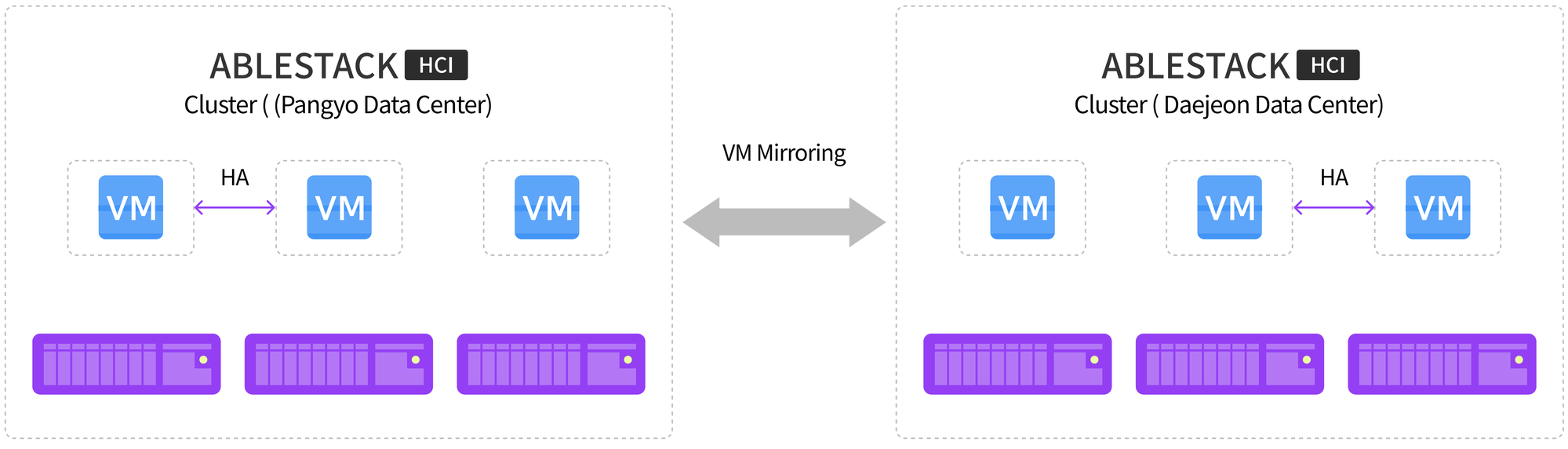
Web based data management

Storage and data management is possible through web browsers such as object storage browser and web based NAS.

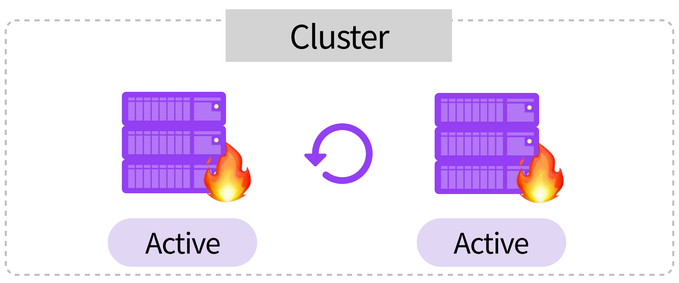
Disability and Disaster Management / Over

Over is a recovery platform to respond to various failures and disaster situations that may occur in ABLESTACK HCI 's virtual infrastructure and applications, effectively protecting the company's mission critical applications.

Fault/Disaster Recovery for Mission Critical Applications, Over

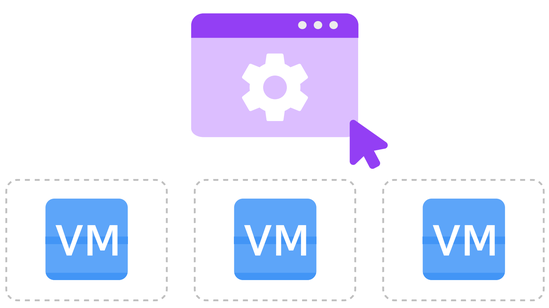


Over Features and Benefits



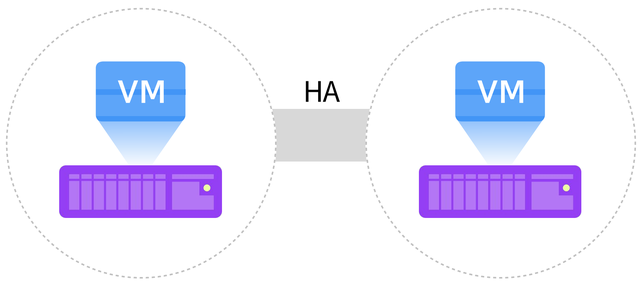
Active-Active DR

All clusters operate in an active state and support mutual DR configuration to provide high availability.



DR per virtual machine

Efficient DR management is possible by supporting DR settings on a virtual machine basis through the UI, and status monitoring is supported on a virtual machine basis.



Virtual machine redundancy support

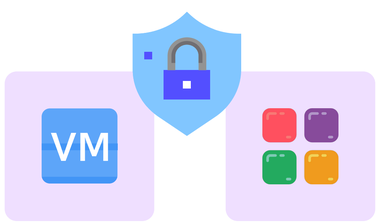
Supports server redundancy to ensure uninterrupted operation of mission critical applications.

Security-Enhanced Network / Link

VPC, Micro Segmentation, Link

Link is based on a highly visible, Zero Trust security policy, providing a complete defense environment against attacks on virtual machines and applications while supporting network connections with various public clouds.

