Tintri



Tintri VMstore[™] T800 Series

Smart storage that Sees, Learns and Adapts

The Tintri VMstore™ T800 series is designed to address the needs of virtualization and cloud environments. Traditional storage is a mismatch for the specialized demands of virtualized workloads, requiring complex configuration, significant over-provisioning and ongoing optimization and management. VMstore addresses the challenges traditional storage platforms pose when virtualizing critical server workloads such as Microsoft® Exchange®, Microsoft® SQL Server®, Microsoft® SharePoint®, Oracle® and SAP® databases, end-user desktops, and cloud architected workloads.

Built using the industry's first and leading application-aware storage architecture, the Tintri VMstore T800 Series sees storage at the VM and vDisk level—learning and adapting to rapidly-changing workloads, eliminating mundane storage management tasks and delivering substantial improvements in performance and density over legacy storage. The Tintri VMstore T800 Series is ideal for virtualized and private cloud environments in midsize and large enterprises that manage hundreds or thousands of virtual machines. Applicable to multiple use cases, this product line satisfies a variety of workloads such as persistent VDI deployments with mixed end users, database and other business critical applications, data protection and disaster recovery, and cloud environments with large numbers of automatically deployed virtual machines and an overall high rate of change.

Whether you are an IT architect, administrator or manager, Tintri VMstore can help you:

Realize the full potential of virtualization with intelligent storage.

- Set-up in minutes with support for multiple VMware vSphere or Red Hat Enterprise Virtualization datacenters. Manage storage at the level of VMs and vDisks, not LUNs and volumes—eliminating complex configuration or ongoing tuning.
- Get 99 percent of IO from flash, for all-flash performance without the all-flash price.
- Serve hundreds of different types of VM workloads from a single VMstore with dedicated IO lanes per vDisk and performance allocation—eradicating the impact from noisy neighbors on other virtual workloads.

Eliminate bottlenecks and troubleshooting overhead with infrastructure insight.

- Get a single view of all VMs stored and identify performance and capacity trends without the complexity associated with low-level storage constructs.
- Instantly identify performance hot spots at the hypervisor, network and storage levels with comprehensive performance visualization.
- Leverage optional Tintri Global Center[™] software to monitor and administer multiple VMstore systems and resident VMs from a single control pane.

Stay in control of virtualization environment while VMstore eliminates mundane storage management tasks.

- Protect individual VMs with customizable policies for VM-level instant space-efficient snapshots—eliminating the complexity of LUNs and volumes mapping.
- Deploy WAN-efficient replication at the VM-level using as much as 95 percent less bandwidth with block-level global deduplication and compression over the wire with optional ReplicateVM™ software
- Store up to 100 TB of effective capacity with inline data reduction.
- Create hundreds of high performance zero-space VM clones locally or remotely. Ideal for speeding up VDI deployments and for development/test workloads.
- Protect data with optional SecureVM[™] software to encrypt data inline using 256-bit AES algorithms and without impacting performance, with in-built key rotation.



Storage that Sees:

 Designed specifically for virtualized applications, VMstore automatically configures itself based on your environment and provides a complete end-to-end view of all virtual workloads.

Storage that Learns:

 VMstore maintains constant communication with your entire virtualized environment. Actively changing VMs are tracked and highlighted so you have status on a moment-by-moment basis.

Storage that Adapts:

 Because of unique per-VM data management and operations, VMstore can make adjustments including a dedicated IO "lane" per VM to maintain the best service for all virtualized applications.

"Compared to our previous storage, Tintri VMstore can run ten times the VMs in less than a tenth of the data center footprint, and reduce latency by 98 percent at the same time. They helped us realize a fundamental goal of virtualization: consolidating workloads and increasing resource utilization, both on hosts and on storage."

-Mike Torgersen

vice president of IT at ParAccel



Tintri VMstore[™] T800 Series

VMstore T880

Ideal for highly virtualized enterprise and private cloud environments requiring performance and scalability for thousands of VMs

VMstore T850

Ideal for highly virtualized enterprise environments requiring performance and scalability for thousands of VMs

VMstore T820

Ideal for midsized and remote/ branch environments requiring efficiency to handle hundreds of VMs

