



Up to 80% reduction in capital, maintenance, and operations expenditure for network monitoring solutions, while increasing monitoring coverage (for network Intrusion Detection Systems (IDS), network analyzers, forensics systems, and content inspection engines).

"The IDS Balancer fulfills a badly needed requirement in making the best use of valuable IDS resources. It is easy to configure and manage...it offers a particularly good understanding of IDS issues and configuration options to suit application specific IDS monitoring."

— Network Computing

Network Monitoring is Becoming Common Business Practice Across All Networks.

Network and security professionals monitor their networks for a variety of reasons:

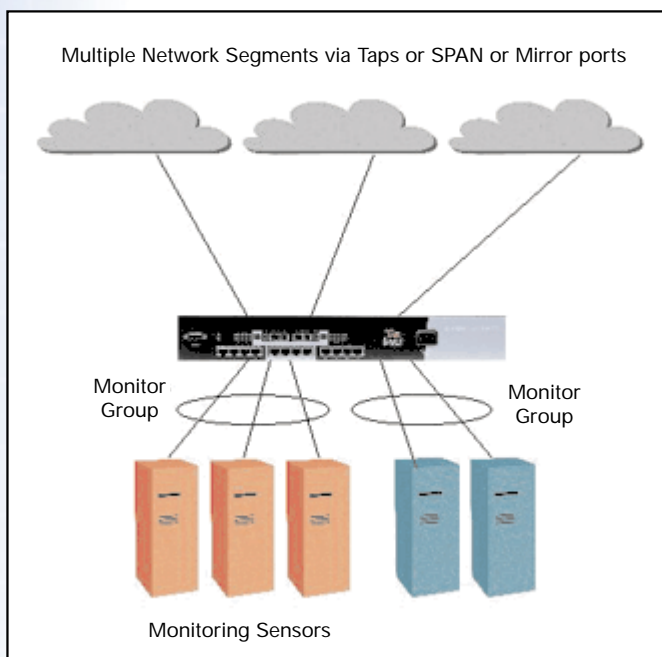
- To improve network security.
- To improve network uptime, and thus provide access to business applications.
- For capacity planning and improving end user SLAs.



Top Layer's IDS Balancer

There are a variety of monitoring systems that customers use, such as:

- Intrusion Detection Systems: to detect unauthorized intrusions and attacks (both external and internal) on the company's critical assets.
- Forensics systems: to identify the source of the intrusion, and possibly initiate legal action.
- Content inspection: to enforce corporate policy and prevent employees from accessing unauthorized web sites, such as pornographic web sites and gambling sites during work hours.
- Network analyzers for network troubleshooting.
- Rmon probes and other home grown systems, for collecting data for capacity planning and improving end user SLAs.



Network monitoring provides significant benefits to organizations, however it comes with a high cost and a few deployment challenges.

High Cost of Traditional Network Monitoring

To get 100% network monitoring coverage, network and security managers could choose to install a monitoring sensor in each segment of the network (e.g. before the firewall, after the firewall at the DMZ, and at the internal segments).

This approach works well for small networks, but for larger networks there is a high price tag due to the large number of sensors needed. Restricted by tight budgets, some security managers are taking their chances, and choose to monitor only some segments in their network. The result in these cases can be catastrophic, since missed attacks and intrusions can cause millions of dollars in damages to the organization. The Top Layer IDS Balancer™ is an alternative solution that provides superior monitoring coverage at a fraction of the cost.

IDS Balancer benefits

- Reduce your capital, maintenance, and operations expenditure for all types of network monitoring solutions.
- Simplify the management of your monitoring solutions.
- Enable simultaneous monitoring for different applications (such as security and network troubleshooting).
- Scale your monitoring solutions, and enable the sensors to sustain the volume of traffic to be monitored.
- Add N+1 redundancy for your monitoring sensors.
- Enable monitoring in asymmetrically routed networks.

Additional Deployment Challenges of Network Monitoring

In addition to the high cost, network and security managers also have to deal with the following deployment challenges:

