Tintri for Microsoft SQL Databases

Predictable performance, simplified troubleshooting, and 24/7 availability

Removing decades old storage constraints and complexity, Tintri provides all-flash storage and software to maximize the performance of databases and people who manage them. Powerful copy data management and end-to-end visibility further extend the benefits to your databases running on Tintri, uniquely built to store, serve, protect and manage databases and virtual machine data. Tintri delivers:

- Availability Guarantee the performance of business-critical databases running 24/7
- Visibility Troubleshoot performance issues with real-time monitoring and actionable insights
- **Resiliency** Failover to one or more DR site(s) to offer databases multiple backup and restore options

Availability with Performance Isolation

Individual performance lanes with auto tuning, and elimination of noisy neighbors

The value of virtualization comes from running multiple virtualized workloads on shared infrastructure. The ability to isolate mixed workloads effectively is a must. Unpredictable I/O patterns put high demands on virtualized infrastructure. An index miss that forces a complete table scan, combined with index rebuilds and database backups, can compete with record updates and reduce the responsiveness of the database. Tintri all-flash storage delivers the IOPS needed for high performance databases and is unique in providing performance isolation for each IO request. Tintri technology guarantees the performance of each virtualized SQL database.

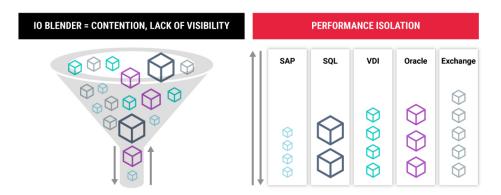


FIGURE 1. Performance isolation delivers predictable performance for mixed workloads

"SQL queries that used to take six hours now take four minutes—this has greatly improved customer satisfaction."

Glen Kendell, President of Hosting & Operations, Concourse Hosting



Visibility with Latency Visualization

Cross-infrastructure troubleshooting that puts an end to finger-pointing

When a database encounters a performance issue, it often takes several database administrators (DBAs), plus storage, network, and virtualization admins to figure out the cause. However, since each administrator only has visibility into one part of the infrastructure, problems take longer to resolve and your business suffers. Tintri ends guesswork as you go straight to the root cause of the issue and solve it - in seconds. Tintri provides end-to-end visibility across the entire infrastructure. We also integrate with SentryOne – a leader in SQL database monitoring to provide full-stack performance analytics across SQL server and your virtual infrastructure.

Dashboard Virtu	al Machines						
Service groups VMs Virtual disks Snaps		Host	Network	Storage 1.2 ms			
VM1	IOPS 5	30.6 ms		Contention 0.0 ms	Flash 0.7 ms	Disk 0.5 ms	-
VM2					017 1115	ULS IIIS	,0
SQL_DB_test		55	1.1		4.5		2
SQL_DB_prod		33	5.1		2.1		
VM3	6,04	49	65.7 📕		2.0		
Analytics VM		5	0.2		1.7		1
Analytics VM	38	83	2.7		1.5		2
Analytics VM		3	0.06		1.3		7

FIGURE 2. End-to-end visibility across host, network and storage speeds up troubleshooting.

Resiliency with Database Protection

Keep your data safe and businesses running 24/7

DBAs rely on Microsoft and VMware tools, such as SQL Server "AlwaysOn" Availability Groups and VMware High Availability to make sure their databases are on all the time. However, hardware failures, human error, and even routine software upgrades can cause unexpected problems. Storage need to provide consistent snapshots to keep the data and log files in sync.

However, most DBAs are not storage experts. They speak in terms of recovery point objective (RPO) and recovery time objective (RTO) and are accountable for these metrics down to the second. DBAs often find conventional storage based on LUNs too complicated and pose potential risks to business continuity. It requires constant tuning and becomes obsolete quickly as business needs change. Tintri eliminates storage complexity, helping DBAs to achieve low RPOs and RTOs with database level snapshots, clones and replication.

