Hitachi Data Protection Solutions
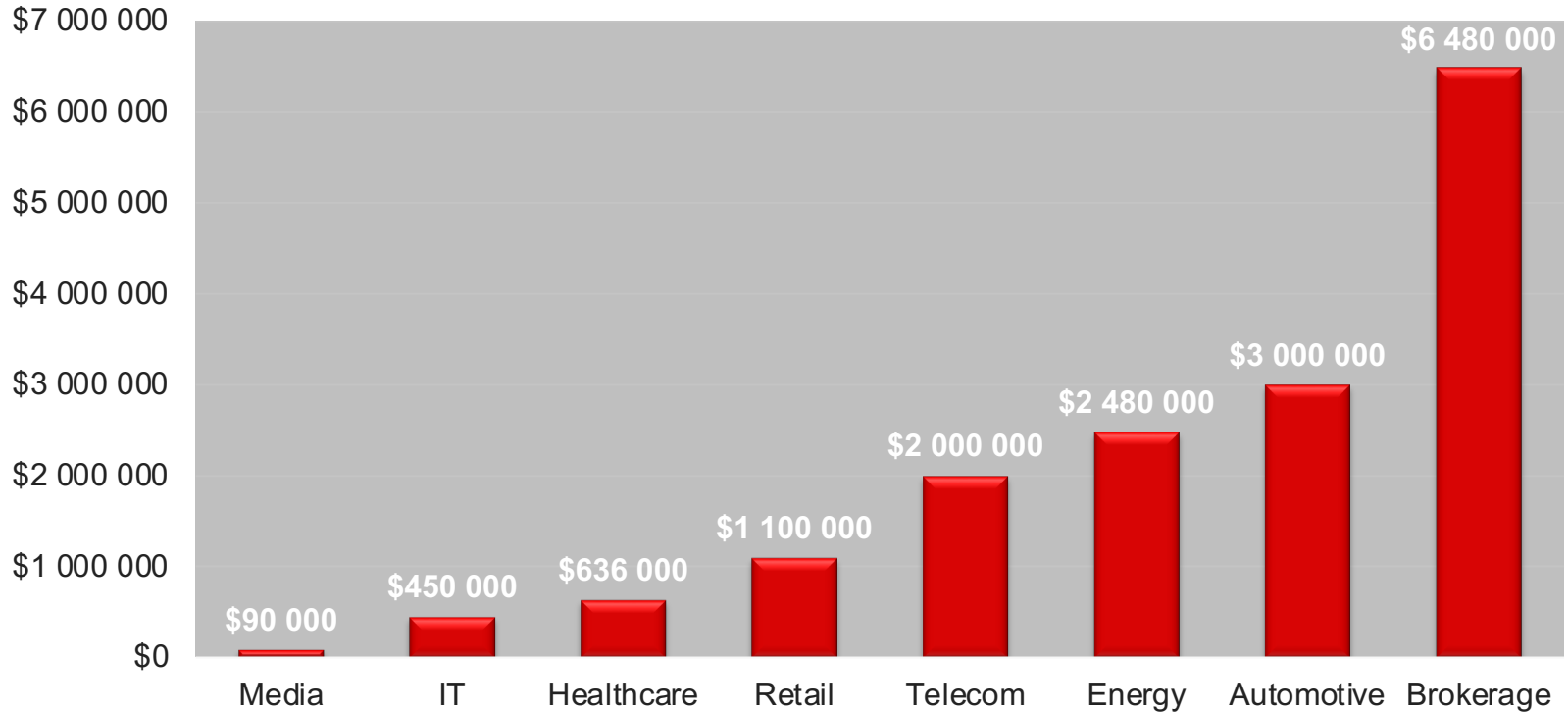
Andrej Gursky
Solutions Consultant CEE
April 2024

Downtime is Detrimental

Cost of Downtime in Dollars/Hour

Bar chart showing:
- Media: $90 000
- IT: $450 000
- Healthcare: $636 000
- Retail: $1 100 000
- Telecom: $2 000 000
- Energy: $2 480 000
- Automotive: $3 000 000
- Brokerage: $6 480 000

Data Protection Software Evolves to Keep Pace

But Storage for Backup Data Lags Behind

Tapes

- Subject to media failure/loss
- 50% of tapes restores fail
- Time consuming to manage
- Slow backups and restores

Public Clouds

- High costs for access
- Security and privacy concerns
- Limited bandwidth
- Slow system recoveries

