

Enterasys Virtual Switching

Introduction

In today's highly virtualized and dynamic data centers, organizations are continuously challenged to manage virtualization and address the needs of today's IT application architectures. Those needs include further driving IT consolidation while increasing the scalability, agility and resiliency of the whole system.

New data center technologies like server virtualization and Fibre Channel over Ethernet (FCoE) require larger scale layer 2 "flat" networks. The any-to-any communication pattern of presentation, application and database servers require a non-blocking, possibly meshed (depending on size), network infrastructure.

Virtual switching "merges" physical switches into a single logical switch to increase bandwidth and create an active mesh between server and switches primarily in the data center and the campus LAN. Virtual switching is meant to be a mechanism to reduce configuration complexity through a reduction of the number of switches to manage.

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The reduction of configuration complexity is achieved by proper management applications, such as Enterasys [Network Management Suite](#) (NMS), which allow the concurrent configuration of almost any number of switches in one configuration step – for example, when it comes to policy enforcement and changes in the policy definition. While underlying "switch merging" supports this on a small scale (typically a low number of switches) the architecture of Enterasys NMS supports this for any type of switch and any network size – up to thousands of switches.

Products supporting Enterasys virtual switching provide:

- Automated link aggregation across physical switches and servers
- Active L2 network uplink to data center aggregation/core switches
- Non-stop forwarding of application traffic
- Automated "host-specific" network/security profiles per virtual host, per port

Today, Enterasys virtual switching is offered via the Enterasys [C-Series](#) stacking interconnect capabilities that virtualizes up to eight switches to form a single switch entity as well as on the [S-Series](#) product family for active network uplinks from access to core when multiple subnets are used. The picture on the next page illustrates this in a typical data center fabric design using C-Series switches at the access layer and S-Series switches at the collapsed core layer.

Beyond this solution, virtual switching with all possible features will be available on the S-Series as a software option to interconnect chassis over traditional 10Gb and future 40Gb Ethernet links (typically via a Link Aggregation Group, or LAG). The groundwork for this was laid nearly a decade ago as the software architecture of the N-Series, which today forms the basis of the S-Series data center switching line. This software architecture provides:

- Maximum availability and failure tolerance with seamless failover capabilities
- Established technology with more than 3 million switch and router ports deployed
- Proven Enterasys OS code base used in S-Series which will be leveraged in new data center switch products in development

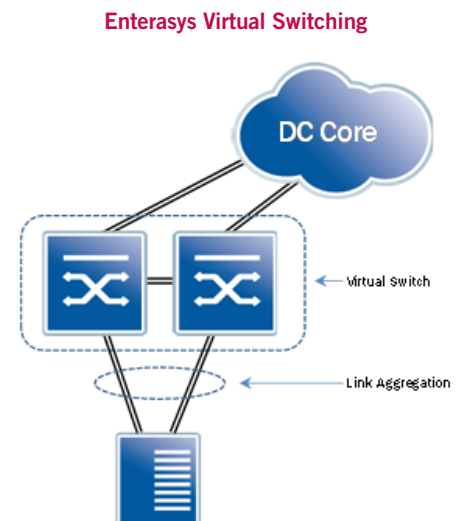
Benefits

Automation and TCO

- Automatic provisioning of multiple switches in one workflow
- Reduced OPEX

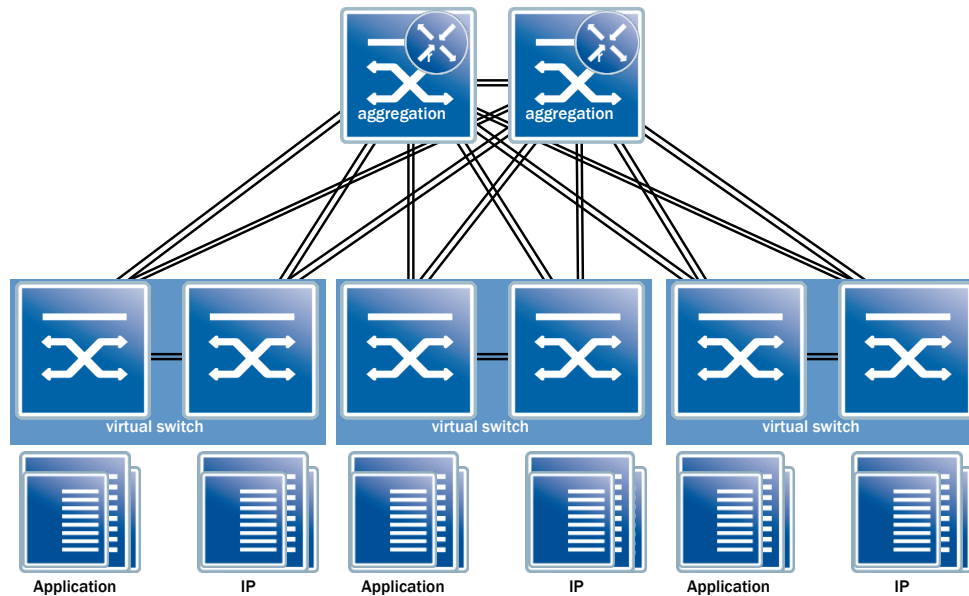
Performance and Resiliency

- More active links results in a higher aggregated performance
- Reduced failover times compared to traditional STP-based network designs



Additional emerging standards that will increase the resiliency, scalability and useable capacity of tomorrow's data center LAN include Shortest Path Bridging (SPB), submitted to the IEEE 802.1aq working group, and Transparent Interconnect of Lots of Links (TRILL), submitted to IETF TRILL working group. Enterasys is committed to open standards, and these proposed protocols show promise for delivering a more reliable and interoperable data center. Enterasys Data Center Fabric will use initially SPB, which is expected to be ratified in 2011, with fully interoperable implementations available in 2012.

Enterasys Data Center Reference Architecture



Summary

Enterasys provides virtual switching solutions today and is enhancing functionality over time in its core and data center products. A smooth migration path is provided for customers to ensure maximum availability during transition times.

Contact Us

For more information, call Enterasys Networks toll free at **1-877-801-7082**, or +1-978-684-1000 and visit us on the Web at enterasys.com



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