Tintri VMstore™

VMstore

Experience different! Tintri VMstore intelligent infrastructure delivers the best quality of service for all your virtualized workloads, maximizing performance, automating storage management and providing real-time analytics – so you can spend less time on storage management and refocus your efforts on high-impact projects and business innovation.

Why Choose VMstore?

IT departments spend a lot of time managing storage that's not optimized for virtualized environments. VMstore Intelligent Infrastructure removes legacy constraints of standard infrastructure and provides autonomous, intelligent operations that eliminate many manual steps associated with deployment, troubleshooting, workload balancing, data protection, and more, saving time and money while reducing errors. You also get VM-level visibility and control, scalability to hundreds of thousands of VMs, and deep insights and recommendations that boost performance and uptime for all your virtualized applications.

How is VMstore Different?

Since today's data centers are increasingly virtualized, VM-level storage management offers a different experience – a simpler way to enable policy-based performance optimization, disaster recovery, security, and DevOps to drive efficiencies and improve business results.

PREDICTABLE PERFORMANCE. Each VM and database gets the resources needed to deliver outstanding performance and <1ms latency. Workloads are isolated and resources adjusted dynamically and automatically as I/O needs change – with zero administrator intervention.

VISIBILITY WITH VALUE. Real-time analytics provide latency statistics for each VM, enabling you to troubleshoot bottlenecks in seconds. Predictive analytics enable you to plan resource needs 18 months into the future and provision with precision.

ACCELERATED PRODUCTIVITY. Copy data management speeds developer velocity and enhances efficiency with snapshots that can spin up 1,000 VMs and database clones in minutes. You can easily accommodate data growth by scaling to over 40PB capacity and improve agility by quickly moving workloads across data centers or to the cloud.

Intelligent Infrastructure Delivers a Better Customer Experience

Storage has become commoditized, including flash storage. Well-known vendors have solutions that work, but they are standard infrastructure, where performance, data services redundancy, deduplication, compression, data protection, and other capabilities are expected "table stakes". What is not standard is the experience of humans, both those who manage IT and their customers; there is opportunity to choose a different experience.

<1ms
Latency for each VM

Seconds, Not Minutes
Troubleshoot Fast with Real-Time Analytics

<1 Hour
From Box to Production

18 Months
Predict Resource Needs in Advance

"Four years after we purchased VMstore... other storage vendors still have not caught up to what the VMstore systems could do...Tintri is storage for those who have better things to do than manage storage."

John Ward, Enterprise Architect, UC Irvine

"With VMstore... we were able to terminate our managed services contracts—now it takes just one person a quarter of their time to manage a footprint that spans multiple data centers. Growing our footprint without adding management burden is a requirement..."

Mike Baker, Data Center Architect, Takeda

Tintri
Intelligent Infrastructure

Infrastructure decisions have been historically made on three vectors: price, performance, and whatever "good enough" experience comes with it. Like any triple constraint, organizations select two of the three – typically performance (all flash today), price per gigabyte, and accept what operational efficiency is received. Performance is abundant today in all flash, thus allowing price and "experience" to be the differentiating choices.

The agility of the cloud experience has raised expectations for the operational experience in private data centers. This offers a different experience that does not force you to compromise on expected storage capabilities while delivering a completely different operational experience. Your business can benefit too from Intelligent Infrastructure, which has been proven by thousands of Tintri enterprise customers who have saved millions of hours related to storage administration.

Choose Intelligent Infrastructure for a better customer experience!

Better Business Decisions with Powerful Analytics

Standard infrastructure struggles to scale beyond a few hundred VMs. VMstore's patented scale-out technology lets you grow a federated storage pool to 64 systems and 480,000 VMs. But it's not enough to scale VMs; you need to operate your virtualized environment efficiently at scale. Tintri Global Center (TGC) lets you manage all VMs for individual storage systems, applications, and databases from a single console. Broad visibility with deep intelligence help pinpoint problems almost immediately. Advanced analytics and timely recommendations also enable you to optimize application distribution across systems and data centers to save time, bandwidth, and capacity.

Building a Foundation for AIOps

Most data centers are complex, with separate technology layers for storage, networking, VMs, and more, each with their own management tools. This creates management complexity that inhibits both visibility and action. VMstore intelligent infrastructure is a foundational technology for AIOps. It collects insights and manages data structures for VMs, containers, databases, and applications. It does this by not just being aware of VMs and databases, but by integrating with them. By understanding trends, anomalies, and alerts at the individual VM level you can improve the productivity of all your databases and applications.

