



Emulex and Oracle Deliver High Performance Virtualization in Converged Network

Strong partnership delivers converged networking benefits to enterprise data centers

At a Glance

IT departments are implementing Oracle® Enterprise Linux (OEL) and Oracle VM server virtualization to increase operating efficiencies and improve resource utilization. Many are turning to the Emulex OneConnect™ Universal Converged Network Adapter (UCNA) for network connectivity. The Emulex OneConnect platform is based on a single-chip 10Gb Ethernet (10GbE) architecture that supports high performance offloads for 10GbE, iSCSI, TCP Offload Engine (TOE) and Fibre Channel over Ethernet (FCoE), delivering improved performance for networking and data center virtualization.

Products

- Emulex OneConnect UCNA Platform (OCe10000 and OCe11000)
- Emulex OneCommand™ Manager 5.0 (formerly HBAnyware®)
- Oracle Enterprise Linux
- Oracle VM

Solution Benefits

- Consolidate the data center to a 10GbE infrastructure with offload support for 10GbE, TOE, FCoE and iSCSI
- Protect investments in existing server, network, storage and facilities assets
- Decrease CapEx and OpEx by simplifying the data center infrastructure
- Increase business agility with easier, faster and pervasive data center virtualization and grid computing
- Enhance business resilience and performance by offloading CPU resources for greater operational efficiency

Oracle Emulex Partnership

Oracle Enterprise Linux and Oracle VM have supported Emulex adapters since day one. Emulex is part of Oracle's Unbreakable Linux Program and participates in Oracle's Validated Configuration Program to offer best practices for Linux deployments for our joint customers.

Collaborating on new technology initiatives, Oracle and Emulex are working together on a number of joint projects including the Data Integrity Initiative, N_Port ID Virtualization (NPIV) management in an Oracle VM environment for Linux enterprises and joint collaboration for a major data warehousing project with Oracle's Executive Technology Centers. Listed in Oracle's Solutions catalog, Emulex, through its strong partnership with Oracle, ensures that Linux end-users have a fully supported, robust Fibre Channel SAN and converged network.

Evolution to Emulex Converged Networks

Data centers have typically deployed dedicated infrastructures for networking and storage, with each network requiring a separate set of adapters, switches and cables. To reduce costs, blade servers and server virtualization technologies are implemented which result in increasing demands for network bandwidth per host. In many cases, six or more 1GbE adapters are used to meet requirements for virtual machines, dynamic migration and management. With the growth of video, voice and graphical content, 1GbE networks are running out of bandwidth.

In many data centers, servers require multiple 1GbE adapters which lead to additional switch ports, cabling and management time. Added to this is the growing use of iSCSI to support storage traffic over Ethernet, resulting in another level of complexity and bandwidth usage. Applications, databases and virtualized servers that require high I/O rates are severely limited with 1GbE connections and CPU resources are absorbed when iSCSI software initiators are used with standard NIC adapters.

High-density blade deployments add to the difficulty with an increasingly complex collection of connections and cables per square foot, all contributing to high capital expense (CapEx) and operational expense (OpEx). These costs can be reduced by deploying a converged network with a single set of resources that can be dynamically provisioned for networking and storage in response to changing business requirements. Emulex OneConnect UCNA platform and Oracle technologies combine to deliver an unmatched high performance data center solution that lowers CapEx and OpEx.



OneConnect™ OneCommand™

Emulex and Oracle Deliver High Performance Virtualization in Converged Network

Oracle VM offers server virtualization technologies that help optimize resource utilization and simplify management for the toughest enterprise data centers, while OEL delivers enterprise-class support for Linux with premier back ports, comprehensive management, cluster software, indemnification, testing and more, all at significantly lower cost. The Emulex OneConnect UCNA platform extends the benefits of Oracle VM and OEL by delivering the following:

- 1 Common platform**—Applicable across all server tiers to enable simplification of server hardware, rapid deployment and migration of applications
- 2 High performance**—Capable of supporting multiple protocol offloads offering high levels of performance and efficiency
- 3 Virtualization support**—Complement server virtualization deployments, provide flexibility and infrastructure agility
- 4 Energy and space efficiency**—Minimal power and data center footprint

Why Emulex for Oracle

Data centers with Oracle VM have long relied on high performance network connectivity from Emulex. With Emulex OneConnect UCNA and OneCommand Manager application, these data centers now can implement a high performance converged networking solution.

Streamline management

OneCommand Manager application provides comprehensive reporting, optimizing and troubleshooting, enabling management of Emulex adapters for servers throughout the network from a single console. With Emulex, IT administrators improve management efficiency for iSCSI, Fibre Channel and FCoE networks, as well as maximizing availability of business critical applications that rely on Oracle.

