KAYTUS

New Generation Hyper-converged Infrastructure System

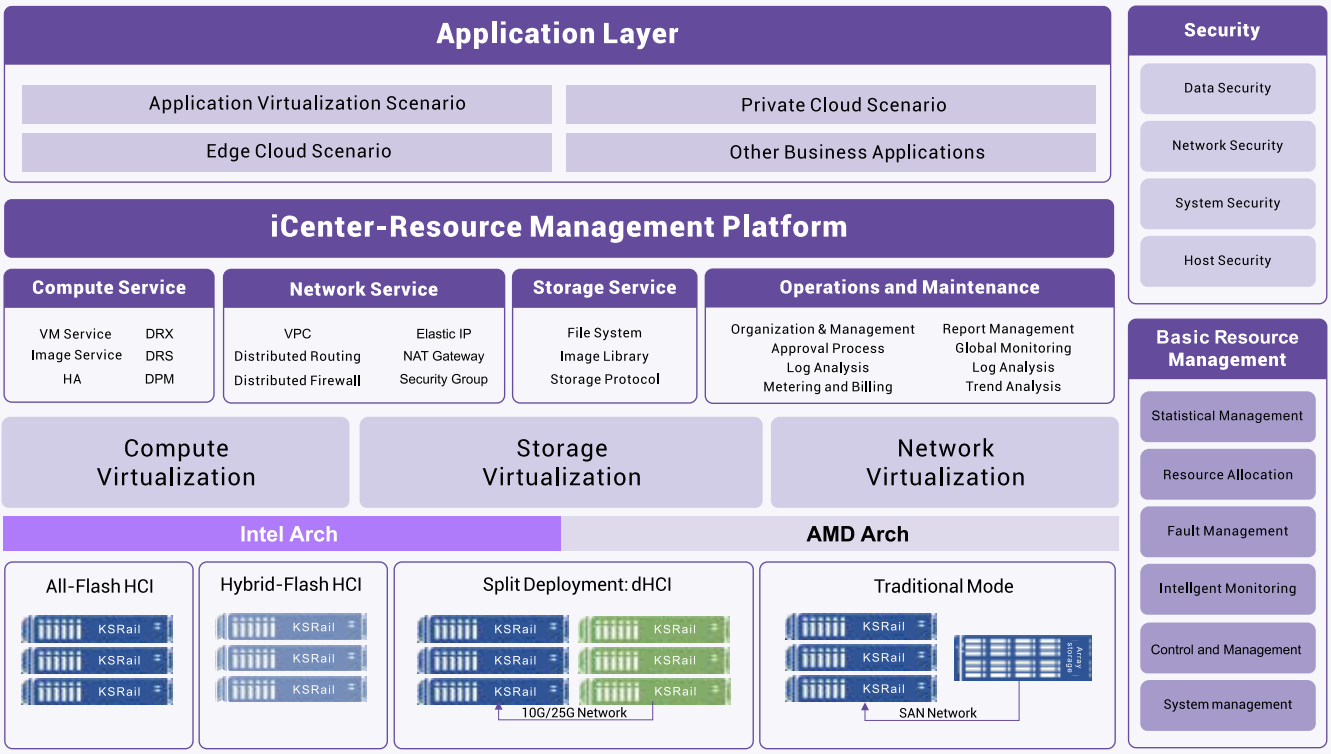
KSRail System

Product Overview

The KSRail system is a new-generation hyper-converged infrastructure (HCI) system developed for software-defined data centers (SDDC). Using a hardware reconstruction platform and software-defined system, it integrates computing, storage, network, security, operation and maintenance monitoring and other functions, and features decoupling, reconfigurability, automation, integrity, and elasticity. It can help users quickly build cloud data centers, reduce TCO and complexity, and enable flexible and fast delivery.

KSRail series products provide various hardware platforms such as general-purpose 1U servers, general-purpose 2U servers, high-density 2U servers, and high-end 4U servers.

Product Architecture



Core Components

Compute Virtualization

KSRail uses the self-developed server virtualization system - KayGrid, which creates a high-performance, high-availability, scalable, manageable, and flexible virtual server infrastructure. KSRail supports diverse advanced features (such as DRS, HA, DRX, GPU passthrough, vGPU). It enhances the performance and stability of VMs and meet the requirements of high-performance computing applications. In addition, the management and operation & maintenance efficiency of VMs can be further improved through KSRail management platform.

