

# RTI Data Distribution Service with Voltaire Messaging Accelerator

## Extreme InfiniBand Performance

### BENEFITS

- **Significantly higher performance than Gigabit Ethernet**
  - Latency up to 8x faster
  - Throughput up to 6x higher
  - Much more scalable as message rates increase
- **Reliable multicast for high fan-out**
- **No changes required to application code**
- **Easy co-existence and migration from other networking technologies**
- **Eliminates need for specialized messaging appliance**

Integration between RTI Data Distribution Service and Voltaire® Messaging Accelerator™ (VMA) provides a high performance and highly scalable messaging infrastructure over InfiniBand networks. With support for reliable multicast, the combination is ideal for broad distribution of streaming data such as market and sensor data.

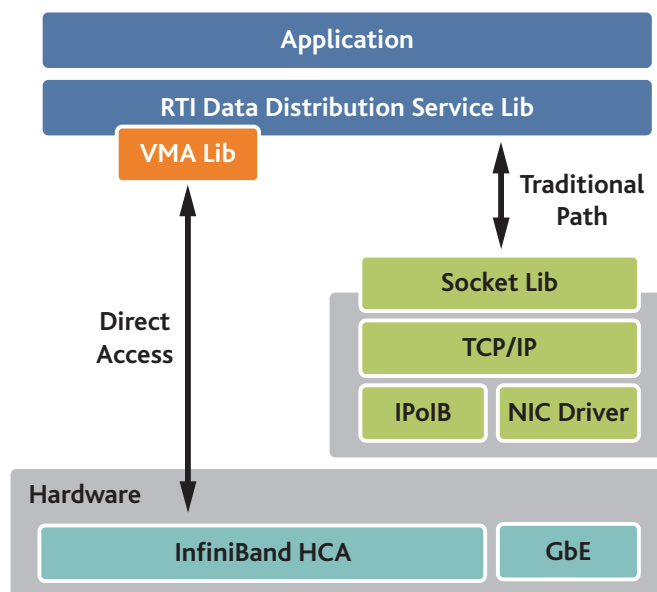
When used with RTI Data Distribution Service, VMA delivers latency 2x to 8x faster than Gigabit Ethernet (GbE) and half that of IP over InfiniBand (IPoIB). Throughput is up to 6x higher than GbE and up to 33% higher than IPoIB.

RTI Data Distribution Service and VMA provide an easy migration path from other networking technologies. No software changes are required. VMA is a dynamically-linked user-space Linux library. It intercepts multicast traffic and passes it directly to an InfiniBand host channel adapter (HCA).

The kernel and IP stack are bypassed, minimizing context switches, buffer copies and interrupts for extremely low latency with low overhead.

RTI Data Distribution Service further facilitates migration to InfiniBand and co-existence of multiple networking technologies. Applications can seamlessly publish and subscribe over multiple network interfaces concurrently, for example Ethernet and InfiniBand.

Compared to a specialized messaging appliance, RTI Data Distribution Service in combination with VMA provides much higher performance at a much lower cost—leveraging pure software messaging and general-purpose commodity hardware.



*With RTI Data Distribution Service and VMA, multicast messages sent over InfiniBand bypass the operating system and network stack for much lower latency and overhead.*

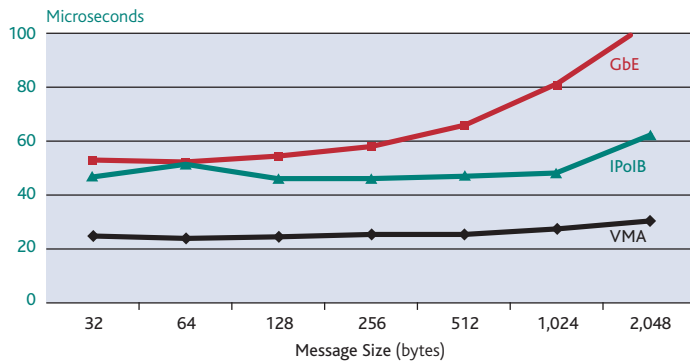
### ABOUT US

**Voltaire** is a leading provider of scale-out computing fabrics for data centers, high performance computing and cloud environments. Voltaire's family of Grid Director switches, in combination with the company's advanced management software, vastly improves the performance of mission-critical applications. Voltaire Grid Director switches address the growing size and complexity of clusters by providing high interconnect bandwidth, advanced carrier-class management, and unlimited scalability. [www.voltaire.com](http://www.voltaire.com)

