Tintri for Microsoft SQL Server

Predictable performance, simplified troubleshooting, and intuitive planning

Microsoft SQL Server is one of the most widely used databases for transaction processing and reporting in enterprises. Decision support systems (DSS) for finance and sales can see tremendous load during peak periods such as quarter end, when large numbers of ad hoc queries and reports must be processed. For an online transaction processing (OLTP) database, even seconds of downtime can cost enterprises a sizeable loss. Therefore, the underlying storage must provide sub-millisecond latency and predictable performance while supporting the mixed workloads typical in SQL Server environments.

Tintri VM-aware storage (VAS) addresses these challenges, delivering outstanding performance and helping your organization meet key business requirements for:

- **Availability**—Business-critical databases must be running and available 24/7
- **Resiliency**—Databases must offer multiple backup and restore options and the ability to failover to a disaster recovery (DR) site
- **Maintainability**—Simple monitoring with clear insight into infrastructure is a must for analysis troubleshooting of database performance issues

Microsoft and VMware provide tools, such as SQL Server "AlwaysOn" Availability Groups and VMware High Availability, but hardware failures, human error, and even routine software upgrades can cause unexpected problems because the storage cannot guarantee consistent snapshots needed to keep the data and log files in sync. All of these make the underlying storage critical to business continuity.

Most database administrators (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. It requires constant tuning and becomes obsolete quickly as business needs change. Tintri eliminates storage complexity, making it easier for DBAs to achieve their performance and availability goals.

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. The Tintri VAS architecture 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 Server database.
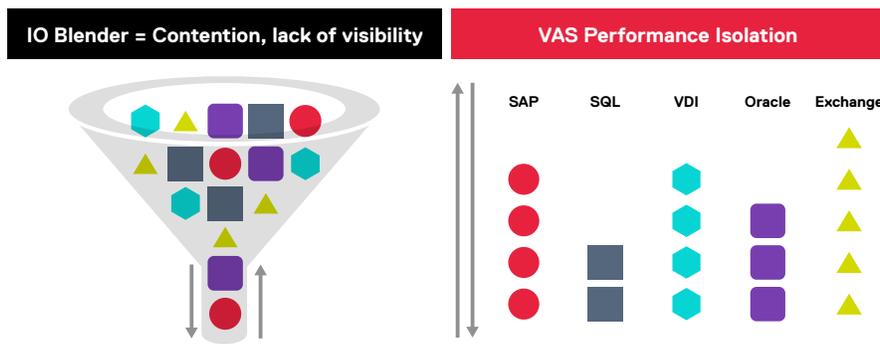

Figure 1—Performance isolation delivers predictable performance for mixed workloads

"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

Latency and Performance Visualization

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

When a database encounters a performance issue, it often takes several 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 provides end-to-end visibility across the entire infrastructure stack for fast root cause identification.
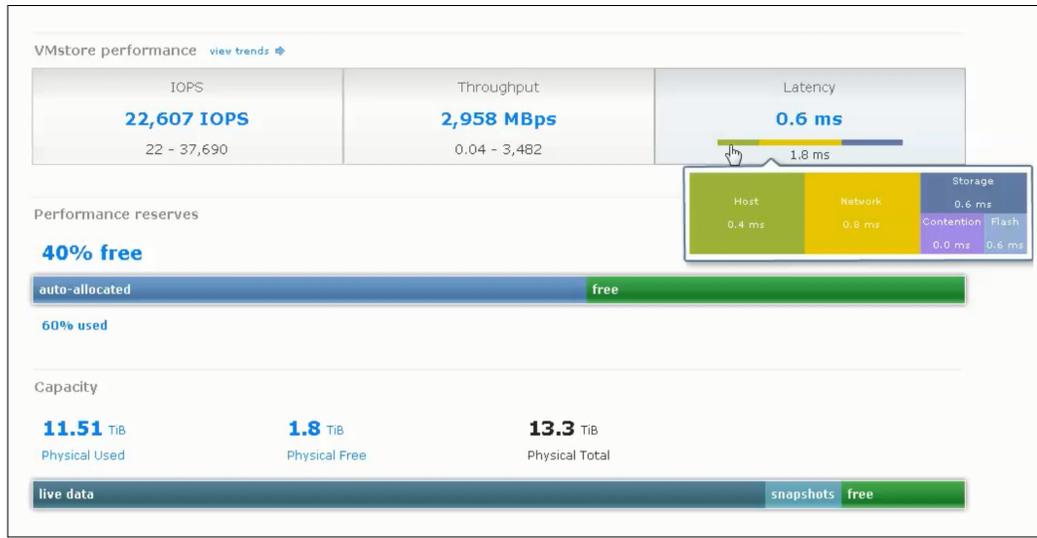

Figure 2—Tintri end-to-end visibility across host, network and storage

Predictive Analytics

Pinpoint when storage capacity or performance will run out

DBAs must be able to predict when more resources will be needed to support either the organic growth of SQL Server or a project-based initiative. It is critical to understand database needs and what resources—both capacity and performance—are most needed. Tintri Analytics provides an intuitive planning tool that uses up to three years of historical data to project future needs, guaranteeing continued database performance without unexpected bottlenecks. Built-in what-if simulations allow you to make more informed decisions.
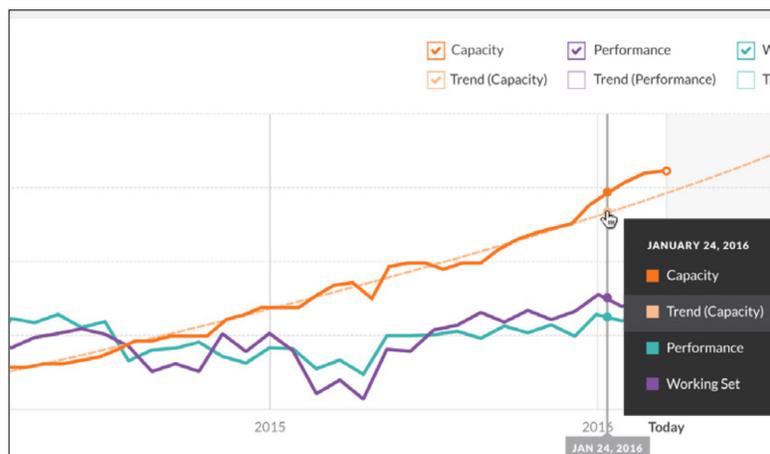

Figure 3—Predict future storage needs of your SQL databases

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