Introduction to USP

— **U**nstructured **D**ata **S**torage **P**latform
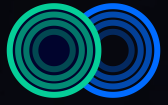
Product Overview

The Unified Storage Platform (USP) is designed to seamlessly manage a variety of storage devices, including NAS and Distributed Object Storage. It provides consistent file and object storage services to upper-layer applications, ensuring a unified and efficient storage experience.USP provides advanced capabilities in data distribution, operations, protection, and governance, ensuring optimal data management and utilization.

Office   Video   Picture   AI

Large-Scale Data

S3 / NAS

HDFS API

USP

Protocol Conversion   Disaster Recovery   Data Tiering   Data Migration

Private Cloud   Public Cloud

NAS   Distributed File Storage   Distributed Object Storage   Tape / Blu-ray
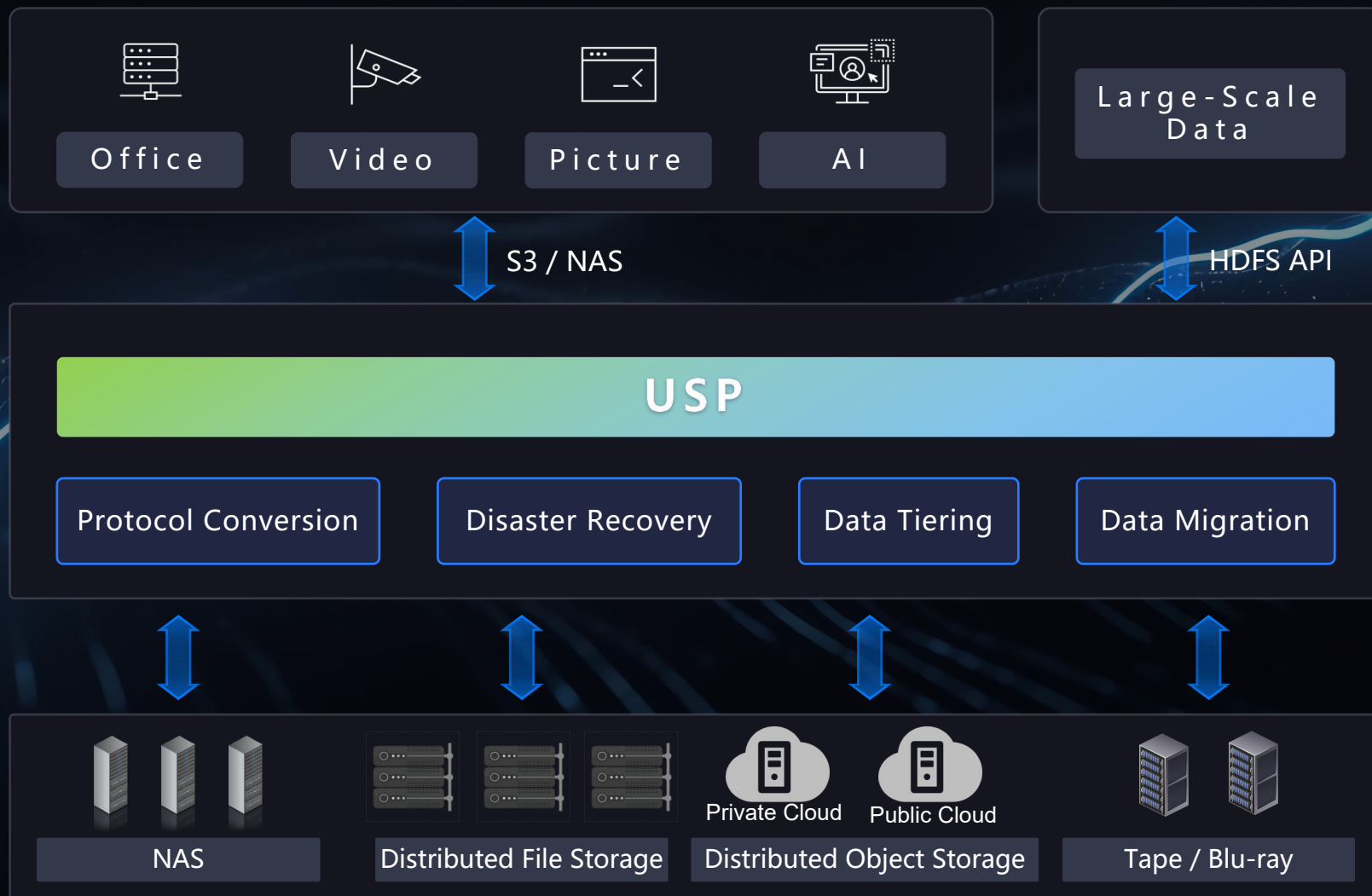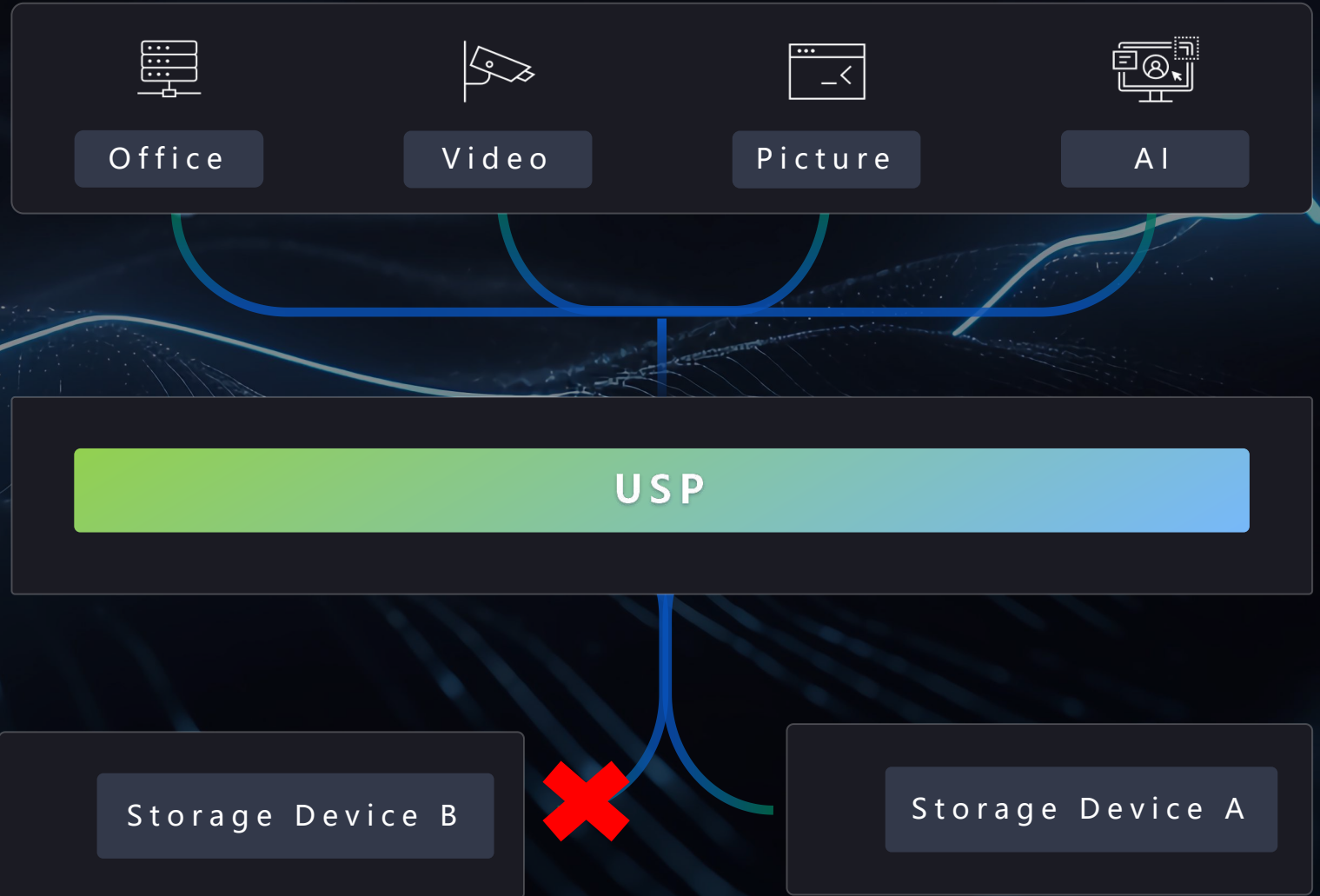
Cross-Storage Data Disaster Recovery
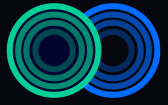
USP PRODUCT INTRODUCTION

Pain Points

Core business systems demand real-time disaster recovery across storage systems and data centers to ensure high data availability.

