



Efficient | Resilient | Reliable | Innovative

DCS Full-Stack Data Center Solution

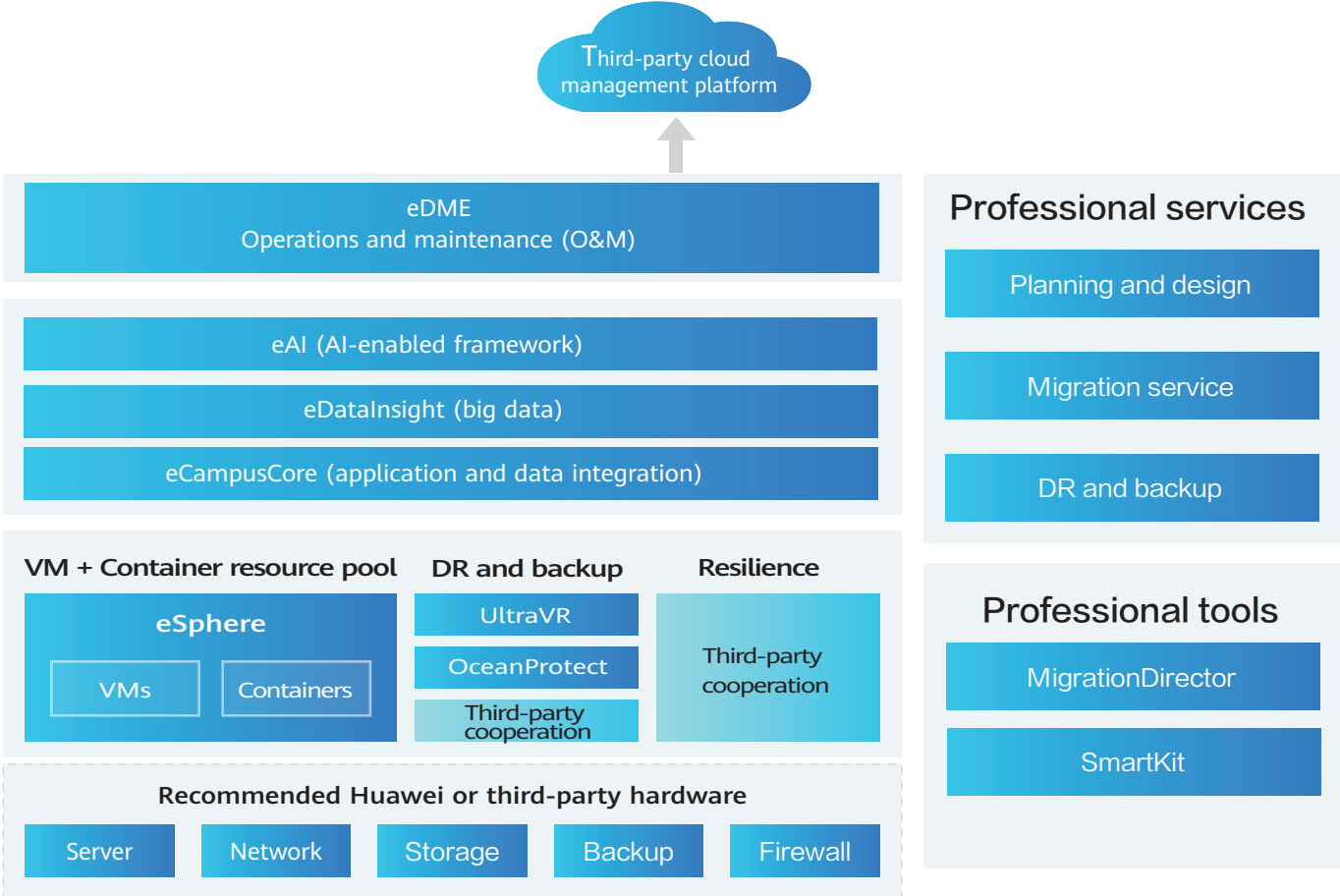


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01 / Solution Overview

Huawei's DCS full stack data center solution integrates with third-party cloud management software to provide services to small- and medium-sized data centers. Featuring a layered decoupling and modular architecture, the solution offers advanced resource pooling for virtualization and cloud scenarios. It enhances resource utilization and reduces management complexity, allowing enterprises to build lightweight, flexible, agile, and efficient data center infrastructure, paving the way for digital transformation.



