



RED HAT ENTERPRISE MRG WITH MELLANOX CONNECTX-2 10GIGE NIC DELIVER DETERMINISM IN PERFORMANCE AND PROFITABILITY

ULTRA-LOW PLATFORM AND NETWORK LATENCY FEATURES COMBINE
FOR COMPETITIVE ADVANTAGE AND REGULATORY COMPLIANCE IN LARGE
AND GROWING INDUSTRY VERTICALS



Red Hat Enterprise MRG with Mellanox ConnectX-2 10GigE NIC
Deliver Determinism in Performance and Profitability

BUSINESS CHALLENGES

Financial services, telecommunications, healthcare, cloud computing, and other industry sectors are placing increasingly higher demands on their datacenters. Be it the applicability of the adage “time is money,” or the need to be able to process large amounts of data while maintaining or reducing transaction times to meet regulation requirements for service level agreements with users, the underlying datacenter infrastructure built the traditional way is stretched trying to deliver consistent response times. In these industries, deterministic response times equate to competitive edge. Red Hat® Enterprise MRG (Messaging, realtime, and grid), Red Hat Enterprise Linux® 6 and Mellanox ConnectX-2 10GigE network adapters with RDMA over Ethernet (RoE) support is a combined ready-to-deploy solution that delivers on that promise.

RED HAT ENTERPRISE MRG

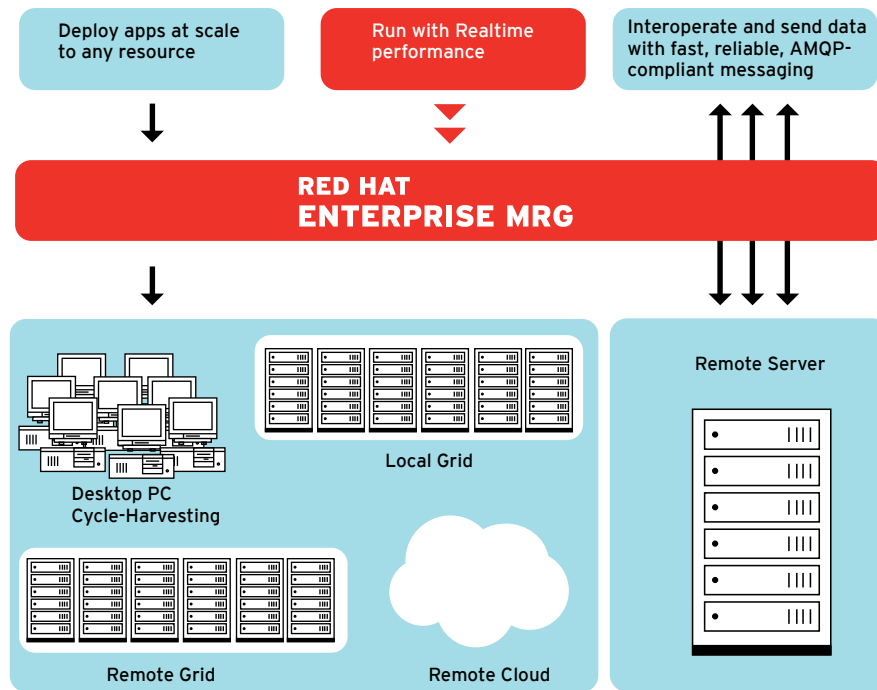
Red Hat Enterprise MRG enables customers to reach dramatically new performance and functional requirements in distributed computing through features like:

- Messaging: High-performance, reliable AMQP-compliant enterprise messaging
- Realtime: Integrated Realtime Linux optimizations for deterministic, low-latency messaging, realtime grid scheduling of short tasks, and predictable enterprise workloads
- Grid: Comprehensive grid computing capabilities, with the ability to rapidly schedule workloads in cloud infrastructure and virtualized environments across a local or remote grid, and harvest idle capacity from idle workstations
- High Performance Computing (HPC): Parallel computing capabilities for HPC.
- Support: Full, native, multi-language support, including: Java, JMS, .NET, C++, Ruby, and Python
- Management: Unified management and configuration tools

MRG delivers the highest performance for a variety of distributed computing tasks. MRG messaging enables durable messaging throughput that is orders of magnitude better than previously possible. MRG realtime provides deterministic low-latency for a variety of tasks. MRG grid provides high throughput computing (HTC) capabilities for handling thousands of jobs.



FIGURE 1: RED HAT ENTERPRISE MRG



MELLANOX CONNECTX EN WITH ROE (RDMA OVER ETHERNET)

Mellanox ConnectX-2 EN NICs support the IEEE DCB standards for lossless ethernet over 10GigE and 40GigE data rates. The ConnectX-2 EN with RoE NIC solution delivers the lowest application-to-application level latency utilizing the RoCE industry standard specification. It supports the entire breadth of the OpenFabrics Enterprise Distribution (OFED) API. ConnectX-2 EN with RoE incorporates a purpose-built, most-deployed, field-proven, and scalable RDMA transport technology to deliver 1.3 microseconds application level latency, bringing InfiniBand-like performance and clustering efficiency to lossless ethernet fabrics. The use of a simple, purpose-built transport in the hardware results in cost and power economies as well. ConnectX-2 EN with RoE requires a lossless ethernet fabric to deliver such low latencies in a reliable and deterministic way, ensuring demanding datacenter applications are able to scale and perform consistently in the face of massive growth in data and fabric usage spikes. Because it supports the standard OFED API, applications that utilize that API today can now seamlessly run over ConnectX-2 EN with RoE in UCS servers. This makes the benefits of this product readily available to end users, independent software vendors, appliance vendors, and original equipment manufacturers.



FIGURE 2: MELLANOX CONNECTX-2 EN WITH ROE NICS (DUAL SFP+ CARD SHOWN)



OPTIMIZED LATENCY AND MESSAGING PERFORMANCE

Red Hat and Mellanox are partnering to deliver optimized latency and performance for customers deploying Red Hat Enterprise MRG Messaging with Mellanox ConnectX-2 EN NICs. Red Hat Enterprise MRG already includes native RDMA drivers for achieving the best performance on Infiniband networks. Red Hat will provide similar drivers for Mellanox's ConnectX-2 NICs in its next update to MRG, enabling customers deploying ConnectX2 to take advantage of the RDMA capabilities in these cards for extremely low latency and high performance.

Furthermore, Red Hat is working with Mellanox to support these NICs via optimized drivers in the upcoming Red Hat Enterprise Linux 6 and MRG Realtime for Red Hat Enterprise Linux 6 releases.

SUMMARY

Demanding datacenter applications require network infrastructures that can deliver reliable and deterministic performance. High-performance, low-latency networking solutions – combined with low-latency and deterministic performance-oriented software platforms – help deliver mission-critical application performance in the face of growing data and transaction volumes, and are able to handle sudden usage spikes without compromising performance. Red Hat Enterprise MRG with Mellanox ConnectX-2 EN with RoE delivers the performance, reliability, and guaranteed application response times demanded by today's datacenters.

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