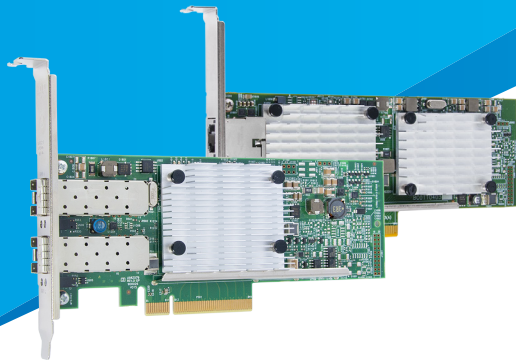


# Real-World Benefits for the Software-Defined Data Center

Cavium FastLinQ 3400 Series 10GbE Intelligent Ethernet Adapters



- **CONTROL** your 10GbE migration costs with 10GBASE-T connectivity and centrally manage multiple adapters remotely.
- **OPTIMIZE** application performance and guarantee quality of service (QoS) where it's most needed.
- **SCALE** Virtual Machine (VM) density to new heights while overcoming VLAN limitations.

## OVERVIEW

Efficient utilization of shared compute, storage, and networking resources is essential in today's virtualized data center. VMware® estimates that server virtualization has reduced CapEx and OpEx costs by 40-60% in most companies. That's real value, but is only fully realizable with the right hardware that allows enterprise IT administrators and managed service providers (MSPs) to leverage compute and capacity resources wherever they are available.

The Cavium™ FastLinQ® 3400 Series of OEM-proven Intelligent Ethernet Adapters provides exceptional value in the form of industry standard and innovative features to enable businesses to get the most out of their software-defined data center (SDDC) architecture.

## OVERCOME VIRTUAL LAN SCALING LIMITATIONS WHILE SECURING MULTITENANT CONNECTIVITY ACROSS DISPARATE DATA CENTERS

In a hyperscale multitenant data center where each tenant requires its own logical network, legacy virtual LAN (VLAN) technology does not suffice. The Cavium FastLinQ 3400 Series architecture with Virtual Extensible LAN (VXLAN) and Network Virtualization Generic Routing Encapsulation (NVGRE) offloads enables the flexible placement of multitenant resources throughout the data center to support the creation of up to 16 million logical networks to meet the requirements of the most demanding and dynamic cloud environments. The freedom to place virtual machines (VMs) anywhere greatly reduces over-provisioning to meet IT expansion requirements. The Cavium FastLinQ 3400 Series Adapters are the right choice for scalable Information as a Service (IaaS) cloud infrastructures.

## OPTIMIZE APPLICATION QUALITY OF SERVICE (QOS) BY DYNAMICALLY ALLOCATING BANDWIDTH WHERE IT IS NEEDED

Cavium FastLinQ 3400 Series Intelligent Ethernet Adapters deliver physical-level traffic isolation to give fine-grain QoS control to achieve maximum application and VM resource allocation. The ability to make one dual-port adapter appear as eight adapters to the operating system for use by applications allows optimal bandwidth allocation. Switch Independent NIC Partitioning (NPAR) is platform, switch, and OS agnostic, which ensures the highest levels of interoperability in heterogeneous data centers.

## SECURELY SCALE VIRTUAL MACHINE DENSITY WHILE REDUCING PHYSICAL SERVER CAPEX

With full line-rate performance, Cavium FastLinQ 3400 Series Intelligent Ethernet Adapters deliver exceptional performance for network traffic. The broadest set of adapter offloads in the industry ensures that for VMware vSphere®, Citrix® XenServer®, and Microsoft® Windows® Hyper-V® multitenant environments, server processor performance is maximized.

## RELIEVE HYPERVISOR I/O BOTTLENECKS WITH INCREASED VM AND APPLICATION PERFORMANCE

A Cavium FastLinQ 3400 Series Adapter using SR-IOV presents itself as multiple virtual devices where each one can be dedicated to a VM. Bypassing the hypervisor, each VM has direct access to the network adapter, which accelerates performance to new levels. With server CPU utilization lowered, VM density can be increased and data center wide VM requirements can now be satisfied with fewer physical server resources. For added security, Cavium hardware implements the concept of trusted and un-trusted functions for SR-IOV operations where physical functions are trusted and virtual functions are un-trusted. Only trusted functions have the capability to perform operations that affect the operation of the entire adapter or physical port.

## BREAK THROUGH COST AND INFRASTRUCTURE COMPATIBILITY BARRIERS WITH 10GBASE-T CONNECTIVITY

Cavium FastLinQ 3400 Series Adapters combine the latest features designed to maximize the software-defined data center with RJ45 network compatibility and cost-effectiveness. Use SFP+ connections to accommodate fiber optic or DAC connectivity as needed.

However, to better match top-of-rack distance requirements with ubiquitous UTP cabling infrastructure, deploying Cavium 10GBASE-T adapters provides the most flexible solution.

## SIMPLY POWERFUL CENTRALIZED CONFIGURATION TOOL TO MANAGE ALL OF YOUR CAVIUM FASTLINQ 3400 SERIES ADAPTERS ACROSS THE NETWORK

Quick and easy multi-adapter administration with full functionality: discover, configure, monitor, diagnose, provision, and control adapter access across multiple physical servers spanning different networks, operating systems, and protocols.

## RELIABILITY YOU CAN COUNT ON

Cavium has over 20 years of experience building bullet-proof, state-of-the-art communications hardware. The Cavium FastLinQ 3400 Series Adapter has grown from 13 previous product generations. This technology is fully adopted by every major tier-1 OEM. Passing rigorous OEM server certifications validates the 3400 Series Adapter's dependable functionality.

## ABOUT CAVIUM

Cavium, Inc. (NASDAQ: CAVM), offers a broad portfolio of infrastructure solutions for compute, security, storage, switching, connectivity and baseband processing. Cavium's highly integrated multi-core SoC products deliver software compatible solutions across low to high performance points enabling secure and intelligent functionality in Enterprise, Data Center and Service Provider Equipment. Cavium processors and solutions are supported by an extensive ecosystem of operating systems, tools, application stacks, hardware reference designs and other products. Cavium is headquartered in San Jose, CA with design centers in California, Massachusetts, India, Israel, China and Taiwan.

## CAVIUM FASTLINQ 3400 SERIES ADAPTERS COMBINE WORLD-CLASS FEATURES WITH COST-EFFECTIVE INFRASTRUCTURE SUPPORT

Feature	Cavium 3400	Cavium 3200	Intel X710	Intel X540	Intel X520
Line Rate Performance	✓	✓	✓	✓	✓
Switch Independent NIC Partitioning (NPAR)	✓	✓	✗	✗	✗
VXLAN / NVGRE Offloads	✓	✗	✓	✗	✗
SR-IOV	✓	✗	✓	✓	✓
10GBASE-T RJ45 Connectivity	✓	✓	✗	✓	✗
Remote Multi-Adapter Management	✓	✓	✗	✗	✗



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