Which Leads to Bigger Challenges Overall

Manual efforts introduce risk and are inefficient

Lack of support for hybrid infrastructure limits flexibility

Management complexity, inconsistent policies, and lack of data visibility
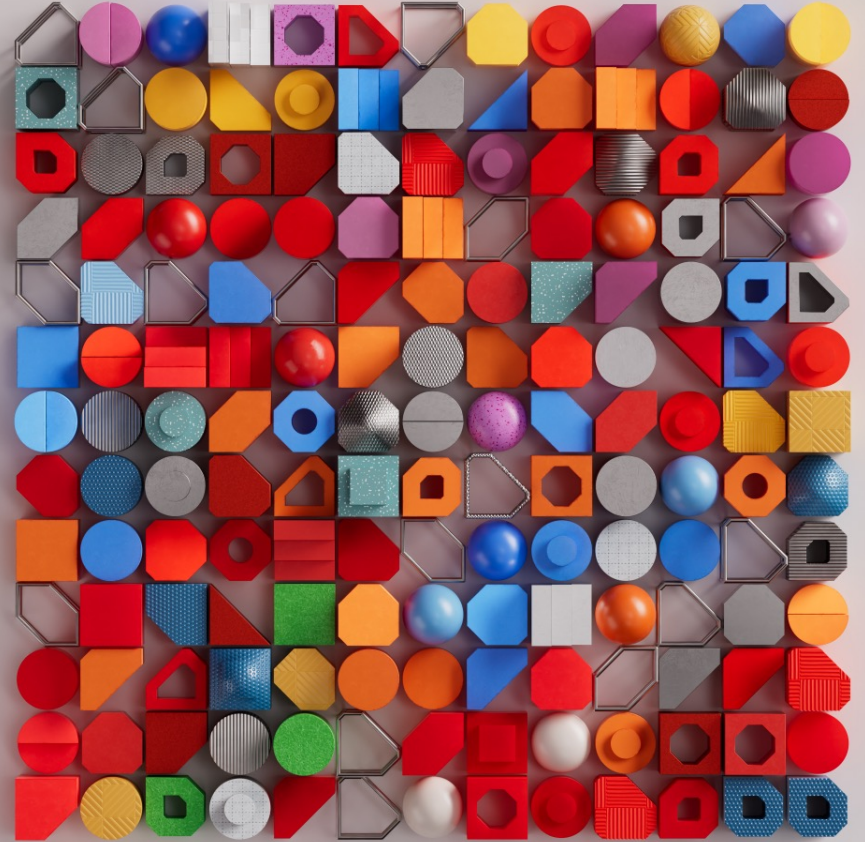
Lack of automation slows response times

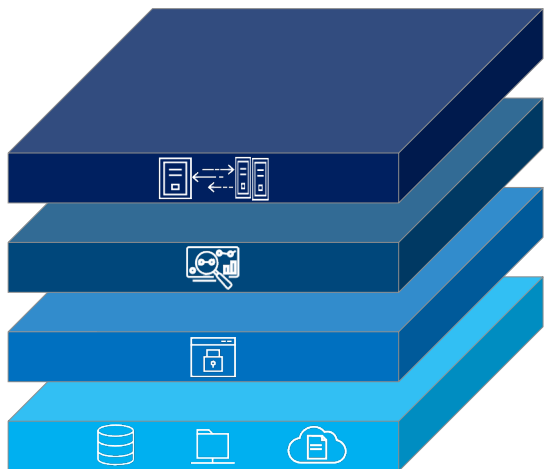**Weak cyber resiliency** exposes risk of ransomware and malware

Inability to meet governance regulations **such as GDPR**

A New Approach

Faster recovery, more reliable backups, and enhanced cyber protection while reducing costs

Robust Infrastructure, Software and Services

Nearly instant, disposable, copies of production environment
Thin Digital Twins with CyberVR

Simplified administration of data protection processes
Ops Center Protector

Efficient, Dependable Backup and Recovery
HDPS, Commvault, Veeam, Veritas, IBM, Model9, etc.

Reliable, Secure, Immutable Infrastructure
VSP, HNAS, HCP, HCP Anywhere Enterprise

Legendary Hitachi Resilience
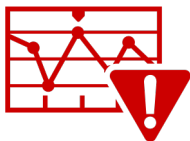
30 Years Of Industry Leading Reliability

AVAILABILITY

GLOBAL-ACTIVE DEVICE

CLOUD SUPPORT

3 DATA CENTER

100% Data Availability Guaranteed

"I have been a Hitachi storage solutions customer for 15 years – their platform has been a game changer for me and my organization"

Scott Crowder, Senior VP and CIO, BMC Software

"These two G1500s are the two most reliable pieces of our infrastructure."

**Theodoros Zarros**, CTO, Athens Exchange Group

Linked Snapshots

- **Tiered snapshot copies**
  - Thousands to over a million copies supported
  - Trees of snapshots can be made for incremental testing
  - Changes can be propagated back to original master
 - Accelerates virtual desktop deployment rollouts

