



# Microsoft® SQL Server® 2012



## SQL Server 2012 Fast Track Data Warehouse for Tegile

The world of data is changing with businesses facing an explosion in information volumes and new data types generated from transactional growth and an increase in unstructured data, image files, and data from new sources – such as web logs, social media, and sensor networks.

IT organizations are being asked new sets of questions that incorporate new types and shapes of data for business insights. As a result, IT departments must adapt to provide value in this changing dynamic while still under pressure to spend less.

Fast Track Data Warehouses from Tegile and Microsoft meet these needs by providing a reference architecture data warehouse (DW) that can scale DW workload requirements up to 20TBs, that is certified by Tegile to offer the optimal performance on industry

standard hardware, embrace complex data types and non-traditional sources with integration to Big Data, that has familiar tools to empower everyone in the organization to analyze data and without needing to break the IT budget.

With SQL Server 2012 Fast Track Data Warehouse for Tegile, Microsoft and Tegile deliver a cost-effective high performance Data Warehouse solution. The Tegile Zebi Hybrid Storage Arrays in this solution provide performance usually associated with all-flash storage arrays, while their cost is comparable to that of inexpensive spinning disk based storage. The solutions range from 1TB to 20TB Certified Data Warehouse architectures. This next generation solution dramatically simplifies usage, management and expansion of Data Warehouses and BI solutions.

Tegile Zebi storage arrays integrate into Microsoft Windows Servers environments with support for Clustered Shared Volumes (CSV), Volume Shadow Copy Services (VSS) and come loaded with advanced data management features like inline deduplication, inline compression, SQL consistent snapshots and remote replication at no additional cost.

### Highlights

- **20 TB Certified DW**
- **40 TB Max User Data Certified**
- **Up to 2.8 GB/s of Random I/O Throughput**
- **Up to 8.7 GB/s CSI\*\* Throughput**
- **Parallel Data Loading**
- **Predictable Response Times**



Figure 1: Tegile Zebi HA2400 & ES2400 29TB (RAW)  
\*\*Column Store Index

## Any Data, Anywhere

### Next-generation Performance

SQL Server 2012 Fast Track Data Warehouse for Tegile features a new generation of hybrid storage arrays. Most active data resides in DRAM and Flash on the storage array. This system delivers very high IOPs and sustained performance. Unlike legacy spinning media, performance is unaffected by where your data resides or how it was loaded into the DW. Tegile Hybrid Arrays do not waste expensive Flash on stale and infrequently-accessed data. As a result, Tegile Arrays are priced with realistic budgets in mind.

SQL Server xVelocity in-memory technologies further extend performance gains, delivering a generational leap in performance (10-100x times) for single query execution and measured workload throughputs at double Fast Track for SQL Server 2008 R2 rates.

*"With the implementation of Tegile's arrays, storage is no longer an issue at Aer Lingus. The deployment has given us more bang for our buck and allowed a lot more breathing space for our IT team."*

*- Brian Price, IT Architect  
Aer Linaus*

### Big Data

By integrating unstructured data from a Hadoop cluster, SQL Server 2012 Fast Track Data Warehouse deployments can gain new insights using new types of relevant data in the analysis.

## Fastest Time to Solution at Lowest Cost

The Tegile SQL Server 2012 Fast Track Data Warehouse does not require a complex solution involving any database restructuring or countless hours of code rewriting to accommodate data locality or vendor-specific tuning requirements. Tegile Hybrid arrays make the most active data equally available at any time. This allows for any data schema or pre-existing storage layout to be quickly ported over.

### Consolidation / TCO

At 5U the 40TB\*\* Tegile SQL Server 2012 Fast Track Data Warehouse will take up less space, power and HVAC than existing solutions all while delivering more predictable and stable query durations. These unique hybrid systems also allow for complete elimination of expensive tiering or data locality management software, further accelerating the solution ROI.

### Low Maintenance

There is no need to purchase new spindles or continually tune the storage configuration to maintain performance as the size of the datawarehouse grows over time.

### Pre-Tested

SQL Server 2012 Fast Track Data Warehouse for Tegile is a guided-build reference architecture which means it delivers a pre-certified best practices guide to configure the storage array and setup/tune the software for an optimized configuration between Microsoft SQL Server 2012 and Tegile Zebi storage arrays. A reference architecture guide contains step-by-step and screen-by-screen instructions on how to build the certified configuration. End-to-end installation, configuration and migration services are also available from consulting companies.

This eliminates complex hardware and software balancing and takes the guesswork out of system configuration by removing the need to carefully plan, tune, configure and test various configurations; getting things right the first time. This approach has saved customers like law firm Hedrick Gardner months of development time.

*"With Tegile, I saw it as sort of a Swiss Army knife for the technology," said DeHart. "The technology portfolio that the Tegile devices have was paramount to our decision in this process. Tegile's approach to the technology is 'here's the device and you can pretty much do anything you want.'"*

*Jeremy DeHart, Information  
Technology Manager  
Hedrick Gardner*

## Immersive Insight, Wherever You Are

The top barriers to Business Intelligence solution adoption across the enterprise are the cost and complexity of the solution. Microsoft BI eliminates both, by providing BI capabilities through the use of tools built upon the familiar Excel and SharePoint applications. As a result, BI is no longer the sole domain of savvy analysts and top-level decision-makers, but rather it is now directly accessible to decision-makers at all levels of the organization.

Microsoft SQL Server is the only major Data Warehouse offering that ships with major components of an integrated BI and Enterprise Information Management platform as a core part of the database license.



Figure 3: SQL Server Report Builder 3.0

## Tegile and Microsoft's Joint Offering Details

**20 TB Certified Data Warehouse**

**40 TB Max User Data**

### Compute Node:

Tegile SM- SM X9DRW-7/iTPF  
CPU: 2x Intel Xeon E5-2670 2.6 GHz  
RAM: 128 GB  
Drive: 2x Intel 200GB SSD

### Storage Configuration:

Tegile Zebi HA2400  
Tegile Zebi ES2400

**FT rated User Data: 20TB**

### Additional Resources

Tegile SQL Server Solutions:

<http://www.tegile.com/solutions/sql>

SQL Server Fast Track Data  
Warehouse

<http://www.microsoft.com/sqlserver/en/us/solutions-technologies/data-warehousing/fast-track.aspx>