Storage Virtualization

KSRail supports the full-stack RDMA network, as well as iSCSI, ISER, NVMe over RoCE and FC protocols. It has feature characteristics such as hot and cold data tiering, I/O localization, link aggregation, and disk roaming. A large number of technical optimizations and stability tests have been carried out for the hyper-converged architecture of this product. It is equipped with multiple fault-tolerant and fault-redundancy mechanisms to comprehensively ensure the efficient and secure storage of users' data.

Network Virtualization

KSRail has built-in self-developed distributed SDN software, SmartFlow, which supports intelligent acceleration. It offloads the data plane of the SDN network to the smart network interface card (NIC), significantly improving the network forwarding performance and saving CPU resources. It has functions such as distributed switch, distributed route, distributed gateway, distributed firewall, security group, L2 bridge, L2/L3 traffic diversion, and port mirroring. Through virtualized network functions such as gateways and firewalls, it enables secure interconnections both inside and outside the virtual network. Users can quickly and flexibly deploy a unified enterprise network across multiple data centers.

Unified Management Platform

The unified management platform provides efficient management of computing, storage, networking, and security resources. It supports multi-architecture resources with diverse CPU chips, simplifying the complexity of management and operation. It provides real-time cluster monitoring, health diagnostics, monitoring alerts, a nd self-healing capabilities. In addition, it also supports multi-cloud management and cross-cloud migration. For system administrators, it offers an intuitive graphical interface and customizable dashboards for monitoring virtual machine statuses. The platform also supports live upgrades and patches, ensuring business continuity without disruption.

Product Features

Convergence and Simplicity

KSRail provides a unified management platform that supports multi-architecture clusters. The full lifecycle management of all hardware, software, and virtualized resources in hyper-converged infrastructure can be done through the unified platform. It effectively reduces the difficulty for customers in usage and management, as well as lowers operational costs.

Optimal Reliability

KSRail provides comprehensive data protection and business continuity solutions across multiple levels, including applications, hosts, clusters, and sites, such as non-disruptive snapshots, backups, CDP, HA, DRS. These solutions have been thoroughly tested and validated across various scenarios to ensure maximum data security and business continuity.

Outstanding Performance

KSRail provides a unified management platform that supports multi-architecture clusters. The full lifecycle management of all hardware, software, and virtualized resources in hyper-converged infrastructure can be done through the unified platform. It effectively reduces the difficulty for customers in usage and management, as well as lowers operational costs.

Open Ecosystem

KSRail supports Intel and AMD processors and has carried out extensive adaptation and solution development with over 100 database/middleware/application system suppliers, thereby promoting the prosperity of the ecosystem.

Application Scenarios

Cloud Data Center

KSRail is an integrated infrastructure that combines software and hardware, allowing users to quickly build software-defined data centers like building with blocks. It significantly reduces construction cycles and resource investment, and improves the efficiency of business system deployment. It can be widely applied across industries, such as enterprise, energy, transportation, healthcare, education, finance, and telecommunications.

Branches and Edge

Branch and edge scenarios require data center infrastructure to be more agile, reliable, user-friendly, and self-healing. KSRail supports deployment with just two nodes to further reduce usage costs. Features such as high availability and automatic data recovery can enhance business continuity in unaided situations. Additionally, IT operations staff at the headquarters can easily monitor the status of branch and edge clusters and allocate resources remotely.

Active-Active/Active-Standby Data Centers

KSRail supports tiered disaster recovery, which provides varying levels of data protection and business continuity solutions based on the criticality of business systems. These include scheduled backups, real-time backups, off-site backups, disaster recovery for primary and standby centers, active-active three centers, and business continuity plans for two locations with three centers.

Benefits

Quick launch and simplified management

- Provide factory pre-integration, achieving rapid deployment and delivery of integrated hardware and software.
- Shorten the launch periods of service systems, helping migrate services to the cloud rapidly.
- Simplify O&M, managing and scheduling software and hardware resources in a unified manner.
- Manage heterogeneous resources in a centralized manner to improve the O&M management efficiency

Controllable economy and efficient output

- Provide all-in-one license, without limits on functions and storage capacity.
- Purchase nodes on demand to reduce the total cost of ownership (TCO).
- Save server room space and electricity consumption, improving resource utilization.
- Support uninterrupted and hot expansion, improving service system continuity

Stable & efficient operation and flexible expansion

- Provide dynamic resource expansion and blue screen detection to ensure stable operation of the system.
- Achieve intelligent tiering of cold and hot data, providing sub-millisecond storage services.
- Offer multi-replica technology, automatic recovery of hardware faults, and data balancing.
- Storage capacity and performance can grow linearly and expand flexibly.