- **Full or thin, based on need**
  - For read-only use, only a small amount of capacity needed
  - For ongoing use, clones can be read/write
  - Copies can be "broken off" and used independently
  - Reduces analysis storage costs by up to 97%
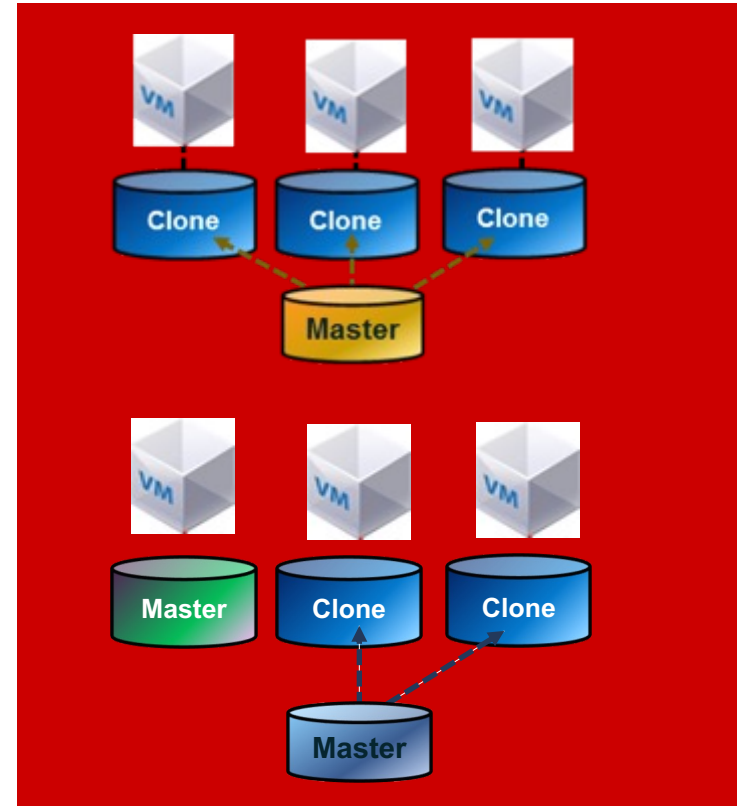
VSP Built-in Ransomware Protection

- **Data Retention Utility (DRU):** VSP fully integrated utility to prevent host writes and array refreshes, reverts or deletions during retention period
- **Locks down copies** of production data for a defined period of time
- Easy way to protect primary data against ransomware or rogue administrator
- Data cannot be deleted, edited or encrypted during the retention period
- Undo damage by ransomware attacks in seconds
- Can be orchestrated with Ops Center Protector

Production servers
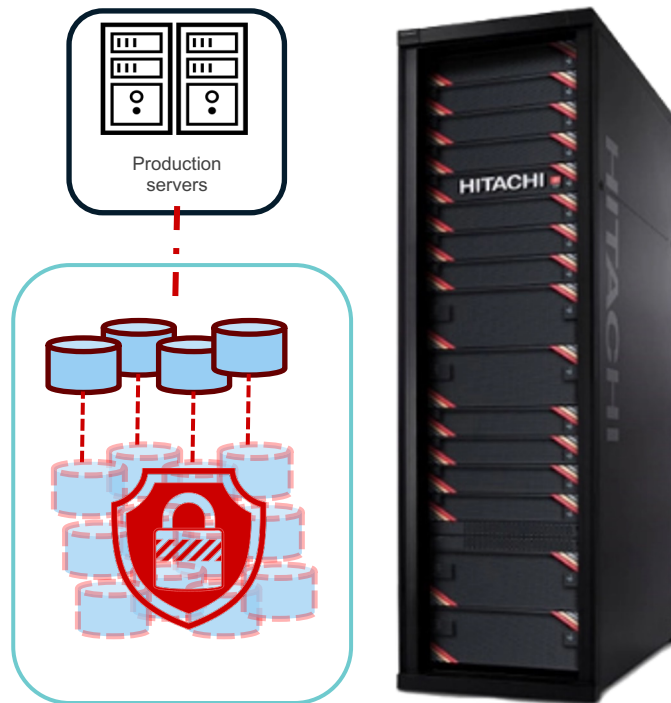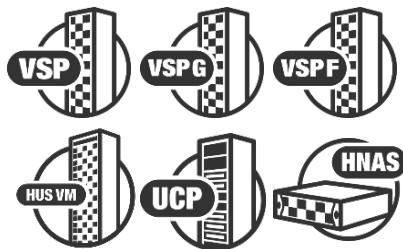
Ops Center Protector as a Single Orchestration Tool

Large databases

Microsoft SQL Server®
Oracle Database
Others

3TB-100TB+

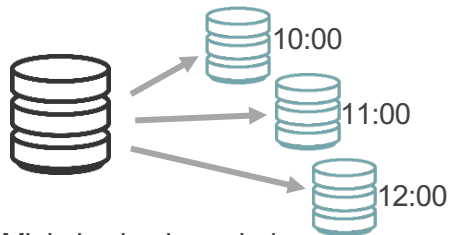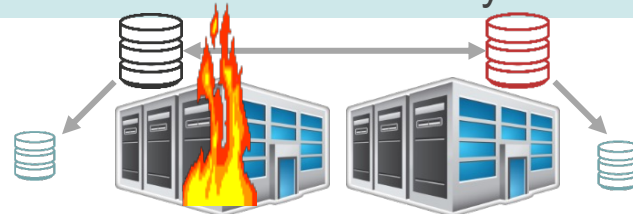**Hitachi Storage**