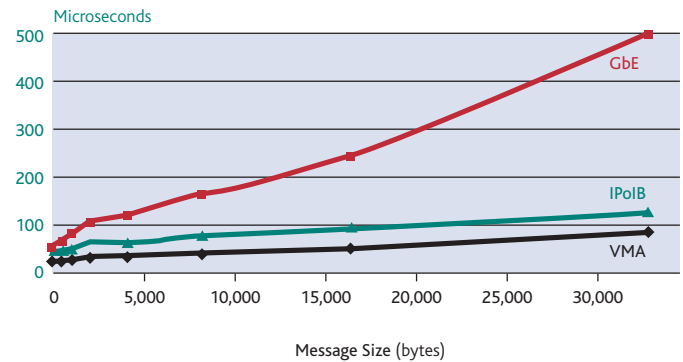
**Real-Time Innovations (RTI)** is a leading provider of high-performance messaging and integration middleware for distributed real-time applications. RTI is the leader in the rapidly-growing market for Data Distribution Service (DDS) compliant infrastructure. A broad range of industries leverage the company's software and design expertise, including defense, intelligence, simulation, industrial control, power generation, transportation, finance, medical and communications. [www.rti.com](http://www.rti.com)



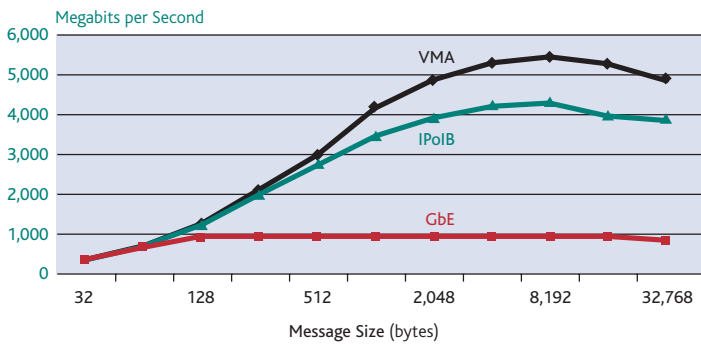
**Average Latency 3x Lower with Small Messages**



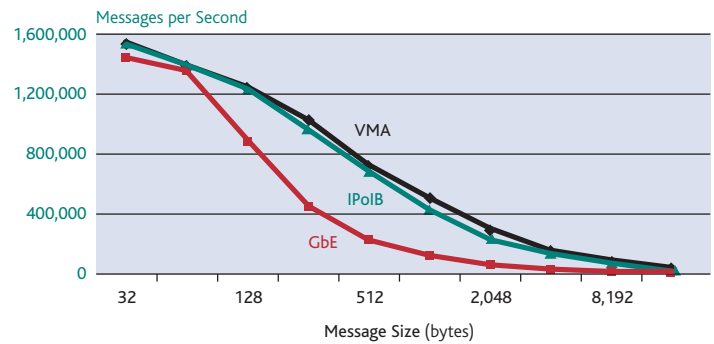
**Average Latency 8X Lower with Large Messages**



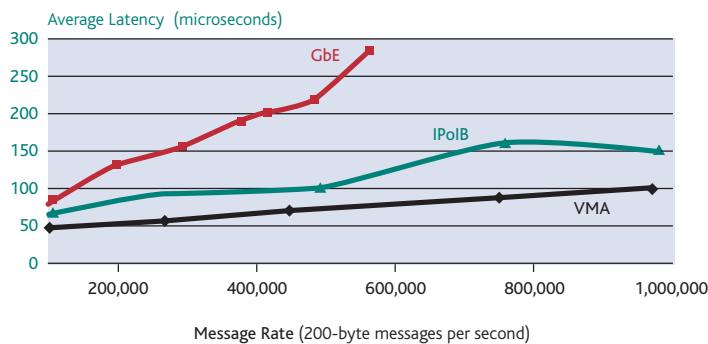
**Throughput – Bandwidth 6X Higher**



**Throughput – Message Rate 6X Higher**



**Latency Under Load 3.5X Lower with 200-Byte Messages**



**Benchmark configuration:**

- Reliable multicast messaging with ordered delivery
- RTI Data Distribution Service 4.4d
- VMA 3.0.2
- OFED 1.4-rc2
- CentOS 5 32-bit
- Intel Core 2 Duo E6600 @ 2.4 GHz
- Voltaire Grid Director 9024 InfiniBand switch
- DDR InfiniBand HCA
- D-Link DGS-3324SRi Ethernet switch
- Intel PRO/1000 Ethernet NIC

**US HEADQUARTERS**

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