Controller Type Gen 5 Dual Controller (active-standby) supporting Tintri OS 31 and up VM Density VMs (max) 3.500 2.000 750 Flash(o) Raw 8.8 TB 5.3 TB 1.7 TB Bear (Capacitys) Baw* 78 TB 5.3 TB 1.7 TB Capacity(o) Usable* 45 TB 3.0 TB 1.0 TB Beffective Usable** 100 TB 66 TB 2.3 TB Metworking Management Included: 2x 1GbE (RJ-45) Included: 2x 1GbE (RJ-45) Included: 2x 1GbE (RJ-45) Data Included: 2x 1GbE (RJ-45) Included: 2x 1GbE (RJ-45) Included: 2x 1GbE (RJ-45) Included: 2x 1GbE (RJ-45) Plysical special control Replication Included: 2x 1GbE (RJ-45) Included: 2x 1GbE (RJ-45) Optional: 2x 1GbE (RJ-45)			scalability for thousands of VMS	thousands of VMs	of VIMS
Volsks (max)	Controller	Туре	Gen 5 Dual Controller (active-standby) supporting Tintri OS 3.1 and up		
Flash(0) Row 8.8 TB 5.3 TB 1.7 TB	VM Density	VMs (max)	3,500	2,000	750
Raw 78 TB 52 TB 20 TB		vDisks (max)	10,000	6,000	2,250
Usable*	Flash(a)	Raw ^a	8.8 TB	5.3 TB	1.7 TB
Effective Usable***	Capacity(a)	Raw ^a	78 TB	52 TB	20 TB
Management Included: 2x 106E (RJ-45) Optional: 2x 10		Usable⁵	45 TB	30 TB	10.5 TB
Data Included: 2x 1GBE (SFP+ or 10GBASE-T) (SFP+ or 10GBASE-		Effective Usable ^{c,d}	100 TB	66 TB	23 TB
Networking	Networking	Management	Included: 2x 1GbE (RJ-45)	Included: 2x 1GbE (RJ-45)	Included: 2x 1GbE (RJ-45)
Physical Software functionality Ethernet failover link aggregation, VLAN tagging, IP aliasing, LACP Physical Specifications Weight 108 lbs (491 kg) 108 lbs (491 kg) 106 lbs (48.2 kg) 100-140/180-240 VAC 6 50-60 Hz (nom/max) 780 VA / 1.000 VA 714 VA / 861 VA 630 VA / 788 VA 630 VA / 788 VA 630 VA / 789 VA / 1.000 VA 714 VA / 861 VA 630 VA / 788 VA 630 VA / 789 VA / 1.000 VA 714 VA / 861 VA 630 VA / 789 VA / 1.000 VA 714 VA / 861 VA 630 VA / 789 VA / 1.000 VA 714 VA / 861 VA 630 VA / 789 VA / 1.000 VA 714 VA / 861 VA 630 VA / 789 VA / 1.000 VA 714 VA / 861 VA 630 VA / 789 VA / 1.000 VA 714 VA / 861 VA 630 VA / 789 VA / 1.000 VA / 1.000 VA 789 VA / 1.000 VA / 1.00		Data			Optional:
Physical specifications Dimensions (HxWxD) 4 RU, 7" (178 mm) x 19" (483 mm) x 28.5" (724 mm) Weight 108 lbs (49.1 kg) 108 lbs (49.1 kg) 106 lbs (48.2 kg) 100-140/180-240 VAC		Replication	, ,		
100-140/180-240 VAC		Software functionality	Ethernet failover link aggregation, VLAN tagging, IP aliasing, LACP		
100-140/180-240 VAC	•	Dimensions (HxWxD)	4 RU, 7" (178 mm) x 19" (483 mm) x 28.5" (724 mm)		
## So-60 Hz (nom/max) Watts (nom/max) Watts (nom/max) ## Power & environmental Power & environmental Power supplies Operating temperature Non-operating temperature Operating humidity Non-operating humidity Non-operating humidity Non-operating humidity Non-operating humidity Non-operating humidity Feducation Agency Product Support Product Support Froduct Support Product Support Product Support Wirtualization Wirtualization Wirtualization Wirtualization Wish Soft Soft Soft Soft Soft Soft Soft Soft		Weight	108 lbs (49.1 kg)	108 lbs (49.1 kg)	106 lbs (48.2 kg)
Power & environmental Power supplies Dual redundant hot swappable power supplies with a choice of NEMA or IEC plug types Operating temperature 5° C to 40° C (41° F to 104° F) Non-operating temperature -40° C to 70° C (-40° F to 158° F) Operating humidity 8% to 90% (non-condensing) Non-operating humidity 5% to 95% (non-condensing) Compliance RoHS, REACH Safety CSA/EN/IEC 60950-1, GOST Emissions FCC Class A, ICES-003 Class A, VCCI Class A Agency CE, CSA, VCCI, CCC Product Support Proactive support with automated phone home and case creation Virtualization SW support Additional Software Sphere 4.x and 5.x (NFS) Red Hat Enterprise Virtualization 3.3+ (NFS) Red Hat Enterprise Virtualization 3.3+ (NFS) Desktop virtualization VMware Horizon(with View) and Citrix XenDesktop Multi VMstore management Tintri Global Center" Additional Software Replication Tintri ReplicateVM"			780 VA / 1,000 VA	714 VA / 861 VA	630 VA / 788 VA