Link Features and Benefits



Applicable to various environments

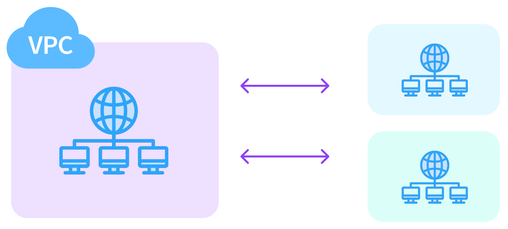
Easily create and enforce granular security policies between workloads in various cloud infrastructure environments such as virtual machines and containers.

High-level security environment

By blocking horizontal movement between virtual desktops, consistent desktop isolation is possible.

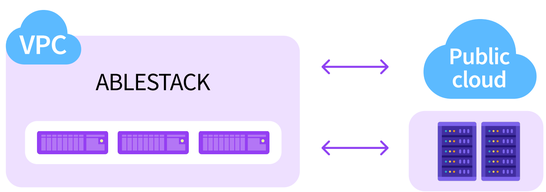
High visibility security

You can create highly visible security policies and quickly apply them, allowing you to consistently manage access control to firewalls and applications.



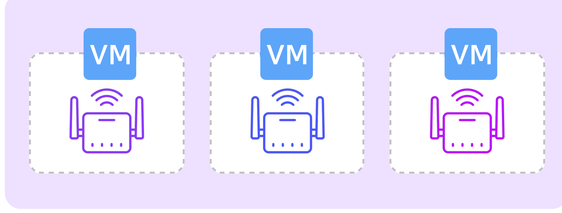
Integrating VPC networks with existing networks

By providing a private network gateway within the VPC network, integration of existing networks and VPC networks and integration with external networks is possible, enabling flexible cloud network configuration.



Supports Site to Site VPN connection

It provides a built-in Site to Site VPN that provides connection between the VPC network composed of ABLESTACK HCI and the VPC network of the public cloud, and IPSec VPN of an external data center.



External VNF appliance integration

It supports integrated management of various open source routers and commercial routers provided as virtual machine-type appliances, providing high scalability for virtual networks.

Deployment Editions & Expected Effects

ABLESTACK HCI, available in Standard and Enterprise editions, provides up to 85% cost savings over VMware's 5-year subscription model with a perpetual license. It's an ideal choice for efficient infrastructure and lower costs.

ABLESTACK HCI Edition Configuration

License Type	Solution	ABLESTACK v4.0	
	Edition	HCI_Standard	HCI_Enterprise
Perpetual	Components	Cube Cell Glue Mold Track Wall	Cube Cell Glue Mold Track Wall **Koral** **Genie** **Silo** **Over** **Link**
Subscription	VMware Product	**VMware vSphere Foundation (VVF)** ▪ vSphere Enterprise Plus - vCenter Std - Tanzu - ESXi ▪ Aria Suite Enterprise - Aria Suite Lifecycle - Aria Operations - Aria Operation for Logs ▪ vSAN(250GiB/Core)	**VMware Cloud Foundation(VCF)** ▪ vSphere Enterprise Plus - vCenter Std - Tanzu - ESXi ▪ Aria Suite Enterprise - Aria Suite Lifecycle - Aria Operations - Aria Operation for Logs - Aria Automation ▪ vSAN(1TiB/Core) ▪ NSX Networking / HCX / AON
Based on VMware's 5-year subscription		**approx. 72% savings**	**approx. 85% savings**

Expected Effects

Reduced footprint for deployment	Deployment Cost Savings	Management Cost Reduction	Rapid Expansion
75%	**80% ~ 30%**	**40%**	**50%**

Pure Software Platform	→	Reduced hardware burden
Deployable Infrastructure with a Necessary Development Environment Anytime	→	Perfectly handles various emerging workloads
Integrated Management Platform	→	Integrated management of heterogeneous hypervisors is possible
Unified Technical Support Channel	→	Ensures high system availability with prompt technical support in the event of a failure

Customer IT Innovation

ABLECLOUD

We provide an environment where companies can easily and quickly build and manage their own data centers. With **ABLESTACK** HCI , reduce the unnecessary costs you pay for IT infrastructure management. And focus on your products and services.

HCI's first GS 1st grade certification

Nara Market Procurement Registration

Korea's first HCI to receive Citrix Ready certification

Virtualization management sector Obtaining security function certification

Patent Acquired For the System and Method for Provisioning HCI

KONEPS Digital Service Mall

Product Name	Description	Item ID Number
ABLESTACK v4.0 (1Core)	Software (S/W) that allows for easier and faster configuration of virtualization and cloud environments.	25610079

How do we realize an innovative cloud data center?

01 Multi/Hybrid Cloud

We provide a single platform that allows you to manage various hypervisors in one cloud environment, use private and public clouds together, and support a Kubernetes-based container environment.

02 Automation of Data Center Operations

We aim to build a self-managing data center where all processes, from platform installation on the server to application execution, are automated. It no longer requires direct intervention from experts.

03 Application Management Automation

You can develop, test, and deploy applications at any time, with automated lifecycle management. The system is intelligent, automatically scaling up based on operational status and actively responding to usage.

04 Cost Reduction

We minimize the TCO of your enterprise data center, optimize spending on public clouds, and shorten application development time. The single platform enhances management capabilities and increases ROI with a more stable system.

05 Guarantee of Freedom of Choice

You no longer need to depend on a specific vendor's servers, network equipment, storage, or applications. We provide the same platform for all commercial servers and guarantee freedom of choice through open-source-based turnkey software.

※ If you apply for a trial, we will provide a demo environment. For more details, please refer to www.ablecloud.io.

ABLECLOUD

All about data & cloud

KONEPS Digital Service Mall
Korea ON-Line
E-Procurement System

Product Name	Description	Item ID Number
ABLESTACK v4.0 (1Core)	Software (S/W) that allows for easier and faster configuration of virtualization and cloud environments.	25610079

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