Advantages and Value

- ✓ Adopts a flexible multi-copy strategy that empowers clients to choose between synchronous and asynchronous backups based on the business needs.
- ✓ Offers compatibility with various primary and secondary storage systems for streamlined integration.
- ✓ Provides automatic, seamless failover to secondary storage in the event of a primary storage outage.
- ✓ Facilitates deployment of primary and secondary storage across geographically dispersed data centers and hybrid cloud infrastructures, including both private and public clouds.
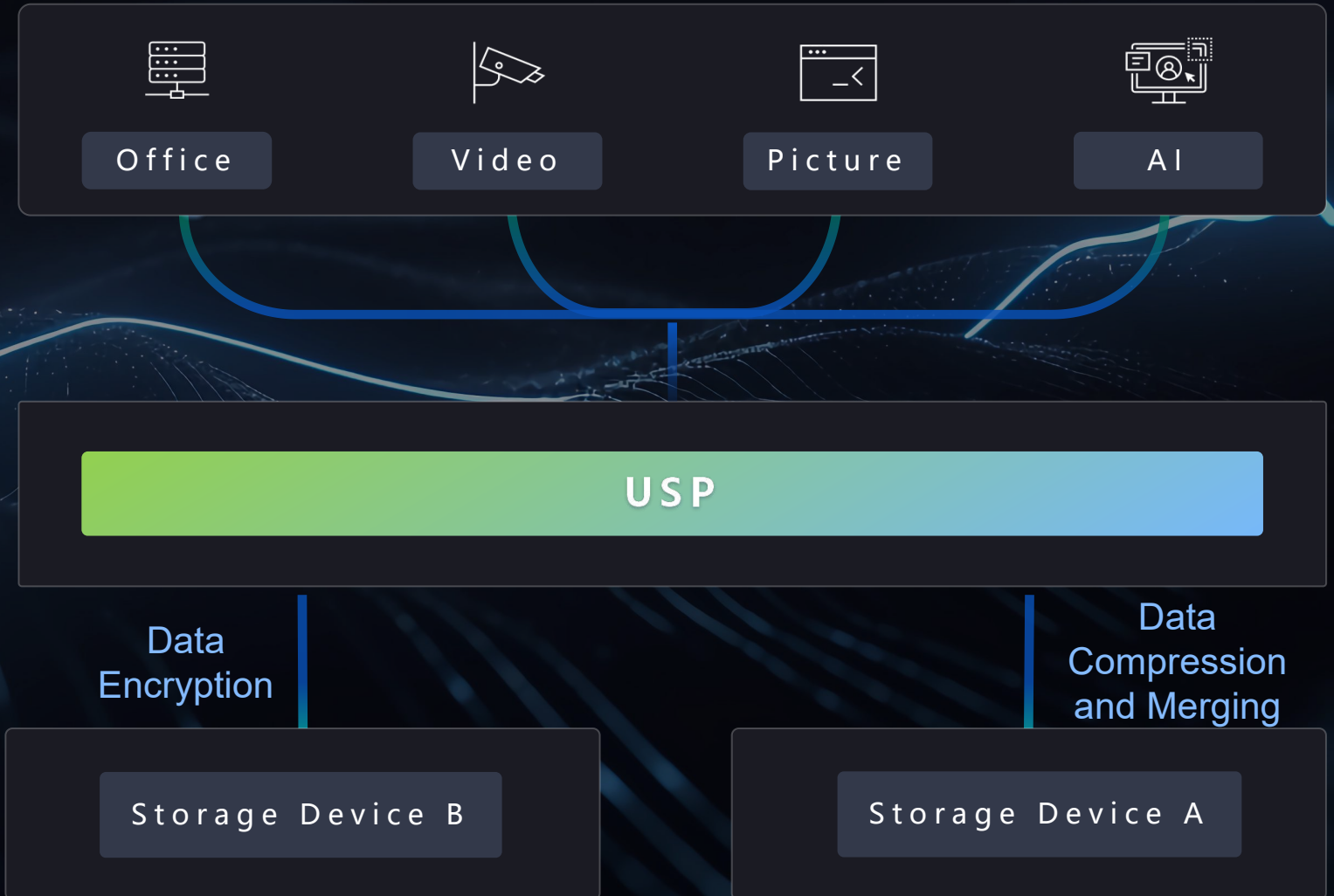
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Video

