



Benefits

MAXIMIZE THE NETWORK

- Maximize datacenter connectivity ROI through: Density, Scale, Performance

OPEN THE NETWORK

- Deploy new technologies that increase functionality, improves ROI, and leverages your current investment
- Freedom and Flexibility from vendor lock-in

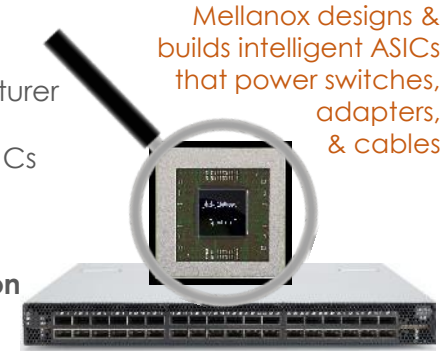
Unique Capability

MELLANOX: THE DIFFERENCE IS IN THE CHIP

- Founded as a state-of-the-art silicon chip (ASIC) manufacturer
- Intelligence built directly into Mellanox chip technology
- Other switch vendors are forced to source expensive ASICs from third parties such as Broadcom adding cost
- Mellanox uses own chip & passes savings to customers

SwitchX.2 6th Generation
10/40/56GbE & 40/56 Gb IB

ConnectX.3 5th Generation
10/40/56GbE



Key Differentiators



DENSITY & SCALE

- RDSv3 over RoCE improves Oracle RAC database which benefits from the low overhead, low latency, high bandwidth, and highly reliable characteristics of the RDSv3 protocol and the 40GbE RoCE adapter



VALUE & FUTURE PROOF

- AIX 7.2 support for RDSv3 over RoCE and the certification of it for use with Oracle RAC 12cR1 provides a valuable new option for customers with capable Ethernet infrastructure who can take advantage of the increased performance of the RDSv3 protocol



PERFORMANCE

- RDSv3 is a protocol that customers can use with Oracle RAC to optimize performance
- RDSv3 is now available to Oracle RAC customers using RoCE / 40GbE

- IBM FC# EC3A/EC4B adapter is optimized for enterprise data centers, transaction databases, virtualization, and storage
- The adapter improves network performance by increasing available bandwidth to the processor and by providing enhanced performance to the applications by offloading to the adapter the movement of data between the nodes in the cluster

Sales Opportunity

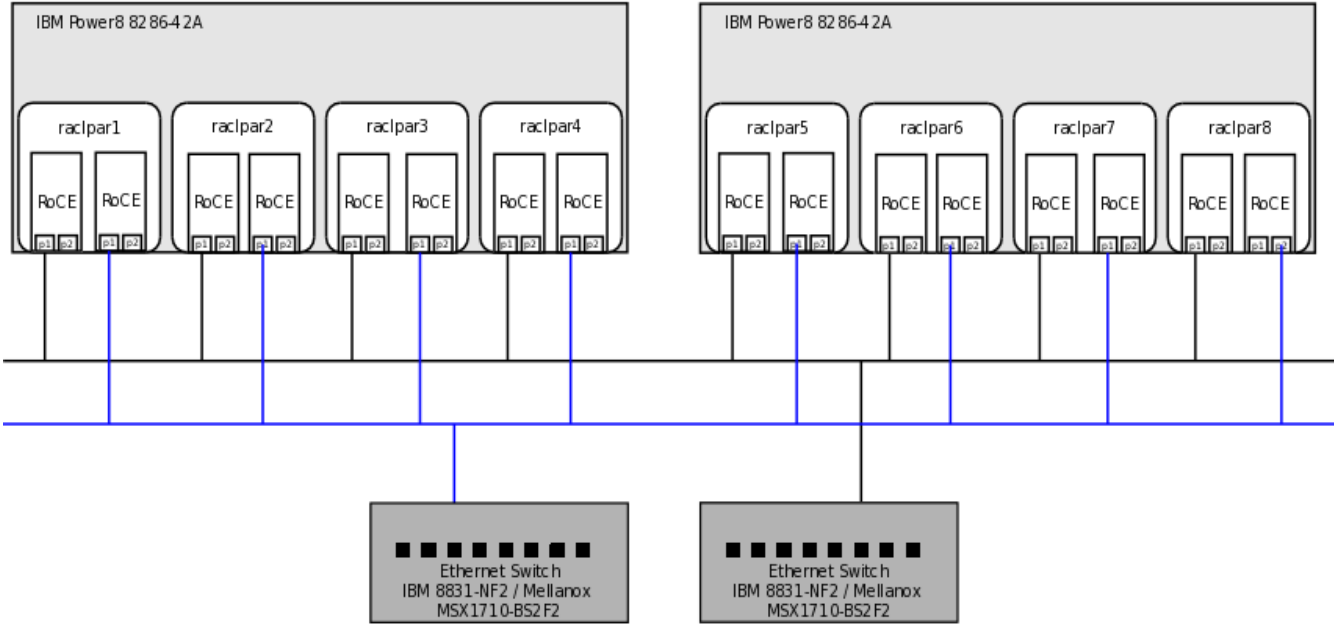
- Existing Oracle RDSv3 customers running on POWER or x86 servers who need to scale their network for growth and/or scale from 10GbE network technology they have deployed today to a higher performance network environment
- Customers who do not want to make the investment in a InfiniBand infrastructure or skills
- POWER 6 or 7 customers who are looking for a hardware refresh and would benefit from an increase of scale of their network infrastructure and the increased performance of their database
- x86 customers who have exhausted the scale out capabilities of the x86 platform and need a higher performance network and server environment

