

FEATURES OVERVIEW

MAXIMIZING THE POWER OF E-BUSINESS

VERSION 0.8

INTRODUCTION

As use of the Internet in business has become commonplace, browser-based computing has similarly increased in complexity. Web Hosting, Online, Content and E-commerce companies – all rely on fast, reliable, error-free Web performance to run their operations. A typical corporate web site includes Web and database servers, routers, firewalls, L2/L3 switches, caches and other heavy components. The speed of a web site depends on how well these devices work together and how well traffic is managed within.

A typical Internet data center support many users, applications and organizations sharing few connections to the outside world. Bandwidth management and the control and monitoring of different traffic categories have become even more important in a current market of low operational margins. Hosting Service Providers need greater control to execute their customers Service Level Agreements (SLAs) without committing excessive resources. Web site operators need bandwidth management capabilities to avoid paying overuse penalties. While realizing this requirement, many Hosting Service Providers are still operating under a “best effort” model, because the tools to monitor and control traffic at the volume and granularity levels required were not available or priced prohibitively.

IT infrastructure is playing an increasingly important role in the success of a business. Market share, customer satisfaction, corporate image – all are intertwined with the consistent availability of a company’s Web site. The foundation behind these sites is that they must provide high performance, high availability, and flexible, secure and scalable solutions to meet the demands of today’s economy.

xLswitch combines maximum performance, high availability and ease-of-use to create an ideal platform for today’s Web solutions. In addition, the unique Open API guarantees that this platform could be used with all future protocols and applications.

L7 SWITCHING

Application Level (L7) Switching represents a new generation of networking specifically designed to address the unique requirements of Web traffic management. L7 Switches are “smart,” that is, armed with sophisticated load balancing capabilities, bandwidth management tools and the highest level of control over incoming traffic. The net result is a consistently positive experience for Web site users.

L7 switches look into the HTTP header in making load-balancing decisions, rather than simply stopping at the TCP port number. By examining the HTTP header, the switches can make decisions on how individual Web pages and images get served from the site. This level of traffic control can be helpful if Web servers are optimized for specific functions, such as image serving, SSL (Secure Sockets Layer) sessions or database transactions. Efficient use of this technology can improve site performance, take better advantage of available resources, and better direct resources to target audiences.

more details HTTP is carried on top of TCP sessions to guarantee delivery of all requested Web content. A client usually connects directly to a server using a TCP on Port 80 (the default for Web services) and then sends an HTTP request to the server through the TCP session. xLswitch then intercepts and analyzes the data in the HTTP request and makes intelligent traffic management decisions based on its content. In some instances, the server response can be analyzed, as well.

The information contained with the HTTP request and header that can be extremely useful, the first of which being the exact URL or Web page the client is requesting. xLswitch uses this information to direct all images to an image server or all database queries to a specialized Web server optimized for database operations. Administrators can use L7 switching to improve or enforce levels of services for particular customers based solely on a cookie field within an HTTP header, or a parameter passed to a CGI script- such as user ID or service class. If something shows up in the HTTP request, you [can use it to make a decision.](#)

After the decision is made, xLswitch then passes the request to a real server processes it. This could be done by establishing a new connection to the server, or by using one of existent connections from the persistent connections pool. In the latter example, we could considerably decrease the load on Web server by consolidating clients into fewer sessions, thus making the use of the cache more effective.

Next, the client and server connections are “spliced” using SWsoft’s patent-pending technology, allowing both server and client xLswitch to appear as a transparent device. Notably, servers will have the real client IP in their logs. xLswitch also does not perform expensive full recalculation of TCP/IP checksums, another distinctive performance advantage of TCP-splicing technology.

BANDWIDTH MANAGEMENT

Bandwidth management or Quality of Service (QoS) solutions often found in routers and traditional switches are usually too coarse and lack the necessary flexibility to manage the diverse variety of services found in the Internet Data Center. As these services are often virtualized, QoS is impossible to implement unless the device works on the application level, understands application protocol and can apply bandwidth policy based on application attributes. Specialized bandwidth management appliances are quite expensive and have difficulties keeping pace with growing traffic demands.

The xLswitch integrated high-performance bandwidth management service is designed to maximize bandwidth utilization control . Complete with server load balancing and content management capabilities, xLswitch is a flexible traffic and content switching platform. For companies that can afford to allocate extra resources to business-critical applications, bandwidth management offers greater security monitoring and control.

MORE DETAILS

Bandwidth management simulates multiple “virtual pipes” within one or more physical interfaces (ports). xLswitch can support 256 such virtual pipes and 256 traffic classes attached to these pipes.

Each traffic class can be characterized by a broad range of policies, including: IP address, service, application protocol, URL, HTTP cookies and other conditional filters. Administrators can also define the order of operation when handling packets that fit the criteria for multiple virtual pipes.

For each virtual pipe, the administrator must allocate an appropriate amount of bandwidth and define whether the pipe is bound, meaning it can borrow unused bandwidth other pipes, or isolated.

Availability of unbounded and isolated pipes allow xSPs and IT administrators to better regulate traffic flow at a more desirable target rate without leaving any wasting any uncommitted resources.

CONTINUOUS AVAILABILITY

Application availability can be threatened by DOS attacks or content, software and network or server failure. . Server resources are often out-of-balance, resulting in overloading low performance resources while high performance resources remain idle. Because network servers are now frequently being used to host extranets, e-commerce, and other sensitive applications, they are expected to provide increased performance while providing 24/7 availability to all traffic.

xLswitch provides high availability and increased performance capabilities that optimizes the performance and reliability of application services. With this bandwidth management tool, corporate enterprises can more easily achieve committed application service levels – usually called Service Level Agreements (SLAs). xLswitch also facilitates systems maintenance activities with minimal interruption in available service levels. xLswitch is designed to work in heterogeneous, multi-tier application environments – which are the defining characteristics of successful Web sites and hosting centers of tomorrow.

CONCLUSIONS

xLswitch solves real problems for e-business in a simple, powerful way. The xLswitch software solution is the most flexible bandwidth management tool available for the corporate enterprise and empowers data centers to maximize performance, availability and over all potential of their business.