# SeaView™ MDS Latency Measurement

**SeaNet Technologies** INCORPORATED

## Measuring Latency for Wall Street/Capital Markets Trading Applications

## Solution Overview

SeaView Latency Measurement solution delivers the ability to measure, monitor, and analyze the key metrics of actual market data transactions in real-time. SeaNet is the first company to actually deliver on the business requirement to understand the root causes of performance problems with mission-critical trade plant applications.

Many companies have promised over the years to deliver on this requirement but SeaView Latency Measurement separates from all others by delivering granular performance metrics for all application users, all the time, and making it possible for the first time to visualize these performance details within the context of the actual business – to the ticker symbol.

The SeaView solution suite has three components: SeaView/RTM™ which collects all transaction data, SeaView/PDB™ which assembles all transaction analysis into a historical repository for detailed historical analysis and, SeaView/VAC™ which makes detailed visualization and multi-dimensional analysis possible on both the real-time monitoring of RTM or the historical data-store of PDM. Working in concert, these three pillars of the SeaView Latency Measurement suite provide Wall Street trade desks with unprecedented Market Data performance details.

SeaView successfully bridges the divide between real and perceived end-user response time with multi-dimensional mining of all granular data. By using the SeaView Latency Measurement Suite, it is now technically and economically feasible to monitor all transactions on all servers, for all users that demand optimum performance of mission critical applications.

## SeaNet's Unique Capabilities

- ### Granular Performance Metrics
SeaNet is unique in our ability to provide granular measurements for the performance data collected. Data granularity in micro-seconds or higher is available. Round-trip as well as one-way latency is also provided.

- ### See All the Data
There are two kinds of performance monitoring solutions in the market today – the first type does a detailed analysis but only on a small sample/trace of data. The second type performs a superficial monitoring of all data, all the time. SeaNet is the first company to combine detailed monitoring and analysis with the "always on" monitoring of 24X7 packet capture.

- ### Business Context
SeaNet is unique in the ability to see deeper than the network layer data, into the business context and the business "units of work" that indicate the real usage behavior of the end user. By providing this business context with the granular performance data, SeaNet is the first company to provide a "bridge" between the operations teams that monitor performance and the application support teams that strive to provide business value with enterprise applications

- ### RapidAdaptation™
SeaNet adds to its unique business context visibility by delivering a *RapidAdaptation™* capability allowing you to achieve meaningful results with no long development process. This unique feature makes it possible to *really understand* your application ………… *Right Away*!
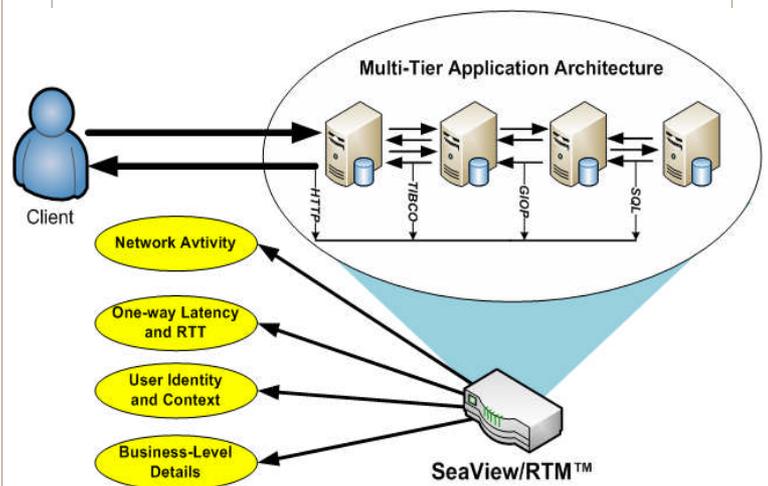


**Figure 1: Application Business Context**

## SeaView Solution Highlights

- Centrally deployed passive probe installed as an appliance.

- Agent-less solution allows rapid deployment and requires minimal configuration.

- Actual—not synthetic—network and application performance statistics are captured and analyzed in real-time.

- Continuous auto-discovery of application topology.

- End-to-end measurements for all trading applications, including TCP and UDP from all users.