Company Background

- Established 1999 * NASDAQ: MLNX
- **End-to-end Ethernet Connectivity Solutions** – Adapters, Switches, Cables, Software, Support
- World-class, non-outsourced technical support
- Trusted as switch manufacturer for every major server OEM
- Proven Technology and Future Roadmap

IBM Mellanox Solution for Oracle RAC over 40GbE RoCE

Network Configuration for RAC Cluster Interconnect



RoCE Adapter: IBM FC EC3A/EC4B, (LP)PCIE3 2 PORT 40GbE NIC ROCE / Mellanox 40GbE RoCE adapter MCX314A-BCBT


Choice of Cabling 40GbE / FDR Cabling

Length	Description	FC
0.5m	40GbE / FDR Copper Cable QSFP	EB40
1m	40GbE / FDR Copper Cable QSFP	EB41
2m	40GbE / FDR Copper Cable QSFP	EB42
3m	40GbE / FDR Optical Cable QSFP	EB4A
5m	40GbE / FDR Optical Cable QSFP	EB4B
10m	40GbE / FDR Optical Cable QSFP	EB4C
15m	40GbE / FDR Optical Cable QSFP	EB4D
20m	40GbE / FDR Optical Cable QSFP	EB4E
30m	40GbE / FDR Optical Cable QSFP	EB4F
50m	40GbE / FDR Optical Cable QSFP	EB4G

IBM Mellanox Switch Portfolio

SX Series:

Based on **SwitchX-2** ASIC, all versions are **1/10/40/56** out of box, fully licensed. **Simple speed negotiation upon cable insertion**, including a patented (x1) 40GbE QSFP to (x4) 10GbE SFP+ breakout cable.

SX1710 – 8831-NF2 	40GbE Switch for ToR / Aggregation	36x40GbE	1U	x86	MLNX-OS	SwitchX-2
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IBM Mellanox Adapter Portfolio

40GbE 	HP Dual Port 40GbE QSFP	EC3B	x8	ConnectX-3
	LP Dual Port 40GbE QSFP	EC3A		

Support Statement

Oracle Real Application Cluster (RAC) is certified to use the RDSv3 or UDP Protocols is supported on AIX 7.2 Power (64-bit) with Oracle 12c (12.1.0.2) using RoCE Adapters.

Use of RDSv3 over these adapters can allow you to achieve lower latency in RAC private communications without the need to add different communications adapters and switches to your network. This reduces the complexity of introducing RDSv3 to RAC deployments.

AIX 7.2 added support for RDSv3 over RoCE which has been certified for use with Oracle RAC 12cR1. Available as IBM FC# EC3A/EC4B, (LP)PCIE3 2 PORT 40GbE NIC ROCE, on POWER8 servers the (Mellanox 40GbE RoCE adapter MCX314A-BCBT) is supported for use with RDS with AIX 7.2 and was used along with the IBM 8831-NF2, (Mellanox MSX1710-BS2F2) Ethernet Switch during the certification testing. In addition, adaptor can be used for TCP/UDP with AIX 6.1 and 7.1.

<http://www.oracle.com/technetwork/database/clustering/tech-generic-unix-new-166583.html>