Policy-Based Data Management

In addition to centralized administration and deep analytics, VMstore systems offer a range of integrated data services that simplify and automate infrastructure management. Capabilities include 2-click replication for worry-free disaster recovery, cloud connectivity for fast cloud-based replication, copy data management for space-efficient snapshots, and flexible scale-out technology that lets you add capacity one drive at a time or as complete systems.

Tintri VMstore T7000 NVMe Platform

Product Specifications				
VMstore T7000 Model		**VMstore T7080**	**VMstore T7060**	**VMstore T7040**
Application Density	VMs (max)	7,500	5,000	2,500
	vDisks (max)	22,500	15,000	7,500
Flash	Effective capacity[ab]	Up to 645TB		
	Raw capacity	20 to 185TB		
	Data protected as DP/DR target[ac]	Up to 1290TB		
Onboard Network ports per controller	Admin ports	2 x 1/10GBASE-T		
	Data/Replication ports	2 x 1/10GBASE-T		
	Management port	1 x 1GBASE-T		
Optional Network ports per controller	Data ports	2 x 100GbE or 2 x 40GbE or 2 x 25GbE[d] or 4 x 10GbE[ef] or 2 x 10GbE		
	Replication ports	2 x 100GbE or 2 x 40GbE or 2 x 25GbE[d] or 4 x 10GbE[ef] or 2 x 10GbE		
Physical Specifications	Dimensions (HxWxD)	2RU, 3.5" x 19.0" x 34.5" (89mm x 483mm x 850mm) without bezel		
	Weight 10x NVMe drives	84.2 lbs (38.19kg)		
	Weight 24x NVMe drives	90.6 lbs (41.09kg)		
	Power supplies	Dual fully redundant hot swappable power supplies; Choice of NEMA or IEC plug types		
Operational Specifications	Voltage	200-240 VAC / 50-60 Hz		
	Watts (avg./max)	870 / 2000		
	BTUs (avg./max)	2969 / 6824		
	Operating temp.	5°C to 35 °C (41°F to 95°F)		
	Operating humidity	8% to 85% (non-condensing)		
	Non-oper. temp.	-40°C to 60°C (-40°F to 140°F)		
	Non-oper. humidity	8% to 95% (non-condensing)		
System	Type	Fully redundant all-flash hot swappable dual controllers		
Software	Tintri OS	Software Tintri OS TintriOS 5.2 or higher		
Workloads	Supported Hypervisors and Databases	VMware vSphere®, Microsoft® Hyper-V, Red Hat® Enterprise Virtualization (RHEV), Citrix Hypervisor, and Microsoft® SQL Server		
Additional Software	Management	Tintri Global Center™ Standard (included)		
	Analytics	Tintri Analytics[g]:Up to 3 years of detailed operational historical metrics		
	Tintri Software Suite	ReplicateVM™: Synchronous and Asynchronous Replication VMstore Cloud Connector™: Public Cloud Connector Tintri Global Center™ Advanced: VM Scale-out[a] SyncVM™: Copy Data Management: SecureVM™: Data-at-rest Encryption SQL Integrated Storage FIPS 140-2 NIST Validated Encryption[h]		
Product Support	Administration	Revolutionizing and Minimizing Storage Management with Intelligent Infrastructure		
	Support	Proactive support with automated phone home and case creation		
Regulatory		UL/CSA/EN/IEC 60950-1, EMC Emissions Class A, FCC, IC, CE, VCCI, RCM, BSMI, EAC, KC, ROHS, REACH, WEEE		

a. Effective capacity refers to usable space. It is calculated by removing data protection overhead from RAW capacity, and then a space savings multiplier is applied. Data protection overhead includes double parity, hot spare and internal reserves for metadata. Space savings is derived from inline deduplication, compression and clone savings, but does not include thin provisioning. Data reduction typically provides 2.5-5x capacity savings; 5x was used for the value shown.

b. One MB is equal to one million bytes, one GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes) when referring to storage capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of SSDs, the operating system, and other factors.

c. Assumes minimum policy of 8 hourly snapshots, 7 daily snapshots, and 4 weekly snapshots. All snapshots are logically represented as full recoveries.

d. Supports Auto-Negotiation down to 10 GbE.

e. Supports Auto-Negotiation down to 1 GbE.

f. Copper 10GBASE-T only for 4 port card option.

g. Included with an active VMstore maintenance contract.

h. Only available as a factory installed and configured option on a new VMstore T7060 or VMstore T7080 system.

