# Green and Low-Carbon Strategy in Data Infrastructure

HUAWEI

# Low-carbon storage is vital to green development

**197** countries signed the Glasgow Climate Pact at COP26

**17**

17 countries have joined many others in making net zero pledges.

**1.5°C**

Countries have agreed on the need to limit global temperature rise to below 1.5°C.

**Fossil fuel phase-out**

Countries are accelerating efforts to phase down coal power and phase out subsidies on inefficient fossil fuel.

**30%**

100 countries have pledged to reduce methane emissions by 30% by 2030.

**136** countries, accounting for **88%** of global emissions, have made net zero pledges

**EU**
European Green Deal

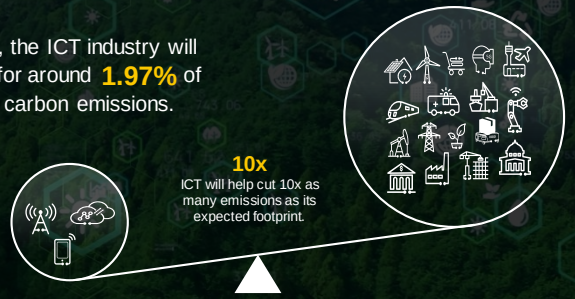
**China**
Carbon peak 2030
Carbon neutrality 2060

**U.S.**
Rejoined the Paris Agreement

**ICT technologies** are helping reduce carbon emissions

But by providing technology, it will help other industries reduce carbon emissions by **20%**

By 2030, the ICT industry will account for around **1.97%** of global carbon emissions.




By **2030**, the data volume generated per year is expected to reach **1 YB.**

Data storage power consumption:
**300 kWh/TB/year**

# Huawei storage helps data centers go green with "3+1" green strategy

## Huawei Storage Green Strategy

Higher hardware density
Higher heat dissipation efficiency

**High-density design**

- High-density components
- High-density systems

Fewer devices
Better resource utilization

**System convergence**

- Protocol integration
- Silo elimination

Less capacity usage
Less duplicate data

**Data reduction**

- Deduplication and compression
- Elastic EC

+

Recycling to reduce environmental impact

**Full-lifecycle carbon footprint**

# Higher density for smaller devices and better heat dissipation

Low hardware density means high per-GB energy consumption, large footprint, and poor heat dissipation.


High energy consumption per unit capacity

**4U24**

Poor heat dissipation

**High-density components**

**High-density systems**

**For the same capacity, SSDs are 70% lower in power consumption and 50% smaller in footprint**

HDD

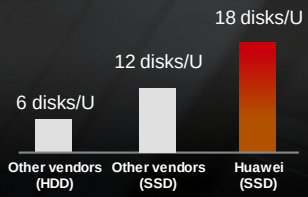
- Typical power consumption: ~7W
- Typical capacity: 600 GB/1.2 TB

SSD

- Typical power consumption: ~7W
- Typical capacity: 3.84 TB/7.68 TB

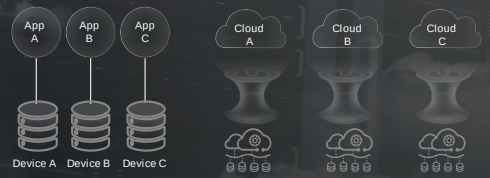
**Industry-leading hardware density for 25% higher heat dissipation efficiency**

**2U36** NVMe SSD



# System convergence for integrated protocols, silo elimination, and higher resource utilization

Different devices create application silos. Different full-stack clouds lead to cloud silos. Both have poor resource utilization and high energy consumption.