- Comprehensive alerts and alarms for all types of performance exceptions regardless of the granularity.

- "Mutli-tier Message Stitching" for end to end measurement and reporting.

- Multi-dimensional Visualization of node and transaction performance metrics.

- Customized reporting of real-time and historical performance data.

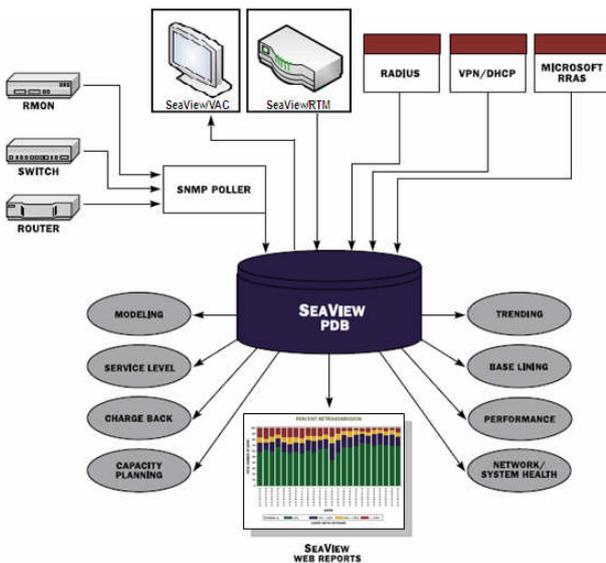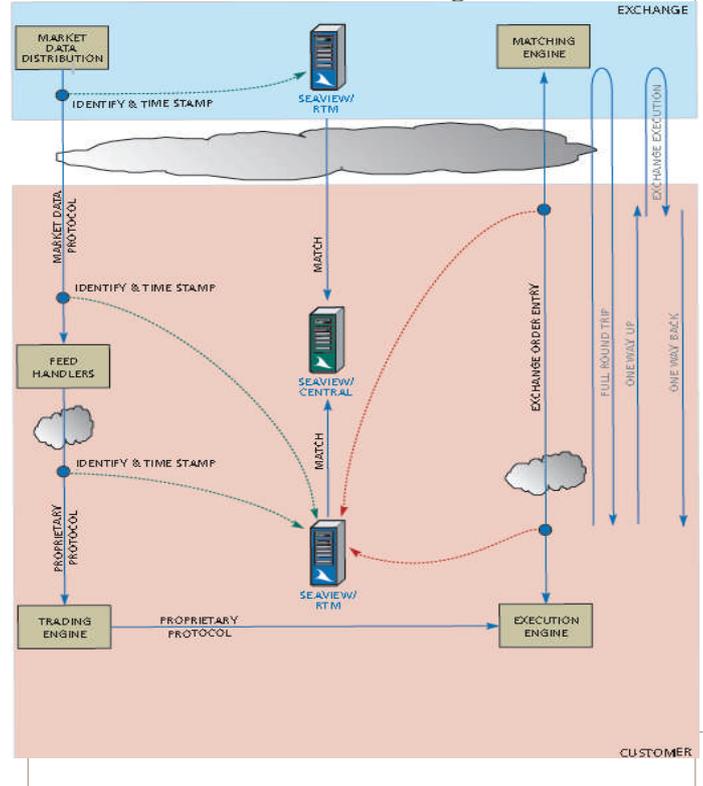- Centralized administration through the SeaView Console.