Power & environmental Power supplies Operating temperature Operating temperature Non-operating humidity Non-opera		Watts (nom/max)	740 / 950	680 / 820	600 / 750
Product Support Support Support Support Support Support Support Support Additional software Operating temperature Operating temperature Non-operating temperature Non-operating humidity Support Support Operating humidity Support Operating humidity Support Support Operating humidity Support Operating temperature Support Operating tempe		BTU (nom/max)	2,525 / 3,240	2,320 / 2,800	2,000 / 2,560
Operating temperature Non-operating temperature Operating humidity Non-operating humidity Non-operating humidity Non-operating humidity Non-operating humidity S% to 95% (non-condensing) Compliance RoHS, REACH Safety CSA/EN/IEC 60950-1, GOST Emissions FCC Class A, ICES-003 Class A, VCCI Class A Agency CE, CSA, VCCI, CCC Product Support Administration Tintri Global Center, web interface (https), KVM (console), SMTP and SNMP for alerts Support Virtualization Whypervisor Additional SW support Additional software Multi VMstore management Replication Replication Tintri Global Center* Multi VMstore management Replication Tintri Global Center* Tintri Global Center*		Power supplies	Dual redundant hot swappable power supplies with a choice of NEMA or IEC plug types		
Operating humidity 8% to 90% (non-condensing) Non-operating humidity 5% to 95% (non-condensing) Compliance RoHS, REACH Safety CSA/EN/IEC 60950-1, GOST Emissions FCC Class A, ICES-003 Class A, VCCI Class A Agency CE, CSA, VCCI, CCC 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 Vintualization SW support Proactive support with automated phone home and case creation VMware vSphere 4.x and 5.x (NFS) Red Hat Enterprise Virtualization 3.3+ (NFS) Technology Preview: Microsoft Hyper-V 2012 (SMB3) Desktop virtualization Multi VMstore management Tintri Global Center™ Replication Tintri ReplicateVM™		Operating temperature	5° C to 40° C (41° F to 104° F)		
Non-operating humidity 5% to 95% (non-condensing) Regulatory Compliance RoHS, REACH Safety CSA/EN/IEC 60950-1, GOST Emissions FCC Class A, ICES-003 Class A, VCCI Class A Agency CE, CSA, VCCI, CCC Administration Tintri Global Center, web interface (https), KVM (console), SMTP and SNMP for alerts Support Support with automated phone home and case creation Virtualization VMware vSphere 4.x and 5.x (NFS) Red Hat Enterprise Virtualization 3.3+ (NFS) Technology Preview: Microsoft Hyper-V 2012 (SMB3) Desktop virtualization VMware Horizon(with View) and Citrix XenDesktop Additional Software Additional Replication Tintri Global Center**		Non-operating temperature	-40° C to 70° C (-40° F to 158° F)		
Regulatory Compliance RoHS, REACH Safety CSA/EN/IEC 60950-1, GOST Emissions FCC Class A, ICES-003 Class A, VCCI Class A Agency CE, CSA, VCCI, CCC 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 Virtualization SW support VMware vSphere 4.x and 5.x (NFS) Red Hat Enterprise Virtualization 3.3+ (NFS) Desktop virtualization VMware Horizon(with View) and Citrix XenDesktop Multi VMstore management Tintri Global Center™ Additional software Replication Tintri ReplicateVM™		Operating humidity	8% to 90% (non-condensing)		
RegulatorySafetyCSA/EN/IEC 60950-1, GOSTEmissionsFCC Class A, ICES-003 Class A, VCCI Class AAgencyCE, CSA, VCCI, CCCProduct SupportAdministrationTintri Global Center, web interface (https), KVM (console), SMTP and SNMP for alertsSupportProactive support with automated phone home and case creationVirtualization SW supportVMware vSphere 4.x and 5.x (NFS) Red Hat Enterprise Virtualization 3.3+ (NFS) Technology Preview: Microsoft Hyper-V 2012 (SMB3)Desktop virtualizationVMware Horizon(with View) and Citrix XenDesktopAdditional softwareReplicationTintri Global Center™ReplicationTintri ReplicateVM™		Non-operating humidity	5% to 95% (non-condensing)		