VSP VSP G VSP F
HUS VM UCP HNAS

Instant Protection

10:00
11:00
12:00

- Minimize backup window
- Create more frequent recovery points

Recovery Copy Services
Disaster Recovery

- Disaster recovery copy and failover management
- Synchronous, asynchronous and active-active
- Local and remote recovery points
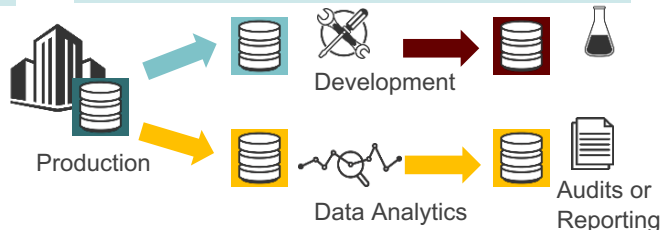
Recovery Copy Services
Application Restore

+ logs

- Instant Restore
- Full, application-aware recovery

Agile Copy Services
Automated Repurposing

Development

Production

Data Analytics

Audits or Reporting

HCP Makes Your Data SAFER

Optimize Protection and Recovery With Industry-Leading Object Storage

- Scale-out and scale-up capabilities on your hardware of choice
- Lower TCO and increase ROI
- Reduce recovery time
- Integrate with your existing backup applications
- Long- and short-term reliability with WORM, versioning, data integrity checks, and replication

Scalable
Stay ahead of data growth

Affordable
Reduce overall costs

Fast
Fulfil SLAs for RPO/RTO

Easy
New capabilities for existing tools

Reliable
Recoverability and cyber-resiliency

By Maintaining Robust Data Protection

Multi-level data protection, verification and repair processes

Hitachi Content Platform

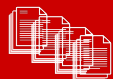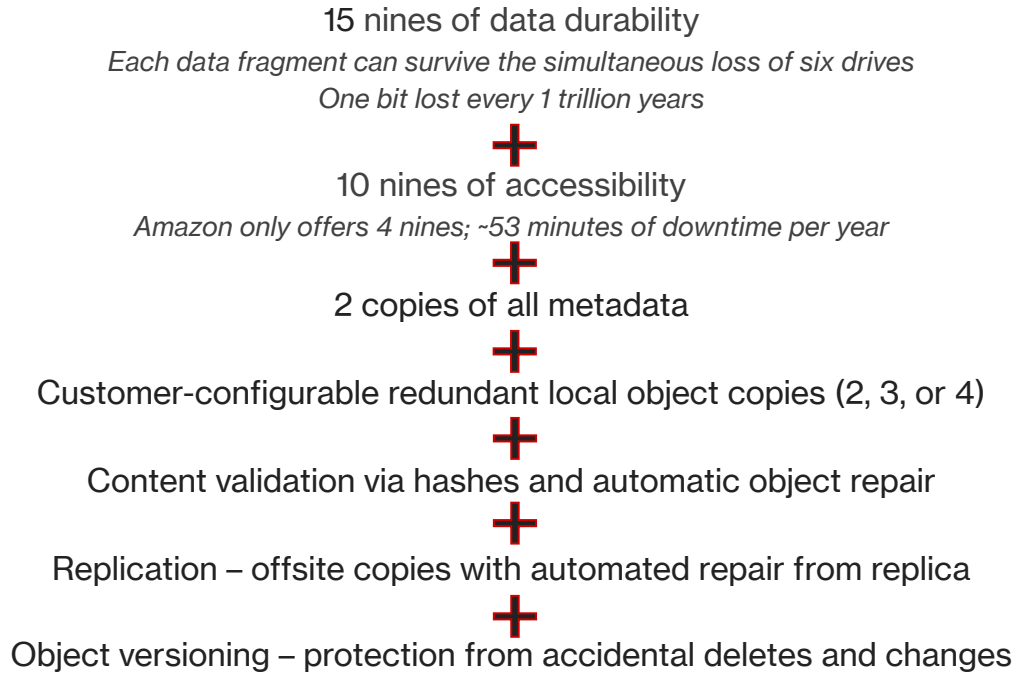|			
Replication Options	RAID or EC for Active Storage	Geo-Dispersed Erasure Coding	Data Protection Levels (DPL)
Global Active Topology	Adaptive Cloud Tiering	Zero Copy Failover	Read From Replica
Metadata Protection Level	Autonomic Tech Refresh	Seamless App Failover	Index Protection

Resiliency By Design

- Backup-free content preservation and data protection
- Redundant data and management paths
- Self-configuring and self-healing
- Automated enforcement, failover, and integrity checks
- Encryption of data tiered to clouds
- Object versioning

With Robust Data Resiliency

Active data protection reduces the backup burden

15 nines of data durability

Each data fragment can survive the simultaneous loss of six drives
One bit lost every 1 trillion years

+

10 nines of accessibility

Amazon only offers 4 nines; ~53 minutes of downtime per year

+

2 copies of all metadata

+

Customer-configurable redundant local object copies (2, 3, or 4)

+

Content validation via hashes and automatic object repair

+

Replication – offsite copies with automated repair from replica

+

Object versioning – protection from accidental deletes and changes

- **1 Million times more available than AWS S3**

- **Exceptional data protection**

And Built-In Data Security and Privacy
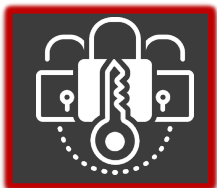
Immutability & Authenticity

