# BIGTERA

# VirtualStor™ Converger

## Cross-platform unified converged storage



## Highlight

- **Current state of infrastructures**
- **Bigtera simplifies your software-defined infrastructure**
- **Simplified and flexible expansion**
- **Simplified application usage model**
- **Simplified data protection**
- **Lower TCO**

## Features list

- **Scale-out hyper-converged storage that supports VMware, Hyper-V, and KVM**
- **Scales with JBOD and pure storage nodes**
- **Unified multi-tenant virtual storage provisioning that supports SAN/NAS/Object storage**
- **High-peformance backend storage engine -- BigteraStore**
- **Real-time data replication and asynchronous remote replication**
- **Provides thin-provisioning, data deduplication, data encryption and data compression**
- **Storage volume snapshots and clones**
- **Erasure coding for data protection**
- **IP takeover, self-repairing, and DNS round-robin for system resilience**
- **VAAI support**
- **Seamless data migration**
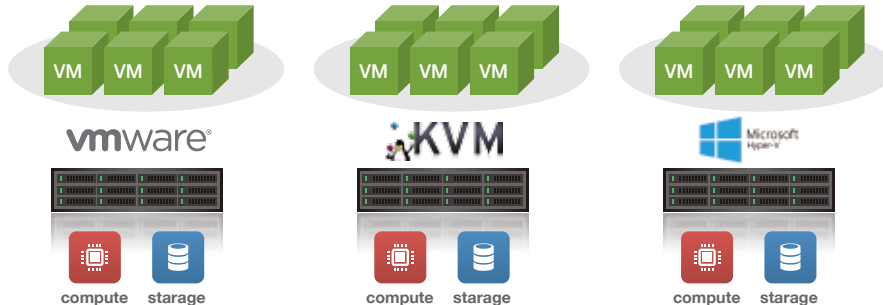- **Decentralized management console and open management API**

Every 7-10 years technology evolves and changes the method in which IT departments deliver their services. Over the past decade server virtualization and cloud computing have rapidly changed IT in terms of technology and service models. Software-defined storage have become the focus for the next generation of IT solutions, with the ultimate goal of having a completely software-defined data center.

Because of this shift, more and more vendors are entering the software-defined arena looking to create a software-defined infrastructure with flexibility to meet the dynamically changing needs of business. Meeting this challenge is not as easy as they would like.

**Hypervisor Agnostic Platform with Scale-Out Storage**

• Virtualize all storage regardless of the hypervisor
• Supports VMware/KVM/Hyper-V

VM VM VM      VM VM VM      VM VM VM

**vm**ware®         KVM        Microsoft Hyper-V

compute  storage    compute  storage    compute  storage

## Current state of infrastructures

Traditional data center infrastructures have been built on top of a centralized storage model, using SAN as the foundation in most cases.Applications have been built around this centralized SAN storage model, however this inherently creates a performance bottleneck between the storage network and SAN storage. The only way to remove this bottleneck is to add more SAN storage nodes, which can be expensive.This solution however in turn creates storage islands and causes grossly inefficient resource utilization. This also introduces increased complexity when it comes to storage management and provisioning. This complexity is the primary reason that IT struggles to catch up with business demands and requirements. Even if this style of infrastructure were immediately transformed into a software-defined infrastructure of 3 layers (compute, network, storage), the IT issues outlined above would still not be solved. IT is looking for a more effective and simpler way to implement, manage, and expand their infrastructure.

## Bigtera simplifies your software-defined infrastructure

Bigtera VirtualStor™ Converger is a hyper-converged storage solution that simplifies infrastructures by providing ease of scale, ease of management, flexibility, and a lower TCO to solve the pain points of building a modern infrastructure.

Bigtera VirtualStor™ Converger runs on top of major virtualization platforms (VMware, Hyper-V, KVM) and consolidates the internal HDD of the hypervisor into a single storage pool where it provides shared storage for

the hypervisor. This architecture not only simplifies the complexity of traditional infrastructures but also eliminates performance bottlenecks and makes the entire infrastructure easier to expand.

## Simplified and flexible expansion

Bigtera VirtualStor™ Converger consolidates the internal HDD of the hypervisor, so when a new node is added to the cluster, not only is storage capacity increased, compute resources and storage performance(IOPS and throughput) also increases. This gives administrators a predictable way to expand their infrastructure.

Administrators might not always want to expand compute and storage resources. There may be times when only storage needs to be increased. When that is the case Converger can be scaled up using JBOD or scaled out with storage only nodes (VirtualStor Scaler). This gives administrators a great deal of flexibility when the time comes to expand their infrastructure.

## Simplified application usage model

Most applications still use traditional SAN or NAS storage. When applications exist in a virtualized environment, they still have to connect to traditional SAN or NAS storage. This issue is not fully addressed by most of hyper-converged vendors. With their solutions, IT administrators still need to rely on traditional SAN or NAS storage for applications to run properly.