Emissions FCC Class A, ICES-003 Class A, VCCI Class A Agency CE, CSA, VCCI, CCC Administration Tintri Global Center, web interface (https), KVM (console), SMTP and SNMP for alerts Support Support Virtualization SW support Proactive support with automated phone home and case creation VMware vSphere 4.x and 5.x (NFS) Red Hat Enterprise Virtualization 3.3+ (NFS) Technology Preview: Microsoft Hyper-V 2012 (SMB3) Desktop virtualization VMware Horizon(with View) and Citrix XenDesktop Multi VMstore management Replication Tintri Global Center™ Replication Tintri ReplicateVM™	Regulatory	Compliance	RoHS, REACH		
Emissions FCC Class A, ICES-003 Class A, VCCI Class A Agency CE, CSA, VCCI, CCC Administration Tintri Global Center, web interface (https), KVM (console), SMTP and SNMP for alerts Support Support Virtualization SW support Virtualization SW support Desktop virtualization Multi VMstore management Emissions FCC Class A, ICES-003 Class A, VCCI Class A CE, CSA, VCCI, CCC Administration Tintri Global Center, web interface (https), KVM (console), SMTP and SNMP for alerts VMware vSphere 4.x and 5.x (NFS) Red Hat Enterprise Virtualization 3.3+ (NFS) Technology Preview: Microsoft Hyper-V 2012 (SMB3) VMware Horizon(with View) and Citrix XenDesktop Multi VMstore management Tintri Global Center** Replication Tintri ReplicateVM**		Safety	CSA/EN/IEC 60950-1, GOST		
Product Support Support Support Support Proactive support with automated phone home and case creation VMware vSphere 4.x and 5.x (NFS) Red Hat Enterprise Virtualization 3.3+ (NFS) Technology Preview: Microsoft Hyper-V 2012 (SMB3) Desktop virtualization Multi VMstore management Additional software Replication Tintri Global Center™ Replication Tintri ReplicateVM™		Emissions	FCC Class A, ICES-003 Class A, VCCI Class A		
Support Support Support Proactive support with automated phone home and case creation VMware vSphere 4.x and 5.x (NFS) Red Hat Enterprise Virtualization 3.3+ (NFS) Technology Preview: Microsoft Hyper-V 2012 (SMB3) Desktop virtualization VMware Horizon(with View) and Citrix XenDesktop Multi VMstore management Replication Tintri Global Center™ ReplicateVM™		Agency	CE, CSA, VCCI, CCC		
Virtualization SW support VMware vSphere 4.x and 5.x (NFS) Purpose Note In the Indicate Support with automated priorie frome and case creation Virtualization SW support VMware Hat Enterprise Virtualization 3.3+ (NFS) Desktop virtualization VMware Horizon(with View) and Citrix XenDesktop Multi VMstore management Tintri Global Center™ Additional software Replication Tintri ReplicateVM™	Support Virtualization	Administration	Tintri Global Center, web interface (https), KVM (console), SMTP and SNMP for alerts		
Virtualization SW support Hypervisor Red Hat Enterprise Virtualization 3.3+ (NFS) Technology Preview: Microsoft Hyper-V 2012 (SMB3) Desktop virtualization VMware Horizon(with View) and Citrix XenDesktop Multi VMstore management Tintri Global Center™ Replication Tintri ReplicateVM™		Support	Proactive support with automated phone home and case creation		
Additional software Multi VMstore management Tintri Global Center™ Replication Tintri ReplicateVM™		Hypervisor	Red Hat Enterprise Virtualization 3.3+ (NFS)		
Additional software Replication Tintri ReplicateVM™		Desktop virtualization	VMware Horizon(with View) and Citrix XenDesktop		
software Replication Tintri ReplicateVM**		Multi VMstore management	Tintri Global Center™		
		Replication	Tintri ReplicateVM™		
		Encryption	Tintri SecureVM™		

⁽a) All capacity values are based on Base 10 (i.e., 1 TB = 1,000,000,000,000 bytes)

(b) After double parity RAID-6, spare, and system overhead

(d) Effective usable capacity assumes a data reduction ratio of 2.2x, but does not include savings from thin provisioning which typically provides an additional 2.3x capacity benefit (based on actual customer results)



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⁽c) Effective usable capacity is calculated after data reduction, which typically provides 2x-2.5x capacity saving from compression and deduplication from per-VM cloning.