Improve asset utilization

Emulex 4Gb/s and 8Gb/s host bus adapters (HBAs), FCoE CNAs, OneConnect UCNAs, Oracle drivers and Emulex OneCommand Manager fully support NPIV technology, enabling each HBA or CNA port to register multiple virtual ports (vPorts) identified by a virtual worldwide port name (WWPN) within the fabric. In fact, Emulex OneConnect UCNAs enable IT administrators to create and support six times more NPIV-based vPorts than the nearest competitive solution in Oracle VM environments. With Emulex, organizations can reduce their hardware expenditures.

Increase data center flexibility and availability

Emulex OneCommand Manager's vPort mapping capability enables viewing of VM to vPort associations on a single management pane. With Emulex, IT administrators can improve the speed at which hardware resources can be reallocated within Oracle VM environments, increasing data center flexibility and availability.

Seamless interoperability

Emulex shares a strong development partnership with Oracle, ensuring Emulex and Oracle solutions will work seamlessly together within the data center. As a member of the Oracle PartnerNetwork and one of the first Fibre Channel HBA vendors to support the Oracle Unbreakable Linux Program, Emulex is a leading SAN connectivity provider for Oracle environments and is listed in Oracle's Solutions catalog. As part of Oracle PartnerNetwork, Emulex participates in Oracle's largest event, Oracle OpenWorld. Emulex and Oracle offer many enterprise-class products that provide mission-critical interoperability, comprehensive support and innovation.

CapEx and OpEx savings

Emulex OneConnect UCNAs reduce cabling, hardware, rack space and power consumption costs. When combined with CPU off-load capabilities, fewer servers are required to support data center needs. With Emulex, IT administrators can maximize I/O consolidation with 10GbE ports and leverage existing hardware investments to drive significant savings in capital and operating expenses.

Oracle Grid Computing

IT Managers are looking to "go green" and "save green" by reducing energy and system costs. Grid computing is a green solution that provides the benefits of both a virtualized and clustered infrastructure, allowing resources to be optimally provisioned to meet the needs of users. Costs savings are achieved when resources are allocated on demand, eliminating underutilized and redundant resources. Grid computing works well with lower-cost components like blade servers that are often used for new deployments.

Emulex and Oracle Deliver High Performance Virtualization in Converged Network

The infrastructure grid requires storage resources that can be treated as a single pool and allocated dynamically. When servers use Emulex UCNAs in their converged network, all of the computing resources in the grid have access to storage resources. The benefits of grid computing with Oracle and Emulex are:

- **Product leadership**—The leading Emulex OneConnect UCNA supports the world's #1 database for grid and #1 application server for grid, with full clustering and management
- **Consolidation**—Non-dedicated, pooled IT resources which enable consolidation of hardware and data centers, resulting in lower CapEx and OpEx and greener computing
- **Operational agility**—On-demand provisioning, proactive monitoring and top-down management to rapidly respond to dynamic business requirements, further enhanced with Emulex OneCommand Manager application
- **Predictable performance and scalability**—Clustering and virtualization technologies at all layers of the technology stack, including the converged network adapter layer, for predictable high performance and scalability
- **Continuous availability**—Architecture for maximum availability, quality of service and data protection

Oracle VM

Oracle VM delivers significant benefits to a converged network solution.

- Lower hardware, energy, facility costs, and TCO
- Simplified installation
- Faster software deployment
- More efficient performance
- Enterprise-class support
- Free software
- Linux and Windows support
- Certification of Oracle database, middleware, applications

Summary

Emulex and Oracle together offer a robust converged networking solution, delivering high performance for server virtualization while reducing CapEx and OpEx. The combination of Oracle technologies and Emulex OneConnect UCNAs enables data centers to achieve higher levels of performance and management while managing costs and protecting past investments. Look to Emulex and Oracle to continue to deliver leading edge solutions aimed at meeting the most pressing data center needs.

ORACLE®

EMULEX®

www.emulex.com

World Headquarters 3333 Susan Street, Costa Mesa, CA 92626 +1 714 662 5600
Wokingham, UK +44 (0) 118 977 2929 | **Munich, Germany** +49 (0) 89 97007 177
Paris, France +33 (0) 158 580 022 | **Beijing, China** +86 10 68499547
Tokyo, Japan +81 3 5325 3261 | **Bangalore, India** +91 80 40156789

Connect with Emulex

twitter.com/emulex [friendfeed.com/emulex](https://www.linkedin.com/company/emulex) bit.ly/emulexlinks [bit.ly/emulex](https://www.facebook.com/emulex)

©2011 Emulex, Inc. All rights reserved. This document refers to various companies and products by their trade names. In most, if not all cases, their respective companies claim these designations as trademarks or registered trademarks. This information is provided for reference only. Although this information is believed to be accurate and reliable at the time of publication, Emulex assumes no responsibility for errors or omissions. Emulex reserves the right to make changes or corrections without notice. This report is the property of Emulex and may not be duplicated without permission from the Company.