



fast. open. flexible.

Trading room hardware is undergoing a revolution. Processor innovation has shifted from faster clock speeds to parallelism. Multiple cores and high-bandwidth memory interconnects now determine the capabilities of high end servers. While servers are gaining more processors, high-speed, low-latency transports such as 10G Ethernet, InfiniBand and RDMA are redefining the ways in which data can move across trading infrastructure.

This hardware revolution is fundamentally changing what is possible on the trading room floor. Limiting the potential of these new innovations is the lack of the open standards needed to integrate across market data systems. Performance has come at a price: dependence on a vendor's proprietary technology, stifling innovation and increasing costs.

A New Way Forward

We have a better way. Rai Market Data Fabric™ is bringing the revolution to the world of high performance market data. With support for open standards, tools for rapid application development, a new high speed RMDA transport, and extensive support for existing market data systems, the Rai Market Data Fabric delivers on the potential of today's technology applied to market data systems.

The Rai Market Data Fabric extends other efforts at opening up market data by providing the key missing element: a transport independent wire format and protocol specification for high performance market data. By separating market session semantics from transport, and data representation, and including support for multiple transports and connection services, the Rai Market Data Fabric allows not only for easy integration with existing market data systems, but an economical and open path for future market data systems.

True Integration

The Rai Market Data Fabric protects your investment in existing TIB, RMDS or Wombat infrastructure by providing transparent and seamless bi-directional bridging. Supported transports and protocols include SASS, SASS2, SASS3, QForms, TibMsg, RVMsg, MarketFeed, Reuters SSL, Wombat MAMA, XML, TIBCO/Rendezvous, 29West/LBM, ciServer, PGM, and TCP.

Open Protocol

The Rai Market Data Protocol is a transport-independent market data protocol designed specifically for the needs of high performance market data systems.

The Rai Market Data Protocol is the result of Rai Technology's years of experience in providing true cross-vendor and cross-transport integration capability. Rai uses this protocol over existing open transports (PGM, TCP, OpenFabrics), as well as over proprietary middleware such as 29West LBM™ and TIBCO Rendezvous™.

High Speed Transport

Rai's high speed RDMA transport on top of IB or 10G Ethernet connects fabric nodes with an ultra-fast, low latency transport. The implementation of the transport within the fabric hides the complexity of using RDMA while retaining all of the performance capabilities.

Within a server, high speed DMA, shared memory, or UNIX socket-based transports allow applications to access market data at backplane speeds yet still be able to be deployed elsewhere through simple configuration changes.

Market Data Application Server

Loadable code modules running within a Rai Cache™ process gain the services of the Cache, without the need for data to transit across the network or even outside of the Rai Cache process.

Rai Cache serves as a low latency, high performance container providing market data services to the user's application. By compressing data paths, reducing hardware expenses and providing a framework for rapid application development, loadable modules built with the Rai API reduce development time and expense while at the same time reducing application latency. Loadable modules create an easy technology migration path by abstracting lower level services such as network transports.

Rai Caches and applications deployed as loadable modules within the Rai Cache, such as feed handlers and calculations servers, use the RDMA transport across the Rai Market Data Fabric.

Rai Cache™

The Rai Cache™ can be deployed to provide fabric services including:

- Last value caching and subscription management with TIC/RTIC and rvcache
- Transport and protocol bridging and transformation
- Conflation, providing only as much data as downstream clients or a slower network can process
- Cascading to other downstream Caches or to remote locations using TCP
- Delayed data
- Client developed hosted within the Cache using loadable code modules

It's Not Us, It's You

For years market data technology has required decisions about what vendor's proprietary system will be used. Different vendors have provided solutions optimized for different applications, resulting in data silos, redundant market data expenses and complexity. Vendor obsolescence has required massive and often unnecessary spend on infrastructure.

The Rai Market Data Fabric opens up the world of financial market data to the innovation and cost savings demanded in today's market. By embracing and extending existing market data systems using Rai Technology's proven track record of integration, you are in control of your market data infrastructure.

To learn more about how the Rai Market Data Fabric is changing the world of market data, visit www.raitechnology.com