eDME

The full-stack management software is designed for data centers, supporting access and management of storage, compute, and network resource pools and enabling end-to-end (E2E) intelligent O&M. It interconnects with third-party cloud management systems to provide multi-tenancy and service-oriented capabilities.

eDataInsight

The key component of the DCS big data solution helps build a lightweight, flexible, converged, and open big data platform centering on data collection, storage, compute, management, and usage.

MigrationDirector

The VM migration software migrates data from homogeneous or heterogeneous platforms to DCS.

eSphere

The virtualization and container resource pool management software virtualizes servers, storage, and network to form flexible virtual machine (VM) and container resource pools, enabling automatic resource orchestration and scheduling and management.

eAI

The platform provides full-process service capabilities for AI applications, including model development, training, fine-tuning, inference, deployment, and management.

eCampusCore

Unified southbound APIs enable device access and data processing. The comprehensive service capability openness supports quick development of service applications.

02 / Highlights



Efficient

Industry-leading performance, accelerating core services

- Ultimate VM and container performance
- 30% higher performance with E2E NoF+ networks
- 0 packet loss over long distances with premium network

Resilient

Unique network-storage-compute linkage with 99.9% ransomware detection rate

- Multi-layer linkage between network, storage, and compute
- Comprehensive protection and fast recovery

Reliable

All-scenario DR and backup services, ensuring highly reliable data centers

- RPO = 0, RTO in seconds
- 0 freezing during faulty VM failover
- Deduplication ratio of up to 72:1

Innovative

Continuous innovation to digital-intelligent convergence

- VM and container dual stacks
- Big data + AI full-stack
- Intelligent O&M

03 / Key Technologies

Efficient

Light initial outlay

Two-node setup allows for smooth scaling to large-scale clusters. A three-node setup supports big data, as well as the addition of features for tenancy, full-stack management, containers, backup, and DR in a modular fashion.

Decoupled resource layers

Independent construction of compute, storage, and network layers with on-demand expansion.

Data convergence

One solution offers both block and file services from a shared pool. A single data copy can be efficiently accessed through multiple protocols like NFS, HDFS, and S3, without migration. The management platform oversees the storage resource lifecycle, for enhanced efficiency.

E2E NoF+

End-to-end support for NoF+ networks offers full-stack control and 30% higher performance.

iLossless-DCN

Huawei's proprietary iLossless-DCN algorithm doubles computing power and network throughput, ensuring zero packet loss in metropolitan active-active scenarios.

Deep hardware and software integration

Intelligent chip combined with Huawei's host OS and virtualization engine enables collaborative optimization for peak performance of VMs and containers.

Industry-leading storage performance

Self-developed high-performance hardware with FlashLink® algorithm and efficient protocols supports up to 21 million IOPS, delivering leading storage performance.

Network overlay SDN

Hardware switch-based SDNs create reliable, easy-to-maintain virtual networks for data centers, achieving 99.999% network reliability. Issues can be identified in 1 minute, analyzed in 3 minutes, and resolved within 5 minutes.

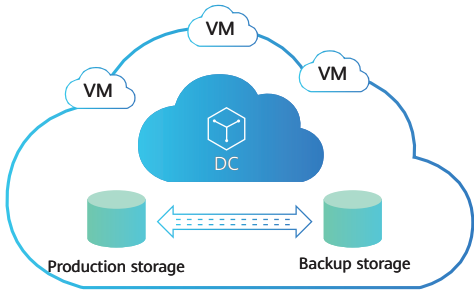
Resilient

Four lines of defense

1. Ransomware detection and interception; 2. Secure snapshot recovery in seconds; 3. Local backup recovery in hours; and 4. Rapid restoration of air gap isolation data.

