



TECHNOLOGY STRATEGY BRIEF

Enterasys CoreFlow2 Technology

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Introduction

Most network infrastructure components that are deployed today do not provide data to control or monitor applications. Networks are typically implemented in such a way that all services and all applications are given equal priority – or with only very basic prioritization schemes. With the increasing use of virtualization, SOA architectures, cloud computing and continued network convergence, this typical scenario cannot meet today's requirements. This affects both access networks and data center fabrics. In each area of the network it becomes more critical to properly identify applications to ensure availability by monitoring and enforcing controls. This goal cannot be achieved just by examining traffic at the transport layer.

A second challenge is that traditional network management does not provide granular visibility down to end-systems, users and applications. The IT management landscape is very fragmented today. A consolidation of tools must occur. This fragmentation combined with the lack of application visibility makes it difficult to troubleshoot problems that cross "borders" between various technologies and departments within the enterprise.

There are also evolutionary changes throughout the various components of the data center, including server, storage and network virtualization. New standards are gaining traction to address the needs of the new data center fabric. In a recent *InformationWeek* Data Center Networking IT Pro Ranking, 65% of respondents said they are planning to re-architect their data center network in the next 24 months. The convergence of new standards and data center upgrades poses a challenge to data center architects. Will the solutions you are reviewing today support these new standards or will they require expensive upgrades?

This paper highlights the unique advantages of the Enterasys CoreFlow2 technology that address the challenges associated with application visibility & control. We will also provide you with a vision toward developing standards, their effect and their anticipated adoption.

Use Cases Enabled by Coreflow2

Customers want more from their network solutions. Applications in the data center are more demanding of the network, and users expect more from IT each day. CoreFlow2 enables IT administrators with greater visibility into critical business applications by using information deep in the data layer of the packet. With this instrumentation, CoreFlow2 enables better controls to meet the SLAs the business demands. Other vendors' products are limited to TCP or UDP ports, greatly reducing visibility and control of applications. Examples of some use cases enabled by CoreFlow2 include*:

- **SAN**
 - Enable access control for iSCSI targets (Fig. 1) with granularity to the initiator
 - Bandwidth usage monitoring per iSCSI target
- **IP Voice & Video**
 - Enable QoS and access control for RTP media streams and control data
- **Cloud**
 - Enable role-based access controls for cloud services such as www.salesforce.com
 - Bandwidth monitoring for specific sites such as www.youtube.com

* Implementation details per product category are subject to the development roadmap. Please refer to the product datasheet and release notes for details

Benefits

Increased visibility

- Detailed monitoring of applications, their usage and response times in the network infrastructure

More granular control

- Network-based policy enforcement on the application layer rather than on the transport layer

Better service level

- Guaranteed bandwidth and minimum delay for sensitive applications

Reduced TCO

- Longer product lifecycles with flexible *CoreFlow2* technology
- Adoption of new standards via software upgrades rather than expensive and downtime intensive hardware swaps

Expanded visibility will soon be realized in a subsequent release of Enterasys Network Management Suite (NMS). NMS will aggregate the native unsampled NetFlow records generated by CoreFlow2 powered devices to provide application-level visibility across the network. Select Enterasys products will also support application response time measurement probes distributed throughout the network infrastructure. This will further enable the IT administrator to monitor application response times in their network to meet SLAs, deliver higher application availability and enable more efficient troubleshooting.