## Market Data Flow Diagram



## SeaView/VAC™ Screen Shot



## SeaView/PDB™ Deployment and Interfaces



**Figure 2: SeaView/PDB Deployment**
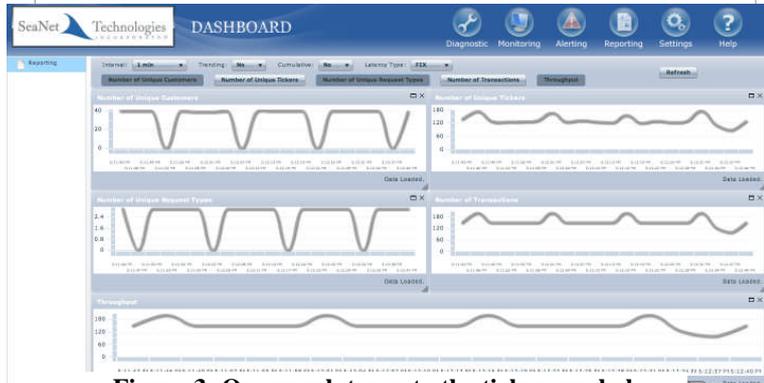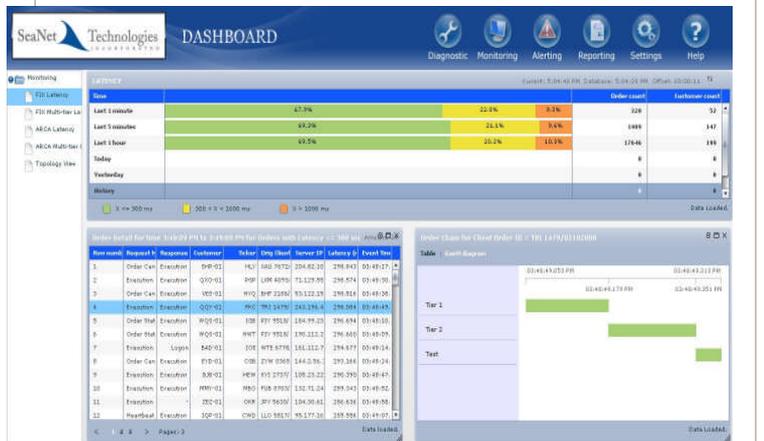


**Figure 3: One way latency to the ticker symbol**

# SeaView Component Details:

## SeaView/RTM <sup>tm</sup>
## Response-Time Monitor

- Micro-second granularity of all Market Data
  - Network round trip time
  - One-Way Latency
  - Server response time
  - Client response time
  - Server data transfer time
  - Packet and byte Retransmissions
  - Retransmission delays
  - TCP session statistics
  - Session byte and packet counts

- Continuous auto discovery of application topology

- HTTP, TCP, UDP  transactions

- FIX, NYSE, OPRA, LSE as well as custom protocols

- SQL transactions

- Real-time stateful engine

- Highly scalable

- Merged Analysis from multiple RTM Probes

- Configurable alerting on any data element on the session/application or client/server level

## SeaView/VAC<sup>tm</sup>
## Visualization and Analysis Console

- N-dimensional OLAP Cube Analysis system

- Visualization and Analysis of Real Time and Historical Data

- Dynamic, user-directed monitoring perspectives – server, client, network, etc.

- Monitor of Custom attribute or transaction element of a customized application

- Value-added alarms comprised of multiple monitored elements within the "analysis cube"

- Enhanced productivity user interface tools including "column sort" and "drag-and-drop"

- Visual alarms of thresholds and critical underlying performance problems

- Understand the transactions that are underneath your business transactions and other units of work

## SeaView/PDB<sup>tm</sup>
## Performance Database

- Data repository and correlation engine optimized for the processing of highly granular data
- Complete published data dictionary
- Import of external measurement sources
- Mapped data are merged with network metadata
  - Dynamic IP with real address
  - User ID correlated with authentication server
- Online Analytical Processing (OLAP) analysis
  - millions of rows
  - varied time intervals
  - near real-time
- Distributions and standard deviations instead of just relying on averages
- Highly flexible reporting allows interaction with complex multidimensional data to produce tabular and graphical reports in near real-time
- Numerous instructional reports that are easily customized by the user

### About SeaNet Technologies

SeaNet Technologies is one of today's leading providers of application performance  monitoring  solutions for high-performance custom applications.  SeaNet delivers a comprehensive toolset to support the measurement and analysis of the end to end response times with business transaction context. SeaNet uniquely empowers large enterprises to bridge the divide between the technical and business units responsible for delivering high network and application quality of service levels. Our products have been successfully deployed in multiple Fortune 100 enterprise environments.

SeaNet Technologies is headquartered in New York City. For more information, please contact the company at 718-544-1778 or visit the website at www.seanet-tech.com.

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**SeaNet Latency Measurement Solution**