Picture

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USP

Storage Device B

Storage Device A
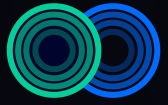
Data Processing

Pain Points

Encryption must occur prior to writing data to storage, but direct encryption at write time may degrade performance given the high file volume.

Advantages and Value

✓ Pre-processes data before storing it by performing tasks such as encryption, especially prior to storing it in the public cloud.

✓ Compresses video data to optimize storage usage for users.

✓ Merges small files into larger composite files to boost write performance in high-volume file scenarios.

Office

Video

Picture
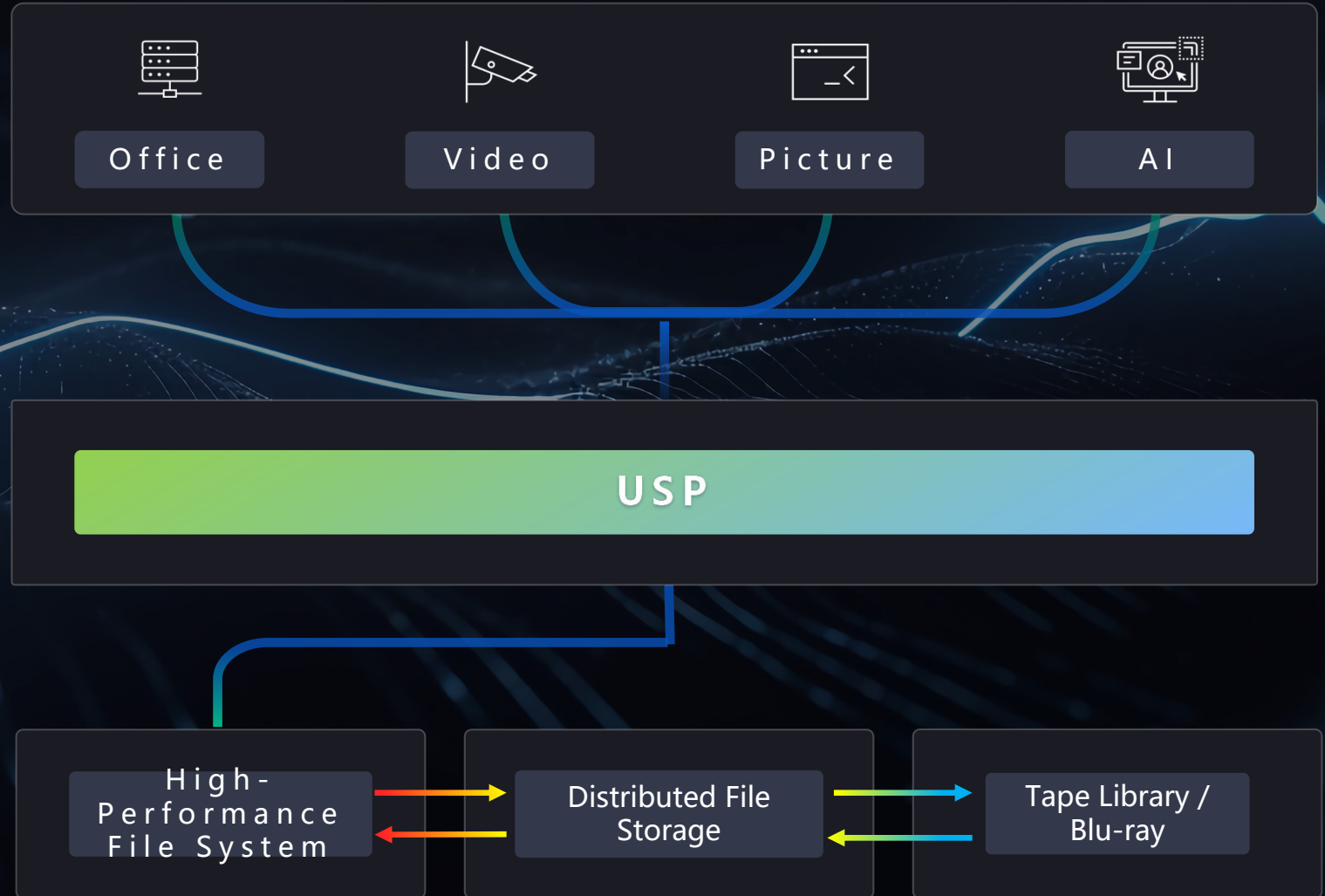
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USP