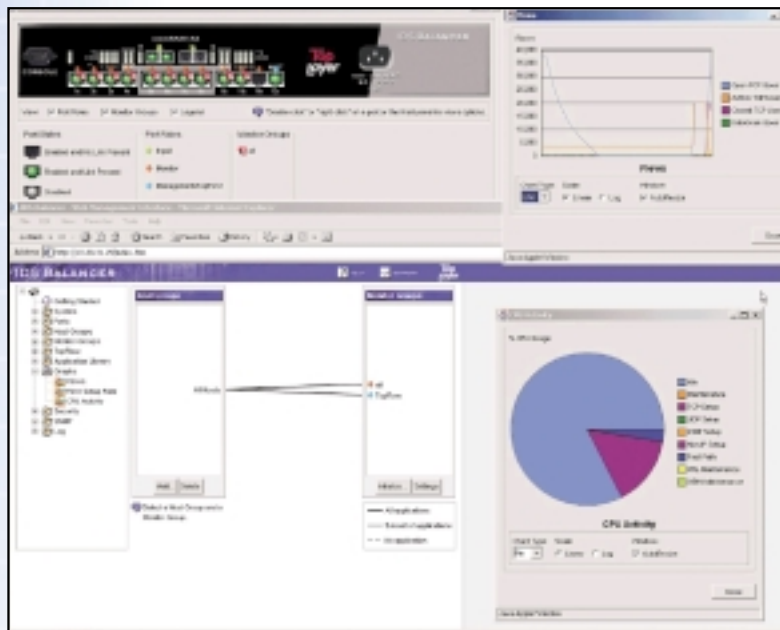
- Typically there are a limited number of “SPAN/Mirror” or tap ports in the network, and these have to be shared between the different monitoring applications.
- In many cases the monitoring sensors cannot keep up with large volumes of traffic.
- There is no easy way to add N+1 sensor redundancy.
- Most monitoring sensors cannot operate in asymmetrically routed networks. (Sensors need to see both sides of a flow to operate).

Aggregation Can Save up to 80% by Using Fewer Monitoring Sensors

The Top Layer IDS Balancer aggregates the traffic from multiple network segments and thus it provides immediate savings — since fewer monitoring sensors are required to examine the traffic. For example, if you want to monitor 6 GigE segments you can:

- a) Use 6 GigE attached monitoring sensors, or,
- b) Use one Top Layer IDS Balancer and one GigE attached monitoring sensor.

In this simple example, the 6 to 1 aggregation saves 80% of the monitoring sensor cost, while providing the same coverage. Top Layer’s family of high performance ASIC based IDS Balancers provides huge savings by offering aggregation for both Fast Ethernet and GigE networks.



Top Layer IDS Balancer Web Management Interface (WMI)

Investment Protection

If your network needs to be upgraded to handle increased traffic, using an IDS Balancer is a proven solution for maximizing your current investment in existing sensors and helping to extend their longevity.

When upgrading to Gigabit from Fast Ethernet, the IDS Balancer allows you the flexibility to continue to use your existing 100Mbit sensors while providing you with a cost-effective method for upgrading their performance.

Filtering and Multiple Copies of Traffic: No More Fighting for Shared SPAN/Mirror or Tap Ports.

It is very common for enterprises to use two or more different types of monitoring sensors, each one optimized for different types of applications and traffic. The Top Layer IDS Balancer can filter the traffic by IP address and/or the type of application,

thus enabling the monitoring sensors to be optimized. In addition, the Top Layer IDS Balancer can create “carbon copies” of either the whole or portion of the traffic, which can be delivered to different sensor groups. This functionality is very useful for delivering the same traffic to two different sensors, such as a network IDS and a network analyzer, and it allows side-by-side comparisons. Because of its versatility, the IDS Balancer can also be used to simultaneously test the performance and functionality of various sensors and determine which will work best in your environment.

Intelligent Load Balancing Enables Scalability of Monitoring Solutions

Many monitoring sensors have trouble handling high amounts of traffic. Faced with this kind of overload, these sensors begin discarding traffic without checking it for attacks – a sure recipe for disaster. The Top Layer IDS Balancer can be used to load balance the traffic to multiple sensors. Some balancing devices use “packet” based technology, balancing the traffic by looking at each packet and distributing the traffic to the various sensors. The problem with this approach is that you might end up with part of a flow going to one sensor, and the rest going to a different one. Since most sensors monitor traffic by looking at the whole flow, this will cause the sensor to malfunction and produce erratic results. The Top Layer IDS Balancer is a stateful flow-based device, which load balances the traffic based on the flows (conversations between hosts on a network). The relationship between a packet and a flow as it relates to the communication between two systems, can be compared to the conversation between two people. A packet represents a word or phrase in the conversation, whereas a flow represents the whole conversation.

High Availability by Adding Monitoring Sensor N+1 Redundancy

With a typical monitoring deployment, each sensor is installed singly, monitoring a separate portion of the network. When a sensor fails, attacks or intrusions on the portion of the network monitored by that sensor are missed.

The Top Layer IDS Balancer distributes traffic across a group of sensors. If one monitoring sensor in the group fails, the remaining sensors pick up the load without impacting the monitoring operation.

Complete Network Coverage in Asymmetrically Routed Networks

In networks where asymmetric routes are present, placement of monitoring sensors creates an even more challenging problem. To be effective, a sensor needs to see the entire data flow between any two end points. When traffic enters via one route and leaves via another, the sensor will only see half of the communication, and a serious attack may go undetected, or protocol anomalies may be falsely reported.

The IDS Balancer addresses this issue by using patented technology that matches both halves of the communication before passing the traffic to the sensor — providing complete network coverage.