Compliance and Enterprise retention modes

Designate namespace as "compliant" to meet SEC and EU standards

Retention classes, date in object, or deferred options

Object authenticity ensured with cryptographic hash at ingest

Digital signature for incoming files based on MD5, SHA-1, 256, 384, 512

Write Once Read Many (WORM) based immutability

Data Privacy and Security

Data at Rest encryption (DARE)

In-line encryption for objects being sent to public clouds

Configurable roles based accessed controls

Each access gateway has its own security mechanisms

Embedded firewall protects all ports not needed for interfaces

Audit and Search

Auditing/Logging of significant events

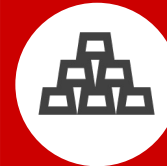Discovery via built-in full context metadata search and indexing mechanism

Third-party authored technical compliance validation reports

Data Destruction/Shredding compliant with DOD spec 5520.22-M

From Edge-to-Core

Data Centers

HCP Anywhere Enterprise

Global File System

HCP

Object Storage

Remote Workers

Mobile App

WFH Employees

Mobile App

Regional Office

Remote NAS

Branch Office

Edge Caching Device

Public Cloud

Public Cloud

Hitachi Vantara
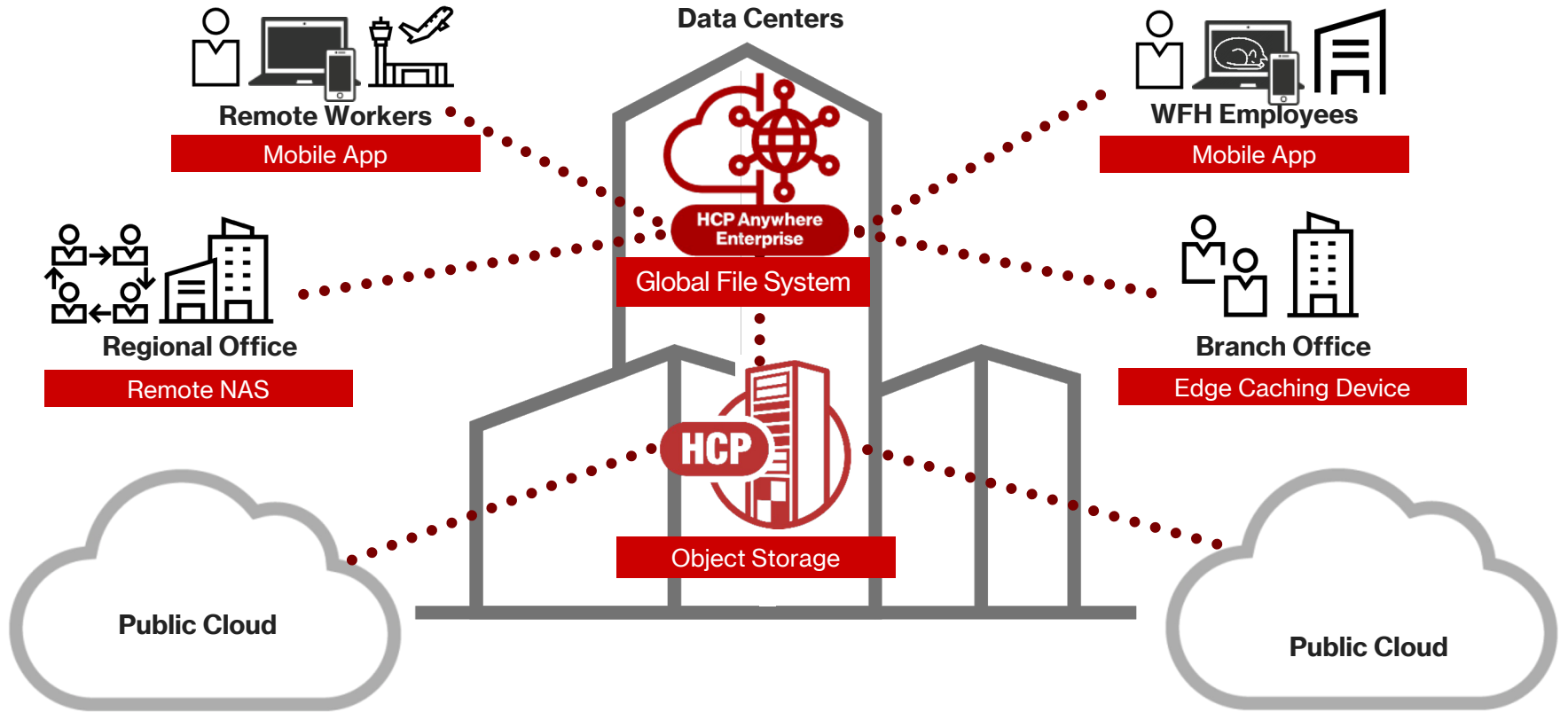
With Backup Provider of Your Choice