Data Encryption

Data Compression and Merging

Storage Device B

Storage Device A
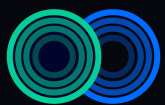
Automated Data Tiering

Pain Points

A significant portion of the system's data is rarely accessed, contributing to elevated storage expenses, extended retrieval durations, and increased operational complexity.

Advantages and Value

✓ Implements access frequency monitoring to enable automated tagging of business data for optimized storage and management.

✓ Automates data migration across storage infrastructures by leveraging these tags, resulting in substantial cost savings.

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Video

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High-Performance File System

Distributed File Storage

Tape Library / Blu-ray
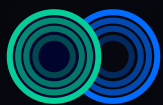
Customer Platform Integration

Pain Points

Each storage device deployed in the customer environments must integrate with their authentication and alert systems.

Advantages and Value

✓ Integrates seamlessly with various user operation platforms, including PaaS, unified identity authentication, and alert systems. Upper-layer applications interact exclusively with the intelligent storage gateway.

✓ Enables auditing of data operations through detailed logs to support regulatory compliance.

Office

Video

Picture

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User Operations Platform

Distributed Object Storage

File System
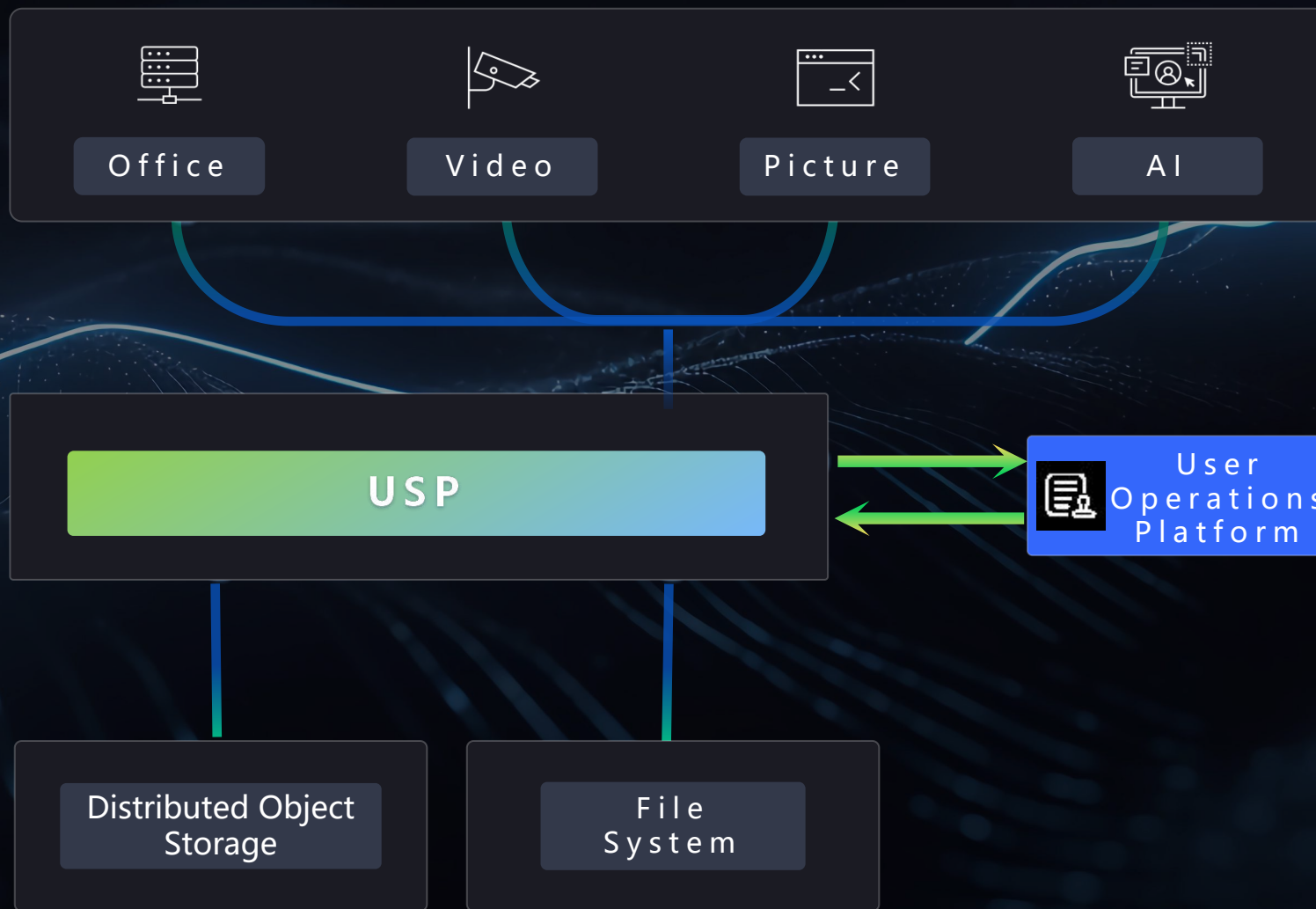
Data Protocol Conversion

Pain Points

When data protocol mismatches occur between front-end applications and back-end storage, directly altering the data access protocol of front-end applications can impose a substantial operational burden and may be impractical in certain environments.

Advantages and Value

✓ Front-end applications and usage methods remain unchanged, preserving end-user habits and workflows.

✓ Customers benefit from an open ecosystem with no dependency on specific models or vendors, enabling diverse and flexible deployment choices of storage systems.

✓ The system minimizes adaptation efforts across heterogeneous front-end business environments by standardizing data access through a unified protocol.