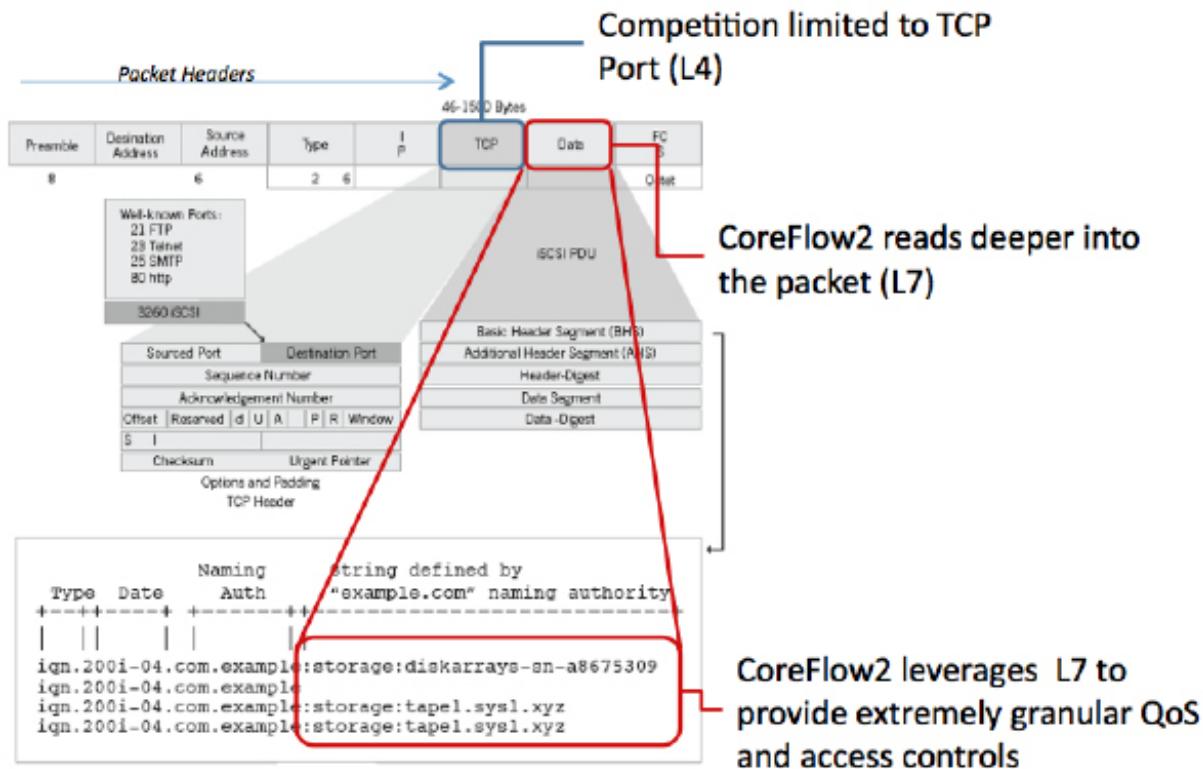


Figure 1: Enterasys CoreFlow2 improves application performance with greater visibility into packet flows

CoreFlow2 Technology

CoreFlow2 is the cornerstone of Enterasys' switching technology – addressing the need for application monitoring and control. CoreFlow2 is a highly programmable custom designed ASIC which delivers flexibility in packet classification and reframing not found in competitive offerings. The granularity of packet analysis and controls is unsurpassed, and it translates into real-world benefits in the data center.

Existing network systems treat the network as a collection of TCP and UDP ports, not applications. A common problem today is differentiating traffic on port 80. Commonly associated with web traffic, it is now used by many cloud applications. IT managers need a solution that can focus on the applications and systems that drive the business. The CoreFlow2 ASIC is a key enabler of such a solution.

CoreFlow2 looks beyond TCP and UDP ports. The deep packet classification engine enables the switches and routers to differentiate what type of traffic is using port 80 to apply more granular controls for access control and quality of service. A network infrastructure built on CoreFlow2:

- Automatically classifies and enforces application traffic at line rate – providing differentiated access for cloud applications from web surfing
- Scales to an unmatched 64 million flows and more than 1 Terabits per system – providing the granularity and scale for today's network cores and tomorrow's data centers
- Enables an easy upgrade path to various new standards without a disruptive and costly hardware upgrade – a cornerstone for an overall lower TCO than comparable products

Future-Proofed Design

Enterprises today are faced with the prospect of making rip and replace network decisions based upon which future-looking data center standards they want to support. CoreFlow2 is designed with the flexibility to support new standards (via simple software upgrades) as they develop, thereby providing true investment protection. CoreFlow2 is supported on key data center fabric, distribution and core router products offered by Enterasys. It will also be leveraged in future high end access switch families. Several important new standards (though, by no means, an exhaustive list) that can be supported through software upgrades include:

- IEEE 802.1q Shortest Path Bridging
- IEEE 802.1ah Provider Backbone Bridges
- IEEE Virtual Ethernet Port Aggregator (VEPA)
- IEEE 802.1ad Provider Bridges

Management of CoreFlow2 application controls

Network administrators are presented with a number of disparate network management tools that do not adequately provide them visibility into application traffic and performance. Enterasys Network Management Suite (NMS), along with the integrated role based access control, management is the key which unlocks granular network control. Released in 2001, it was the first policy-based network management solution in the industry which controls access and enforces rules at the edge of the network. Today, more than 10 million switch ports and access points supporting this technology have been successfully deployed into thousands of customer networks. Enterasys NMS enables the enforcement of quality of service (QoS), bandwidth control, VLAN and access control rules from layer-2 to layer-4. With CoreFlow2, this enforcement will be extended beyond end-system policies and extended policies into layer-7 to enable application-level classification & control, allowing for granular control and visibility into network traffic.

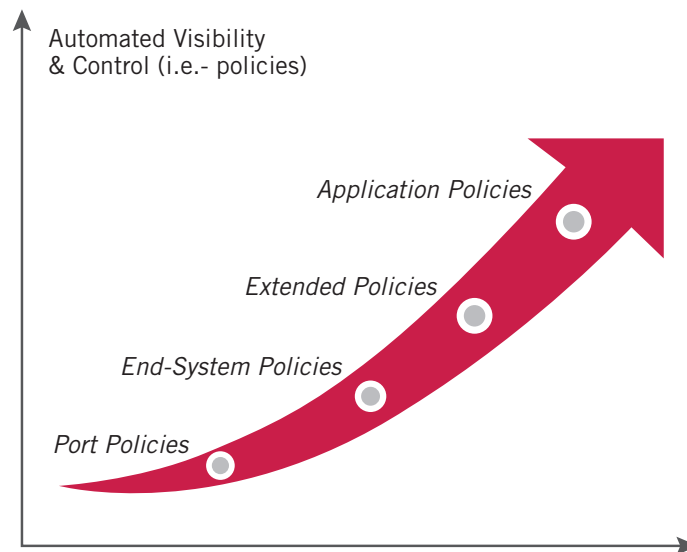


Figure 2: Evolution of Network Policies

Enterasys NMS leveraging NAC allows the administrator to dynamically assign roles to end systems and users based on multiple attributes such as authenticated identity (of both users and devices), security posture, device type, location, time and more. Enterasys NMS enables the collection of performance data so it intelligently merges network, topology, end-system, user and application data into a single management application for unmatched visibility and control of the infrastructure.

Conclusion

CoreFlow2 is a truly unique differentiator of Enterasys products. The technology encapsulates more than 15 years of advanced research & development. It provides industry leading application visibility and control at terabit speeds, investment protection and future proofing through its programmable nature, yielding both technical and business benefits to our customers.

With CoreFlow2, customers are able to increase the reliability of application delivery and application control beyond what is possible today while reducing the TCO of the network infrastructure.

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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