Data Durability

Self-Healing Objects

Industry Leading

Integrates With Your Backups

Long-term & Short-term Data Retention

Exabyte Scale

Software-Defined

No Vendor Lock-In

Data In-Place Upgrades

Faster RTO and RPO

Hybrid Tier to Public Cloud

Hitachi Vantara + Veeam
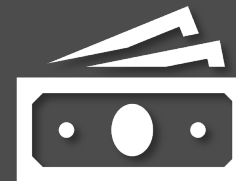
Better RPO/RTO

- Recover faster
- Reduce data loss
- Backup faster and more often
- Increase reliability of backups
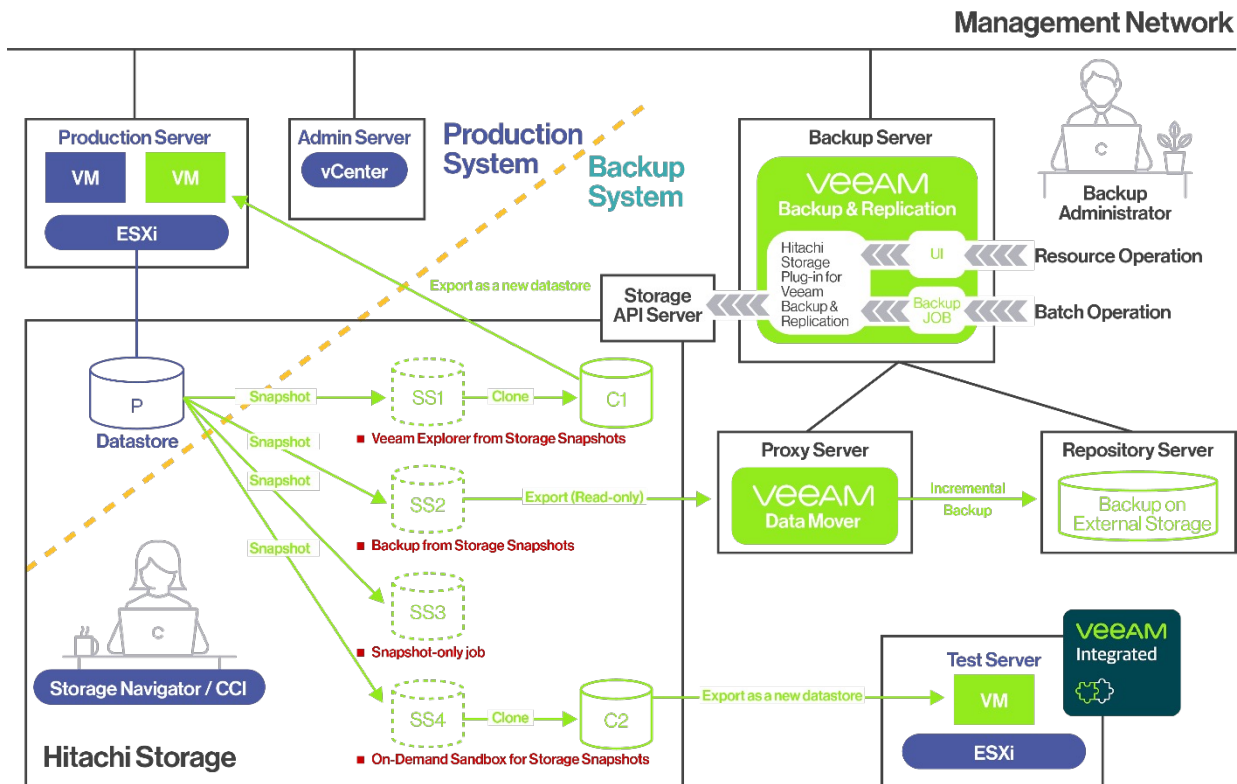
Robust Cyber Resiliency

- Harden the OS, VMs, and storage
- Make data immutable
- Retain past versions
- Anomaly and malware scanning

Increased ROI

- Eliminate the hidden costs of tape
- Use backup datasets for analysis
- Improve data governance
- Gain efficiency and scalability

# Hitachi Storage Plug-in for Veeam Backup & Replication Snapshot Immutability

- *Enables Veeam Backup & Replication to use a Hitachi Virtual Storage Platform Snapshot as a target repository when protecting/backing up VMs Snapshot Immutability*
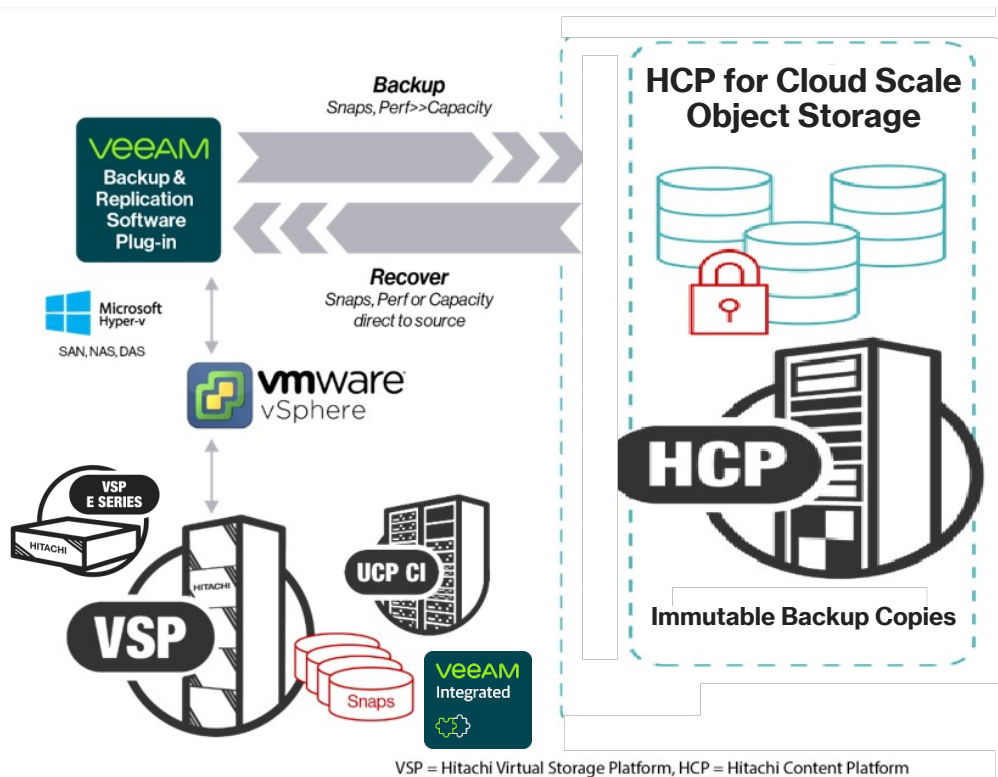
- *Installs into Veeam B&R as DLL (Dynamic Link Library)*