VMstore: VM- and DB-Integrated Intelligent Infrastructure

Models		EC6090	EC6075	EC6055	EC6030
64 Systems					
Flash	Effective capacity[bde]	Up to 41.3PB	Up to 41.3PB	Up to 20.6PB	Up to 5.2PB
	Flash raw capacity[e]	11.8PB	11.8PB	5.9PB	1.5PB
	Data protected as DP/DR target[bce]	82.6PB	82.6PB	10.4PB	10.4PB
Application Density	VMs (max)	480,000	480,000	160,000	32,000
Per System					
Flash	Effective capacity[bd]	Up to 645TB	Up to 645TB	Up to 322TB	Up to 81TB
	Flash raw capacity	25 to 184TB	25 to 184TB	12 to 92TB	6 to 23TB
	Data protected as DP/DR target[bc]	Up to 1290TB	Up to 1290TB	Up to 645TB	Up to 161TB
Application Density	VMs (max)	7,500	5,000	2,500	750
	VDisks (max)	15,000	15,000	7,500	2,500
Onboard Network ports per controller	DATA ports	2 x 10GbE			
	ADMIN ports	2 x 1GbE			
	REPL ports	2 x 1/10GbE			
Optional Network ports per controller	DATA ports	2 x 40GbE or 4 x 10GbE or 2 x 25GbE			
	REPL ports	2x 40GbE or 4x 10GbE or 2x 1/10GbE or 2x25GbE			
Physical Specifications	Dimensions (HxWxD)	2RU, 3.5" x 19.0" x 34.63" (89mm x 483mm x 880mm) without bezel			
	Weight 13x SSDs	72.8 lbs (33.0kg)	72.5 lbs (32.9kg)	72.1 lbs (32.7kg)	69.2 lbs (31.4kg)
	Weight 24x SSDs	74.5 lbs (33.8kg)	74.2 lbs (33.7kg)	73.8 lbs (33.5kg)	70.9 lbs (32.2kg)
	Power supplies	Dual redundant hot swappable with a choice of NEMA or IEC plug types			
	Watts (avg./max)	650 / 1100	550 / 1100	464 / 1100	433 / 1100
	BTUs (avg./max)	2218 / 3412	1877 / 3412	1583 / 3412	1477 / 3412
	Operating temp.	5°C to 40 °C (41°F to 104°F)			
	Non-oper. temp.	-40°C to 70°C (-40°F to 158°F)			
	Operating humidity	8% to 90% (non-condensing)			
	Non-oper. humidity	5% to 95% (non-condensing)			
System	Type	All-flash dual controller (active-standby)			
Software	Tintri OS	Requires Tintri OS 4.3.3.x or higher			
Virtualization	Supported Hypervisor Integrations	VMware vSphere, Microsoft HyperV, Red Hat Enterprise Virtualization (RHEV), Citrix XenServer, OpenStack, and Microsoft SQL Server			
Additional Software	Management	Tintri Global Center™ Standard (included)			
	Analytics	Tintri Analytics (included in active VMstore maintenance contract)			
	Tintri Software Suite	Synchronous and Asynchronous Replication: ReplicateVM™ Public Cloud Connector: VMstore Cloud Connector™ VM Scale-out: Tintri Global Center™ Advanced Copy Data Management: SyncVM™ Data-at-rest Encryption: SecureVM™			
Product Support	Administration	Tintri Global Center, web interface (https), KVM (console), SMTP and SNMP for alerts			
	Support	Proactive support with automated phone home and case creation			
Regulatory		UL/CSA/EN/IEC 60950-1, EMC Emissions Class A, FCC, IC, CE, VCCI, RCM, BSMI, EAC, KC, ROHS, REACH, WEEE			

a. VMstore Scale-out enables you to manage storage as a federated pool, heterogeneously accommodating hybrid/all-flash nodes for both existing and future systems. You can start with one 19TB all-flash system and grow up to 40PB capacity supporting up to 480,000 virtual machines.

b. Effective capacity refers to usable space. It is calculated by removing data protection overhead from RAW capacity, and then a space savings multiplier is applied. Data protection overhead includes double parity RAID-6, hot spare and internal reserves for metadata. Space savings is derived from inline deduplication, compression and clone savings, but does not include thin provisioning. Data reduction typically provides 2.5-5x capacity savings; 5x was used for the value shown.

c. Assumes minimum policy of 8 hourly snapshots, 7 daily snapshots, and 4 weekly snapshots. All snapshots are logically represented as full recoveries.

d. One MB is equal to one million bytes, one GB is equal to one billion bytes and one TB equals 1,000GB (one trillion bytes) when referring to storage capacity. Accessible capacity will vary from the stated capacity due to formatting and partitioning of SSDs, the operating system, and other factors.

e. Stated capacity assumes a homogeneous pool of 64 nodes equipped at maximum capacity. Scale-out storage pools can be heterogeneous with a mixture of up to 64 all-flash and hybrid system nodes.

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