

# Lenovo Flex System Fabric EN4093R 10Gb Scalable Switch

Ethernet switch designed for your data center



Your IT department faces a number of challenges in preparing for the future. Some of those key areas are around virtualization and reducing cost and complexity, while automating things like VM mobility. At the same time you need technologies that are more tightly integrated, while also providing investment protection for the transition to cloud computing.

The Lenovo Flex System Fabric EN4093R 10Gb Scalable Switch provides unmatched scalability and performance, while also delivering innovations to help address a number of networking concerns today and providing capabilities that will help you prepare for the future.

## Increase Performance

With the growth of virtualization and the evolution of cloud, many of today's applications require low latency and high bandwidth performance. To enable integration into the higher bandwidth networks supporting cloud services, the industry-leading EN4093R is the first blade switch to feature 40Gb external ports. Additionally, the Flex System Fabric EN4093R is the first blade switch to support submicrosecond latency, while also delivering full line-rate performance of up to 1.28Tbps, making it ideal for managing dynamic workloads across your network.

## Scalability, Flexibility

The EN4093R provides extreme scalability that can help reduce cost, complexity and enable rapid deployment today or in the future. Pay-as-you-grow scalability allows clients to easily and cost effectively enable additional ports through the purchase of a simple software license key. Additionally, the new flexible port-mapping feature offers unmatched configuration customization by allowing any active port on the EN4093R to be designated as either an internal or external port. This port mobility capability enables I/O connectivity optimization within the Flex System chassis. With this capability, a client can deploy a pair of EN4093R modules to support an application requiring six 10Gb server ports. Supporting this application would require others to deploy up to six Ethernet modules. Consequently, this provides clients with up to 66 percent<sup>†</sup> fewer devices to manage, thereby lowering operational costs and reducing power requirements.

## Simple Connectivity

To provide clients with both flexibility and investment protection as their connectivity needs evolve over time, the Flex System Fabric EN4093R supports multiple operational modes. For clients seeking a simple transparent connection to their existing network but do not require advanced Layer 2 or Layer 3 networking capabilities, the EN4093R may be utilized in easy connect mode. This operational mode often helps avoid tensions between system and network administrators. However, the EN4093R may also be utilized in standard mode for clients who need to take advantage of its feature-rich suite of enterprise-class Layer 2 and Layer 3 capabilities. For those looking for further simplification, the EN4093R stacking feature allows multiple EN4093R switch modules to be managed as one logical switch, thereby reducing deployment time and network management complexity.

For those contemplating the convergence of their data and storage networks, the Flex System Fabric EN4093R supports all the necessary protocols including Data Center Bridging/Converged Enhanced Ethernet (DCB/CEE). This enables the EN4093R to support network convergence with storage networks that use iSCSI, NAS or FCoE.

## Cloud Ready

With the majority of IT organizations implementing virtualization, there has been an increased need to reduce the cost and complexity of their environments. Removing multiple physical I/O ports addresses these requirements. Virtual Fabric provides a way for you to separate a pair of 10Gb ports into virtual NICs (vNIC) to meet those requirements. To help deliver maximum performance per vNIC, plus provide higher availability and security with isolation between vNIC's, the switch leverages

capabilities of its networking operating system. Furthermore, the EN4093R offers benefits of next-generation vNIC—Unified Fabric Port (UFP). UFP is an advanced, cost-effective solution that provides a flexible way for clients to allocate, reallocate and adjust bandwidth to meet their ever-changing data center requirements.

In addition, delivering advanced virtualization awareness helps simplify management and automates VM mobility by making the network VM-aware—for all major hypervisors—with VMready. With Switch Partition (SPAR), clients can virtualize the switch with partitions that isolate communications for multi-tenancy environments.

## Software Defined Network Ready

Today some data centers are gravitating toward a new environment; one that is software defined. With the proliferation of big data and devices like smart phones, data centers must be agile and responsive. Even with recent advances, the physical network often lacks the flexibility needed to accelerate business success. Flex System and the EN4093R support OpenFlow in a blade server chassis. This enables the EN4093R to be deployed as a network element in a broader OpenFlow network and obtain flow directions from a centralized OpenFlow controller.

## Why Lenovo

Lenovo is the leading provider of x86 systems for the data center. The portfolio includes rack, tower, blade, dense and converged systems, and supports enterprise class performance, reliability and security. Lenovo also offers a full range of networking, storage, software and solutions, and comprehensive services supporting business needs throughout the IT lifecycle.

## Specifications

<b>Interfaces</b>	<ul style="list-style-type: none"> <li>• Flexible port mapping provides users the ability to assign ports based on their needs.</li> <li>• Each internal 10Gb port or external 10Gb SFP+ port counts as a single 10Gb port license.</li> <li>• It is possible to exchange any combination of four 10Gb internal and/or 10Gb external port licenses into a single external 40Gb QSFP+ port license.</li> <li>• A single external 40Gb QSFP+ port license can also be broken out into four 10Gb port licenses.</li> <li>• 40Gb ports can only be used as external ports.</li> </ul>
<b>Base Module (PN 00FM514)</b>	<ul style="list-style-type: none"> <li>• 14 x 10Gb internal and 10 x 10Gb external uplinks</li> <li>• With flexible port mapping, clients have 24 port licenses that can be applied to the internal and external ports.</li> </ul>
<b>Upgrade 1 License - Requires Base Module (PN 49Y4798)</b>	<ul style="list-style-type: none"> <li>• Enables additional 14 x 10Gb internal and 2 x 40Gb external uplinks</li> <li>• With flexible port mapping, client enables an additional 22 port licenses (total of 46 with the base) that can be applied to the internal and external ports.</li> </ul>
<b>Upgrade 2 License - Requires Base Module And Upgrade 1 (PN 88Y6037)</b>	Enables all ports 42 x 10Gb internal and 14 x 10Gb plus 2 x 40Gb external uplinks
<b>Performance</b>	<ul style="list-style-type: none"> <li>• 100% line rate performance</li> <li>• Less than 1 microsecond latency</li> <li>• 1.28Tbps non-blocking switching throughput (full duplex)</li> <li>• 960Mpps</li> </ul>
<b>Stacking</b>	Up to eight EN4093R switches available using either 40Gb or 10Gb external ports, or two CN4093s and six EN4093Rs.
<b>Power Consumption</b>	Typical power consumption of 95W
<b>Warranty</b>	Takes on the warranty of the chassis (next business day replacement with phone support and software upgrades)
<b>Heat Dissipation</b>	1127 BTU/hour (typical)
<b>Mean Time Between Failures (MTBF)*</b>	236,805 hours @ 40°C
<b>Product Details and Associated Options</b>	Refer to the <a href="#">EN4093R Product Guide</a>

\* MTBF is calculated using the Telcordia Technologies Reliability Prediction Procedure for Electronic Equipment, (SR-332 issue 2) Parts Count (method 1 case 1) failure rate data.

† Clients wanting 6 ports of 10Gb Ethernet simply need two EN4093R scalable switches with flexible port mapping, while with HP, clients will require six HP Virtual Connect FlexFabric 10Gb/10D Modules.

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## For More Information

To learn more about the Flex System Fabric EN4093R 10Gb Scalable Switch, contact your Lenovo Business Partner or visit: [lenovo.com/systems/networking](http://lenovo.com/systems/networking)

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