VM snapshot and full-scenario backup

Online snapshots are supported without affecting performance during creation. We support backups for files, operating systems, virtualization platforms, and databases, with options for local, intra-city, remote, or cloud storage. A backup instance can handle up to 10,000 VMs with a deduplication ratio of up to 72:1.



Reliable

Enterprise-class storage components

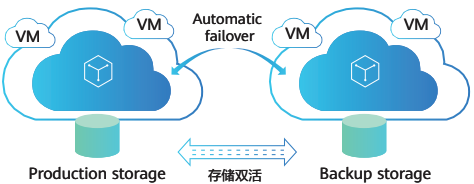
The storage system detects and intercepts ransomware, offering recovery for production snapshots in seconds and recovery for local backups in hours.

Virtualization HA of clusters

If the host of a VM fails, the VM automatically switches to a functioning host to maintain service continuity.

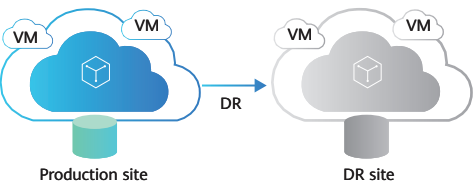
Metropolitan active-active DR

HyperMetro (Huawei's active-active storage), UltraVR (DR management software), and the VM HA and DRS features of FusionCompute work together to create an active-active DR solution, with two production sites serving as DR sites for each other. Automatic failover occurs if either site fails.



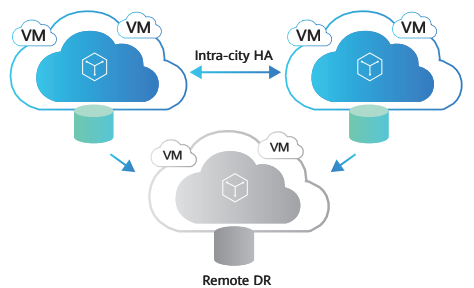
Array-based replication DR

VM data is copied from the production site to the DR site through array-based replication. UltraVR registers VMs at the DR site with the virtualization platform for automatic startup if the production site fails.



Geo-redundant 3DC DR

A geo-redundant DR solution (whether in star or non-star deployment) consists of three data centers: a production center and a DR center in the same city, plus an additional DR center in a different city. This setup offers multi-level protection for data and workloads. In the event of a disaster, services can quickly switch to the intra-city DR center. If both the production center and intra-city DR center are affected, services can be initiated at the remote DR center to maintain continuity.



Innovative

Computing power convergence

Dual-stack deployment of containers and VMs which share the same resource pool; hybrid deployment of Intel, Kunpeng, Phytium, Hygon, and AMD clusters.

Multi-tenant service

eDME supports administrator and tenant modes. Users can choose from unified or self-service management as required, or smoothly transit from administrator mode to multi-tenant mode.
eDME cooperates with third-party cloud management systems to implement service-oriented capabilities such as custom approval and metering & billing, satisfying the fine-grained management and control needs of enterprises.

Application-data integration

eCampusCore provides IT/OT convergence, pre-integrates with over 500 devices, and enables quick connection of multiple terminal types, simplifying device integration for fast delivery. In addition, it uses the API gateway to provide unified open device and data services, enabling service application innovation.