Office

Video

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Distributed Object Storage

NAS
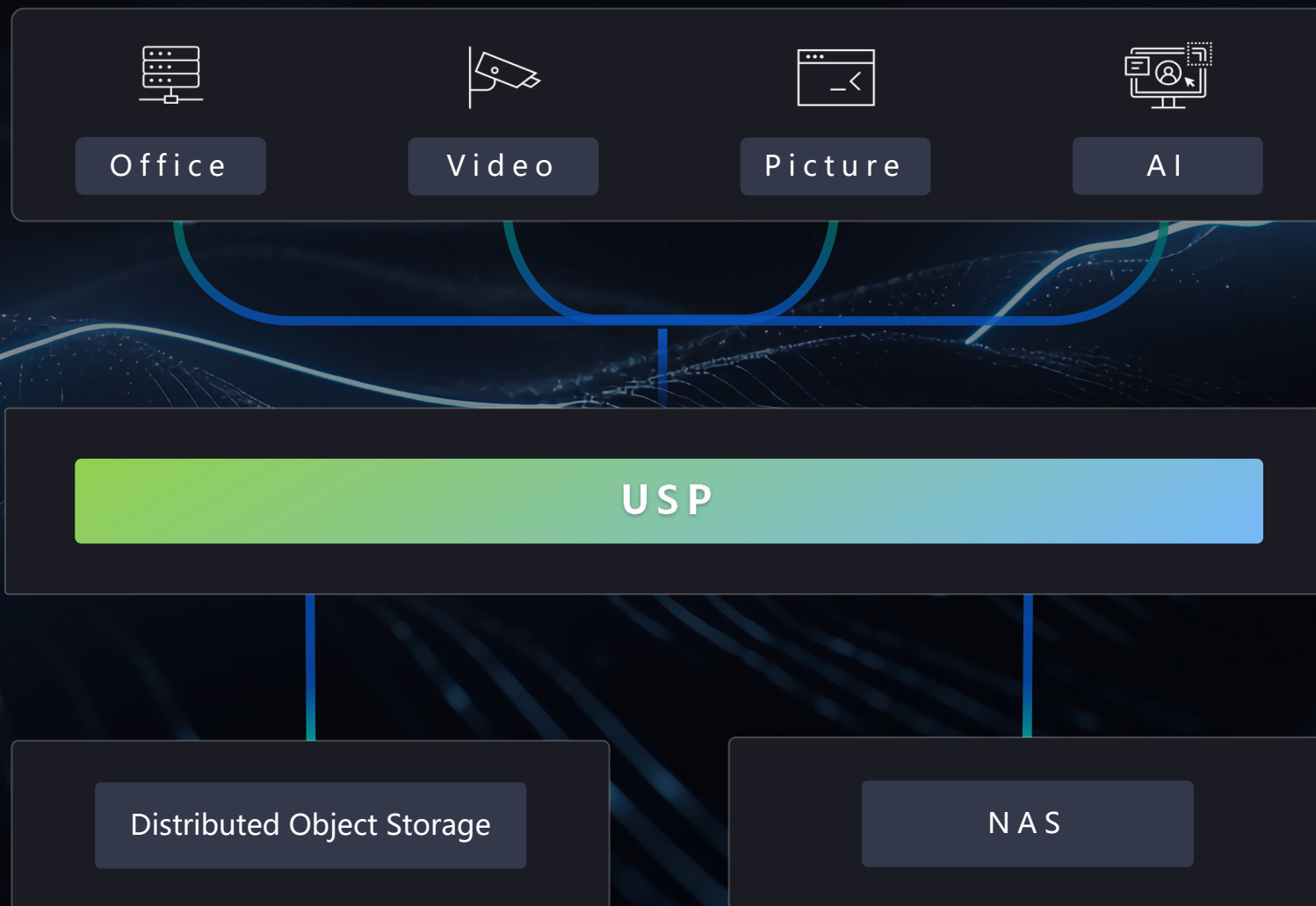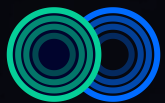
Product Performance Metrics

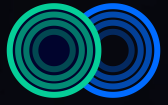| Manageable Data Volume	Supported Number of Clients	Maximum Throughput	Supported Number of Nodes
240 billion+	128,000	128GB/s	64

A minimum cluster configuration consists of three nodes, each equipped with 960 GB of storage capacity. This setup supports approximately 1.2 billion files, offers a throughput of 6 GB/s, and accommodates up to 8,000 concurrent clients.
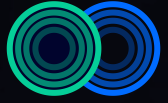
Product Advantages

✓ **Unified Object and File Interoperability Interface**

✓ **Extensive Compatibility**

✓ **Cross-Storage Disaster Recovery**

✓ **Automated Data Transfer**

✓ **Large-Scale Data Migration**

Solution Overview

- ➢ Centralizes management across heterogeneous storage devices.

- ➢ Supports seamless data disaster recovery across different storage systems without the need to modify existing applications.

Key Benefits

- ➢ Manages historical data when the original storage vendor can no longer provide services.

- ➢ Migrates old data to new storage devices without impacting business operations.

- ➢ Automatic failover ensures immediate access to secondary storage during disruptions, with seamless data synchronization resuming once the primary device is restored.
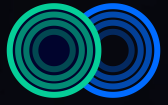
Case Study: Finance Industry

Solution Overview

➢ Achieves unified management of storage devices across multiple locations.

➢ Seamlessly integrates with PaaS platforms and monitoring systems.

Key Benefits

➢ Enables complete decoupling between applications and storage systems, preserving front-end stability amid storage infrastructure changes.

➢ Ensures regulatory compliance through robust log auditing that tracks all data operations.
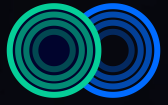
Case Study: Healthcare

Solution Overview

➢ Seamlessly offloads cold data to Blu-ray storage with no manual input required.

Key Benefits

➢ Reduces the overall data storage cost.

➢ Addresses the scalability challenge of Blu-ray storage with respect to billions of files.

➢ Preserves front-end application integrity.