Compatibility with Network IDSes, Network Analyzers, Forensics, Content Inspection Engines, Rmon Probes, and More

Almost all monitoring devices (network IDS, network analyzers, forensics systems, content inspection engines Rmon probes, and other devices) can see all the network traffic on the segment regardless of the source or destination address — this is termed promiscuous. The Top Layer IDS Balancer has been tested and can be used for aggregation, filtering, and load balancing of traffic for any monitoring device that works in promiscuous mode.

Easy to Deploy and Use

The IDS Balancer’s Web Management Interface and configuration wizard makes the product simple to install and configure, and easy to use. Typically it takes less than fifteen minutes from beginning to end of installation.

IDS Balancer Features

- Aggregation of traffic.
- Filtering by IP address and application.
- Intelligent load balancing.
- Flow Mirror™ to intelligently distribute traffic in full context.
- Policy-based traffic distribution considers both the type and the source of the traffic.
- Wizard-based configuration, easy to use and deploy.
- 802.1Q VLAN tag stripping for sensors that can't accommodate them.
- Flow Mirror traffic to multiple simultaneous groups to accommodate different types of sensors.
- Kill/reset packet forwarding.

“This is a great product! It is not very often that you come across a high-tech product that does exactly what it is supposed to do, and is very easy to use. I had it up and running the way I wanted within 30 minutes, pretty much without reading the documentation.”

— Mike Iglesias

Manager UCI Network and Academic Computing Services Team

IDS Balancer Family: Port Configurations

AS3531:

(12) 10BASE-T/ 100BASE-TX ports

AS3532:

(12) 10BASE-T/100BASE-TX ports

(2) 1000BASE-SX ports

TL4508:

(8) 10BASE-T/100 BASE-TX ports

(4) 1000BASE-SX ports

(4) GBIC ports (can either be
1000BASE-SX, 1000BASE-LX, or
1000BASE-TX)

Technical Specifications

The following table lists the system unit's technical specifications and compliance information.

Parameter	3500 Model Specifications	4500 Model Specifications
Physical Dimensions	Height: 6.5 cm (2.55 in) Width: 43.8 cm ¹ (17.25 in) or 48.6 cm ² (19.13 in) Depth: 33 cm (13 in) Weight: 5 kg (11 lbs)	Height: 8.8 cm (3.47 in) Width: 43.8 cm (17.25 in) Depth: 45.7 cm ³ (18 in) or 49.5 cm ⁴ (19.5 in) Physical Weight: with one power supply: 10 kg (22 lbs) with redundant power supply: 12 kg (26 lbs) Power Supply Weight: 2 kg (4.4 lbs)
Environmental		
Operating Temp	0°C to 40°C (32°F to 104°F)	0°C to 40°C (32°F to 104°F)
Non-operating Temp	-25°C to 70° C (-13°F to 158°F)	-25°C to 70° C (-13°F to 158°F)
Relative Humidity	5% to 95% non-condensing	5% to 95% non-condensing
Compliance to Safety	UL 60950, 3rd Edition CSA C22.2 No. 60950, 3rd Edition EN 60950/IEC 60950, 3rd Edition	UL 60950, 3rd Edition CSA C22.2 No. 60950, 3rd Edition EN 60950/IEC 60950, 3rd Edition
Compliance to EMC		
Emissions	FCC 47 CFR Part 15 Class A; EN55022: 1998 including CISPR22 3rd Edition; EN61000-3-2: A1: 1998 and A2: 1998; EN61000-3-3: 1995	FCC 47 CFR Part 15 Class A; EN55022: 1998 including CISPR22 3rd Edition; EN61000-3-2: A1: 1998 and A2: 1998; EN61000-3-3: 1995
Immunity	EN55024: 1998 including CISPR24 1st Edition	EN55024: 1998 including CISPR24 1st Edition
International Compliance Approvals	UL Listed, CUL, AS/NZS 3260, AS/NZS 3548: 1995, CE, FCC Class A, BSMI CNS: 13438 Class A, VCCI Class A Common Criteria EAL2 (target completion by July 2004)	UL Listed, CUL, AS/NZS 3260, AS/NZS 3548: 1995, CE, FCC Class A, BSMI CNS: 13438 Class A, VCCI Class A Common Criteria EAL2 (target completion by July 2004)
Power Requirements		
AC Input Voltage	100 to 240 VAC Autoranging	100 to 240 VAC Autoranging
AC Input Line Frequency	50 to 60 Hz	50 to 60 Hz
AC Current Amps	1.0 A	3.0 A (maximum)
	1. without rack-mount brackets 2. with rack-mount brackets	3. Not including power supply handles 4. Including power supply handles

About Top Layer

Founded in 1997, Top Layer Networks develops network security solutions that enable enterprises worldwide to protect their infrastructure and critical online assets from cyber threats. The Company's patented, ASIC-based products are engineered to deliver accurate and reliable protection mechanisms while operating as robust in-line network devices. Top Layer Networks is headquartered in Westboro, Massachusetts with sales and support presence in France, Germany, Japan, Korea, and the United Kingdom.



perfecting the art of network security

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