Bigtera VirtualStor™ Converger takes software-defined storage to the next level by allowing administrators to provision "Virtual Storage" on top of hyper-converged storage. "Virtual Storage" acts just like standard SAN or

NAS storage while applications access the data. The data is distributed to the local HDD of the hypervisor nodes around the cluster. This makes the infrastructure even simpler and reduces the effort required to manage legacy storage.
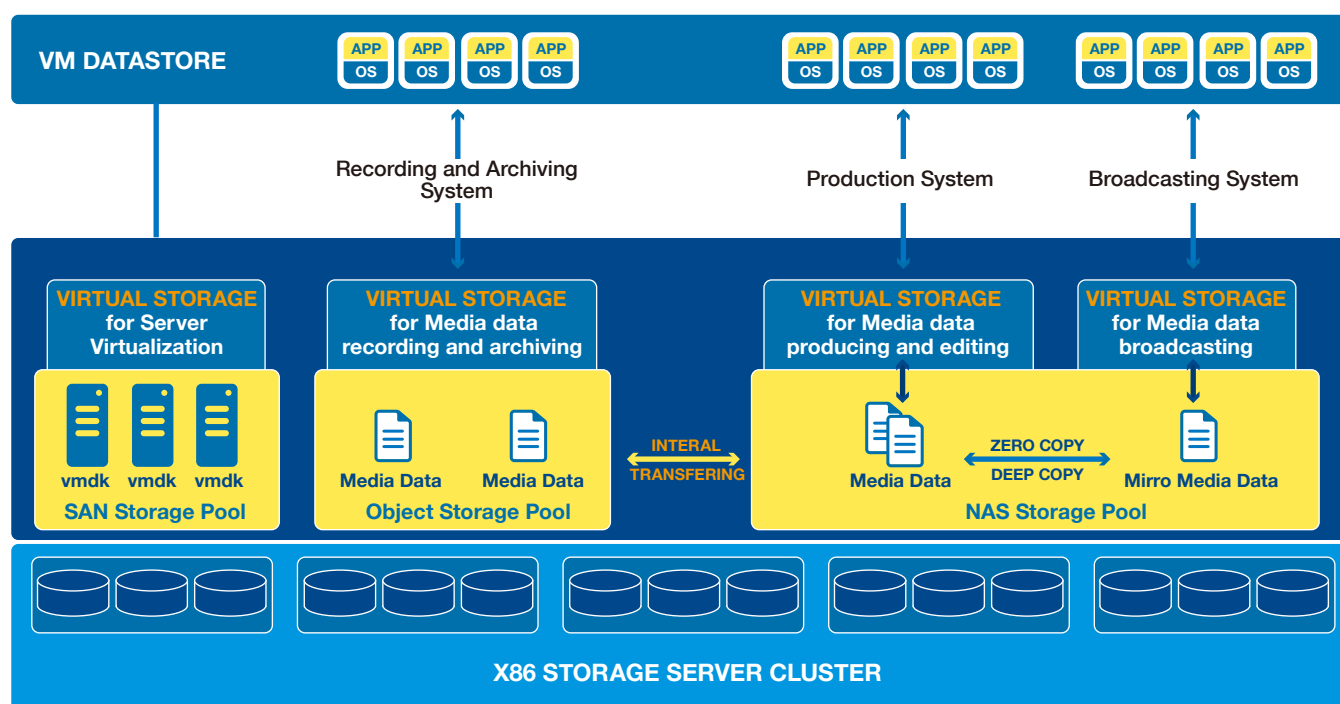
## Simplified data protection

Data availability is always a major concern for the person who has ownership of an infrastructure. In order to deliver on SLA requirements from customers, many data protection services are usually applied. However, this complicates the entire management process. Bigtera VirtualStor™ Converger provides built-in data protection services, giving IT administrators several choices for different levels of data protection. Bigtera VirtualStor™ Converger comes with real-time data replication (up to 10 copies) across storage nodes. This protects the infrastructure should any node encounter issues. Because capacity is always a concern, and because data replication might not be required for cold data, VirtualStor™ Converger also provides administrators the choice of using capacity efficient erasure coding data protection across storage

nodes. VirtualStor™ Converger gives administrators the power to define different policies for data availability depending on how important the data is.

VirtualStor™ Converger also provides a built-in capability to replicate data to a remote site. This feature pushes data availability to the next level, giving administrators the capability to provide a highly secure and resilient infrastructure.

## Lower TCO

Bigtera VirtualStor™ Converger simplifies your infrastructure by flattening the old 3 layer infrastructure design, saving the network bandwidth and management cost. The consolidation of local HDDs eliminates the cost required to implement and manage external share storage nodes. Flexible and robust data protection removes the cost and management effort required for storage HA and data protection. Finally VirtualStor™ Converger integrates its' management UI with VMware's management console, giving administrators a single pane of glass for management of the infrastructure which significantly reduces management effort.

| Model | BT-H2400 | BT-H4400 | BT-H2120 | BT-H4240 |
|---|---|---|---|---|
| Picture | | | | |
| Form factor | 2U, 4 Nodes | 4U, 4 Nodes | 2U, Single Node | 4U, Single Node |
| Data disks | 4 x 4 x 2.5" HDD | 4 x 6 x 3.5" HDD | 12 x 3.5" HDD | 24 x 3.5" HDD |
| Cache disks | 4 x 2 x 2.5" SATA SSD | 4 x 2 x 2.5" SATA SSD | 2 x 2.5" SATA SSD | 4 x 2.5" SATA SSD |
| Network Connections | Dual 10Gb or Quad 10Gb 2x1Gb RJ45 | Dual 10Gb or Quad 10Gb 2x1Gb RJ45 | Dual 10Gb or Quad 10Gb 2x1Gb RJ45 | Dual 10Gb or Quad 10Gb 2x1Gb RJ45 |
| Storage Protocols | iSCSI/FC CIFS/NFS Amazon S3 OpenStack Swift | iSCSI/FC CIFS/NFS Amazon S3 OpenStack Swift | iSCSI/FC CIFS/NFS Amazon S3 OpenStack Swift | iSCSI/FC CIFS/NFS Amazon S3 OpenStack Swift |
| Minimum number of appliances | 1 | 1 | 3 | 3 |
| Usage scenario | Small to mid scale of desktop virtualization | Server virtualization. HCI platform. | Mid to large scale of desktop/server virtualization. High performance HCI platform. | Large scale of desktop/server virtualization. High capacity HCI platform. |

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