



# Tervela® TPE Persistence Engine™

## TPE-1000

### Market Drivers

Messaging systems are the foundational components of the world's most demanding financial services and data-intensive organizations. These firms must distribute and process dramatically increasing amounts of time-sensitive information in order to satisfy rigorous customer requirements while ensuring the profitability and competitive advantage of their business.

Traditional messaging systems, message-oriented middleware and storage are ill-equipped to address the contemporary demands for high-performance, low-latency, scalability and resiliency. Ever-increasing system failures, delayed information or lost data render firms behind the market—or even worse—out of the market. All this is exacerbated by increasing operational costs and complexity, along with an escalating data center footprint.

Tervela invented the Message Network™—an ultra-low latency infrastructure designed to solve market volume, volatility and visibility challenges. to enable investment banks, hedge funds, exchanges and

other data-intensive organizations to deliver consistent, outstanding and predictable performance—even in the most severe market conditions.

These messaging infrastructure capabilities, however, may not be sufficient because additional requirements drive the need to store—or persist—message traffic for a specific period of time. The Tervela TPE Persistence Engine is an optimized message storage and retrieval system designed to address the following requirements:

- Regulatory and audit challenges such as Regulation National Market System (Reg NMS) and the Markets in Financial Instruments Directive (MiFID) to store data
- Buffering of messages to support slow consumers and multiple messaging qualities of service
- Replay of messaging traffic to support market simulations, data mining, algorithm state debugging and automated scenario building
- Business continuity when infrastructure service levels are compromised

## HIGHLIGHTS

***Seamless integration with Tervela's high-performance TMX Message Switch™ and TPM Provisioning & Management System™***

***500,000 message-per-second write performance with concurrent replay***

***Ability to store several days of critical messaging information***

***Built-in redundancy to ensure high availability***

***Rich message-oriented playback options***



## Manageability

As an optimized message storage and retrieval system, the Tervela TPE Persistence Engine addresses the diverse and demanding requirements for message storage—even under strenuous and volatile market conditions. Managed through the Tervela TPM Provisioning & Management System, the TPE is easily configured to store a wide range of specified topics over varying publishing volume levels. Once configured, these topics are automatically recorded and available for immediate playback. The TPE also supports concurrent archival and playback, an essential qualification for performance continuity.

## Performance and Capacity

Under continuous conditions of at least 500,000 messages per second and simultaneous replay, the TPE can store several days of critical messaging information, leaving ample time for subsequent processing and archival. Multiple TPE persistence engines can be aggregated to provide additional storage if necessary. Through a high-performance Gigabit Ethernet or InfiniBand connection, it works concurrently with the Tervela TMX Message Switch to ensure publishers and subscribers always have seamless access to persisted messaging information.

## Flexibility

Because the requirements for message persistence are so rigorous, traditional database technology is not able to satisfy archival and performance demands. As such, the TPE is an optimized message storage and retrieval system designed exclusively for messaging data. In addition to high-performance storage, TPE provides a rich set of message-oriented playback options: topic string (itemized or wildcard); delimited time; unique message sequence (itemized or ranged); and message source (itemized or wildcard).

## High Availability

With messaging systems serving as the foundation for mission-critical applications, the TPE is engineered for high performance, resilience and availability. Its storage subsystem supports RAID, which allows the system to continue operating seamlessly in the event of drive failure. The TPE contains four hot-swappable power supplies in an N+1 configuration. An additional TPE can also be added to ensure fail-proof redundancy.

## Key Advantages

- Exceeds high-performance message storage requirements
- Outperforms traditional database and storage systems
- Seamlessly integrates data acquisition with real-time message flows
- Centralizes messaging archival and retrieval
- Ensures high availability with built-in redundancy
- Dramatically reduces message storage TCO

## Technical Specifications

### **Physical Dimensions**

5U: 8.75" (223 mm) h x 17.25" (438 mm) w x 26.5" (673 mm) d  
120 lbs. (54.4 kg)

### **Power Requirements**

100-230V; 47-63Hz; 1450W; 4947 BTU/hr

### **Operating Environment**

Airflow: Front to Back

Operating: 41° to 95° F (5° to 35° C)

Storage: -40° to 158° F (-40° to 70° C) Non-Condensing

### **Interfaces**

2 DDR InfiniBand HCA

4 Gigabit Ethernet

2 Gigabit Ethernet (Management)

1 DB9 Serial Console Port

### **Storage**

13 500GB SATA II Hot Swappable, Front Access

6.5TB Data Storage

## Contact Tervela

Tervela offers comprehensive solutions and a wide range of service and support programs to ensure customers exceed business performance objectives. Bring a new level of service and performance to your organization. Call +1 646.586.4200, visit [www.tervela.com](http://www.tervela.com) or email [info@tervela.com](mailto:info@tervela.com) today.