Big data platform

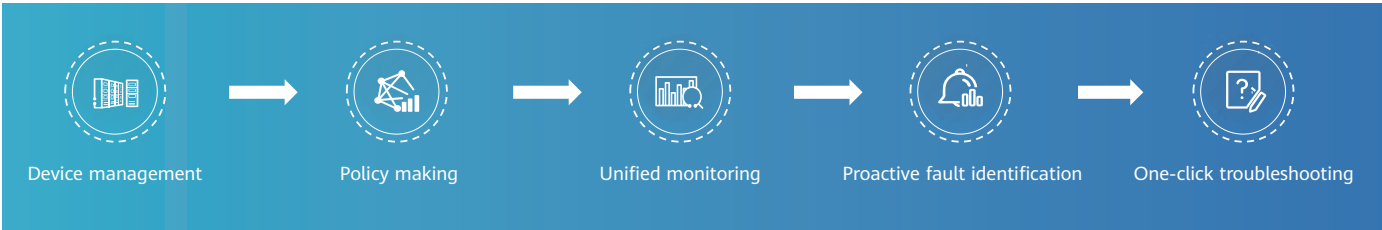
eDataInsight provides lightweight and flexible big data services. It requires just three physical machines for startup and supports elastic expansion. It also offers deployment of coupled storage-compute virtualization and decoupled storage-compute virtualization. Additionally, eDataInsight supports customized data integration apps, data processing operators, and user-defined data orchestration for effortless user experiences.

Large-model development platform

eAI acts as a one-stop platform covering the entire AI development process and supports navigational modeling. It provides a full-stack tool chain that converts data into knowledge, all while enabling global availability of data assets. It also supports automatic data cleansing, automatic labeling of training corpuses, and automatic generation of training corpuses and industry knowledge bases.

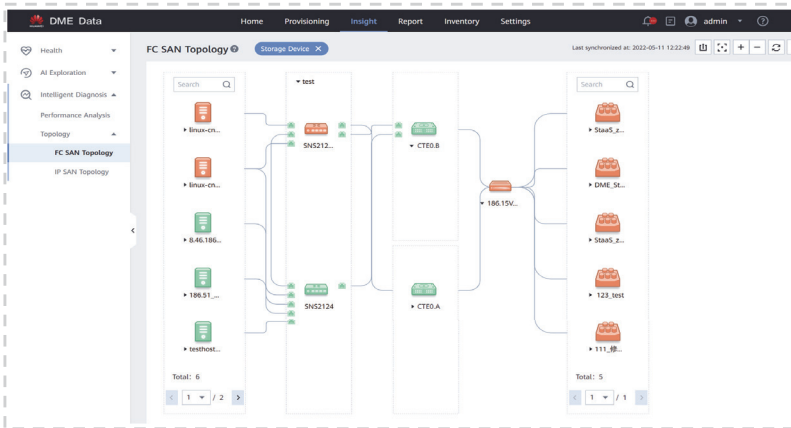
E2E association analysis and topology

eDME analyzes alarms and E2E resource topology to identify risky nodes, helping clearly display the associated data links with current host or VM, and allowing users to analyze the related devices and locate the faults.



Predictive O&M

eDME offers predictive O&M and risk policy-based alarms to implement unified risk monitoring. This enables proactive problem detection and minute-level problem demarcation and troubleshooting.



04 / Key Specifications

Item	Configuration Item	Specifications
Host	Maximum number of vCPUs supported by a host	x86: 4,096; Arm: 384
	Maximum physical memory size supported by a host	x86: 16 TB; Arm: 4 TB
	Maximum number of VMs supported by a host	1,024
	Maximum number of virtual disks supported by a host	2,048
	Maximum number of vNICs supported by a host	2,048
VM	Maximum number of vCPUs supported by a VM	x86: 255; Arm: 128
	Maximum memory size supported by a VM	x86: 6 TB; Arm: 256 GB
	Maximum capacity of a single disk supported by a VM	Local disk: 16 TB VIMS: 64 TB NAS: 64 TB Huawei Scale-Out Block Storage: 32 TB
	Maximum number of virtual disks supported by a VM	60
	Maximum number of vNICs supported by a VM	16
Cluster	Number of physical hosts that can be managed	3,000
	Number of VMs that can be managed	10,000
Storage	Number of storage devices that can be managed	32
	Number of LUNs	30,000
	Number of file systems	30,000
Network	Maximum number of hosts that can be managed by a switch	3,000
	Maximum number of virtual switch ports supported by a distributed switch	10,000