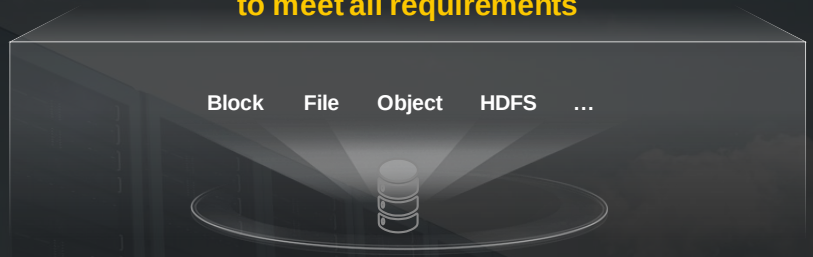

Resources are difficult to

Share | Manage | Expand | Reuse

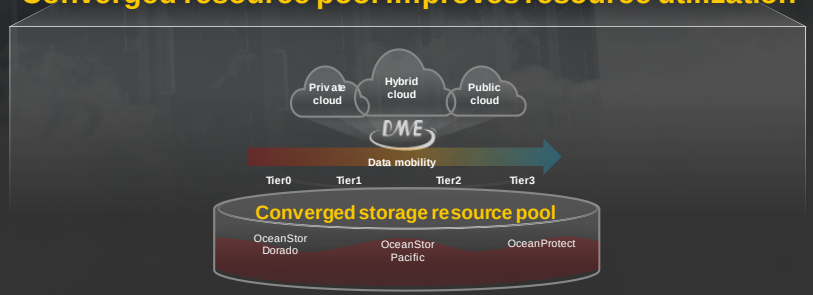
**Integrated protocols**

**Eliminated silos**

**Multiple protocols enable one storage system to meet all requirements**




**Converged resource pool improves resource utilization**



# Data reduction slashes duplicate data and resource consumption

Storage resource pools have large amounts of duplicate data. The 3-copy mechanism further consumes resources.

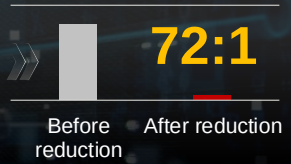
VDI | Big data | Backup and archiving

**Deduplication and compression**

**Up to 72:1 data reduction, 20% better than the industry benchmark**

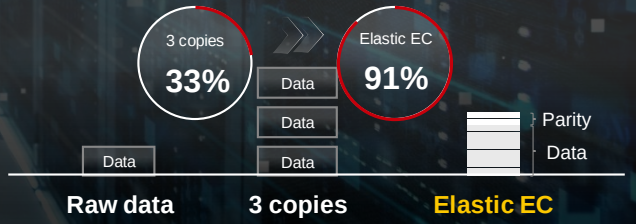
Global Algorithm Competence Center


Global Data Compression Contest




**Elastic EC**

**Unique 22+2 elastic EC for a high utilization rate of 91% — a 1.75x improvement**



# Using circular economy concepts for better product lifecycle management and less environmental impact

Material selection/design → Production and delivery → Use → Recycling

### Renewable materials

Use of **10** renewable materials in products, including paper, gold, aluminum, cobalt, tin, etc.

### Greener packaging

Use of FSC-certified paper and soy ink to **reduce** package weight by up to **78%**

### Intelligent O&M with AIOps

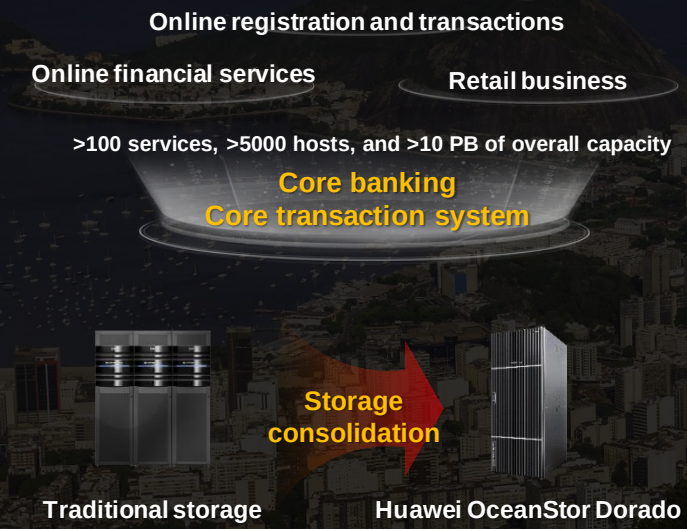
Three-layer **AI** system of **DMS**
Full-lifecycle data management
On-demand data storage and use
Low carbon emissions

### Product recycling and reuse

A continuously improved **global recycling system** helped dispose of electronic waste in an environment-friendly way

# Itaú Unibanco Embarks on a New Journey of Digital Transformation with Huawei All-Flash Storage

Itaú in Brazil: The largest private sector bank in Latin America, ranking #216 in the 2020 Fortune Global 500.




**Performance** ↑

Compared to legacy storage
**20x** faster writes and **12x** faster reads

**24/7** service continuity
Geo-redundant 3DC DR solution

**TCO** ↓

**45%** lower power consumption and **65%** lower maintenance cost