- *Downloads from Veeam website, and is independent from Veeam B&R release/update cycle*

Scalable, Cost-Effective, Immutable Backup & Recovery

VSP = Hitachi Virtual Storage Platform, HCP = Hitachi Content Platform

Hitachi Vantara
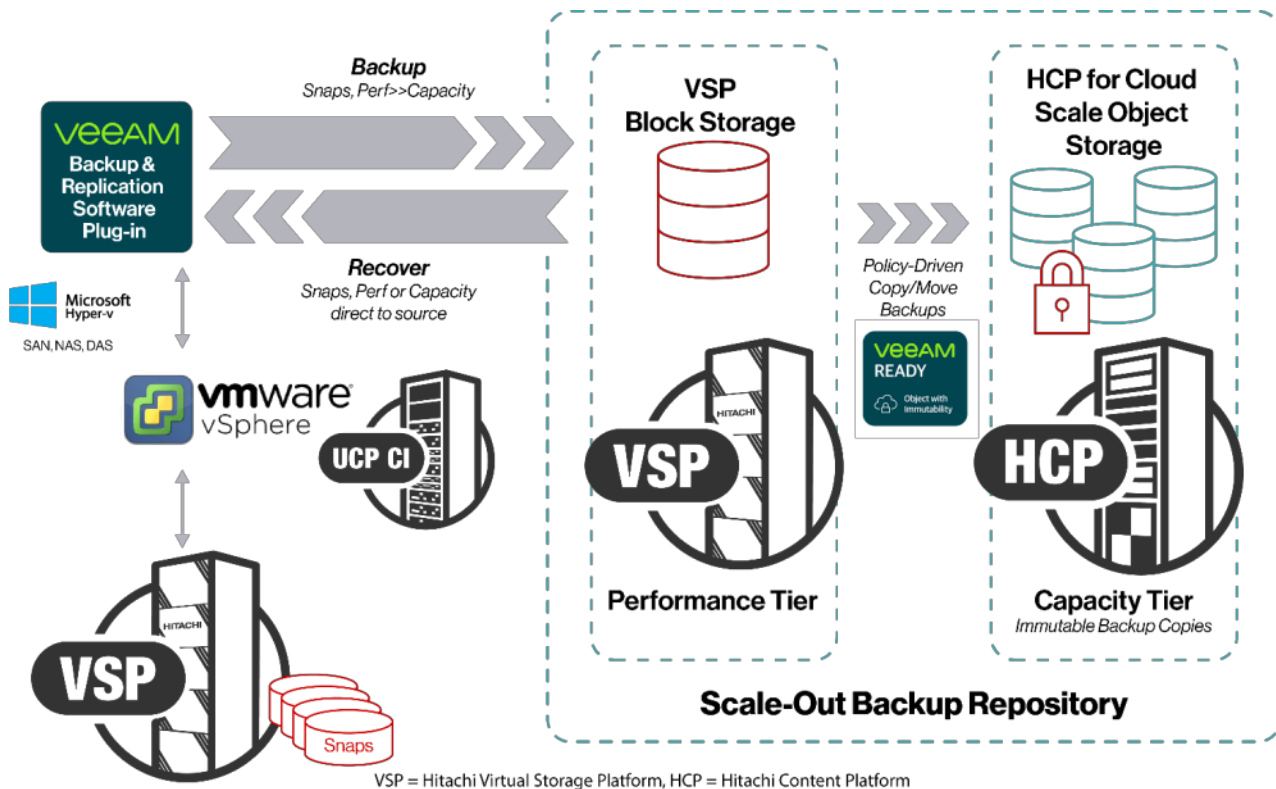
Veeam 12 Direct Integration

Improved V12 Direct to HCP for cloud scale object storage includes:

- Immutability for long-term retention backups

- Improved the way object storage is represented by Veeam

- Recovery directly to source

- Scale out everywhere as object storage

- Improved Rebalance option

- Multiple workloads with one destination

Veeam 12 Direct Integration

VSP = Hitachi Virtual Storage Platform, HCP = Hitachi Content Platform
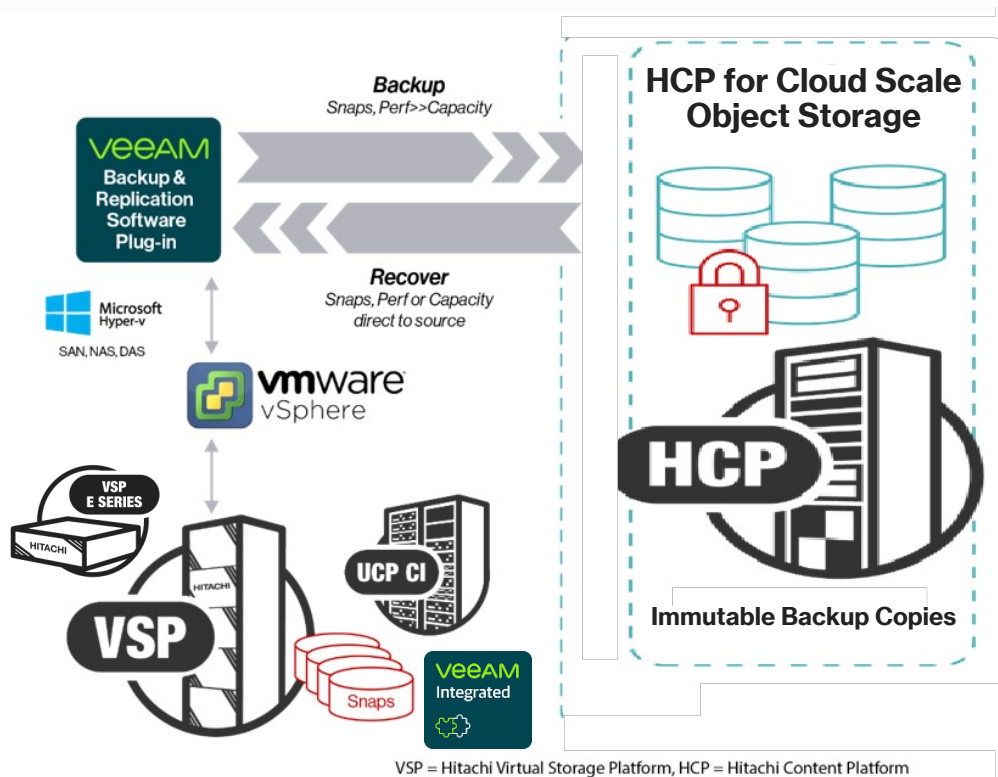
Faster backups and restores:
Streamline disaster recovery and lower recovery point and time objectives.

Optimized, immutable storage:
Massively scale capacity, simplify management, and enable faster tiering to immutable data for ransomware protection.

Reduce complexity:
Use Hitachi Content Platform for cloud scale as a single target without the requirement to move data between tiers.

Cost savings:
Deduplication reduces network traffic and storage costs. There are no access costs that are typical with public cloud.

Immutable Backup with HCP S3 Object Lock

Delete

Not Allowed

x-amz-object-lock

x-amz-object-lock-mode

x-amz-object-lock-retain-until-date

01 Prevents a Backup Object From Being Deleted
(S3 Object Lock)

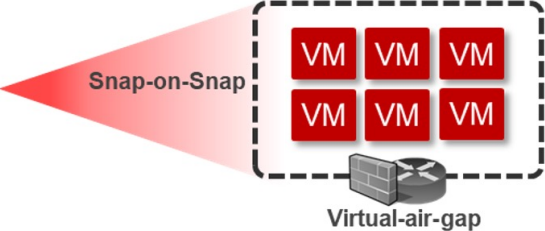**02** Protection From Ransomware Attacks + OS365 Policy Driven Backup

HCP Delivers Multi-Layer Authentication, Encryption & Locked Objects

03 SEC 17-a, GDPR, HIPAA Compliant

For End-to-End Data Protection and Cyber Resiliency

CyberVR + **Ops Center Protector**

Near-instant and capacity efficient Digital Twins

Snap-on-Snap

| VM | VM | VM |
| VM | VM | VM |

Virtual-air-gap

COMMVAULT HDPS
HITACHI OPS CENTER PROTECTOR
VERITAS
veeam
Quantum
SecureAgent Software
MODEL
rubrik
LUMINEX
FalconStor
IBM Spectrum Protect
TRIBUTARY

VSP + HCP

Data Durability

Industry Leading

Integrates With Your Backups

Long-term & Short-term Data Retention

Exabyte Scale

Object lock immutability and compliance

Data In-Place Upgrades

Faster RTO and RPO

Hybrid Tier to Public Cloud

Scalable
Stay ahead of data growth

Affordable
Reduce overall costs

Fast
Fulfill SLAs for RPO/RTO

Easy
New capabilities for existing tools

Reliable
Recoverability and cyber-resiliency

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