

BusinessCom | Internet via Satellite
PROFESSIONAL BROADBAND SOLUTIONS WORLDWIDE



VIPER TES-1000

Traffic Engineering Server
Introduction Brochure



WHAT IS VIPER TES-1000?

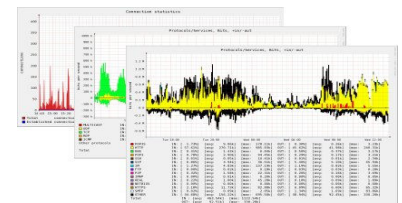
Few will deny that network reliability and performance together play an especially important role in the corporate world today. BusinessCom's integrated bandwidth management and quality of service (QoS) solutions are developed to meet exigent requirements of Small and Medium-sized Enterprises, and Small and Medium-sized Internet Service Providers. BusinessCom Viper TES-1000 is a Traffic Engineering Server designed to monitor and manage Internet Protocol traffic passing through an Internet Service Provider. Viper TES-1000 is powered by an open source Linux operating system and incorporates an advanced traffic engineering tool set that will be appreciated by every network administrator with the goal to build an efficient Internet Service Provider network with exceptional performance and security.

Viper TES-1000 is very easy to integrate into your new production level network topology as well as during the process of upgrading and expanding the network. Viper TES-1000 is equipped with two 100/1000 Mbit/s Ethernet Network Interface Cards that are connected to the Internet backbone and the subscriber base accordingly. The initial configuration takes less than five minutes, following a step by step instructions from the User Guide.

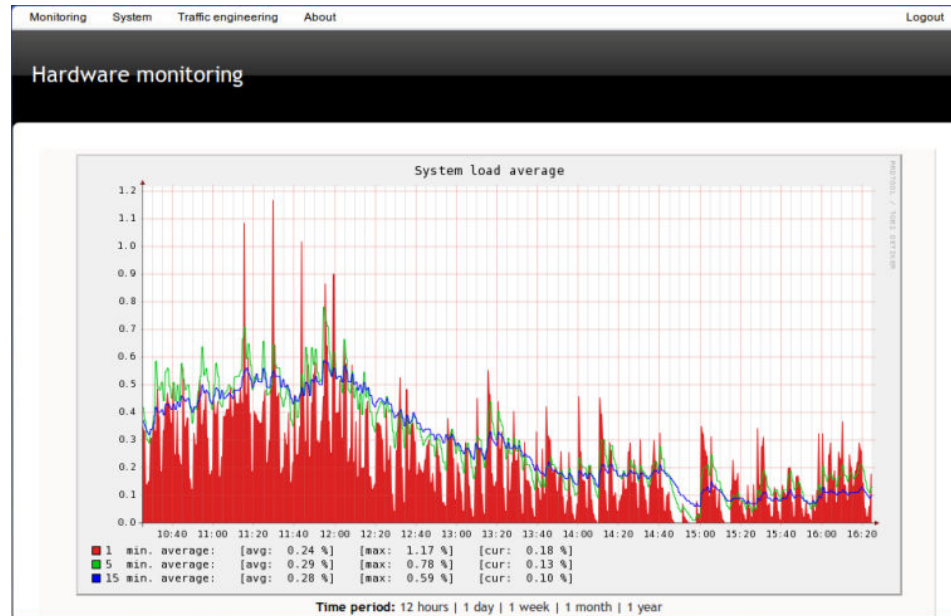
Viper TES-1000 doesn't depend on the type of the Internet backbone connection and the media you use to redistribute the Internet access to your subscribers. The only requirement of your local infrastructure is that the network should be Fast Ethernet. A variety of add-on modules are available to support a broad range of additional interfaces. From the hardware perspective, Viper TES-1000 is a highly reliable server based on the x86 architecture. It has the 1U rack-mountable form factor that is easy to deploy into any networking environment. Viper TES-1000 comes with the pre-installed BusinessCom Viper TES Operating System (VTOS) based on the leading Linux OS and powerful tools developed by BusinessCom to make the complex bandwidth management tasks as easy as possible, even for operators with little networking experience.

VIPER TES-1000 KEY FEATURES:

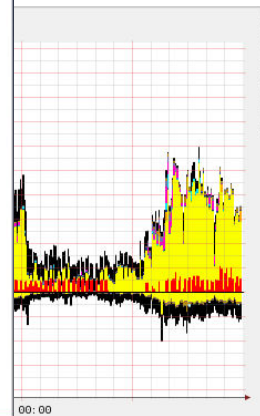
- Quality of Service: Mission Critical Network Applications Prioritizing, QoS for Interactive Network Applications (including VoIP, Audio, Video), Application level (layer 7) based QoS
- Bandwidth management: Accurate and powerful Bandwidth Shaping, Bandwidth Management Groups support, Free bandwidth sharing support, Smart Throttle engine
- Acceleration and caching: Acceleration via BusinessCom (Performance Enhancing Proxy), Transparent Cache Engine for bandwidth saving and response time minimizing
- Subscribers' authentication: MAC, IP and both MAC + IP authentication levels
- Protocol and Application level Traffic Inspection with advanced content filtering options
- Advanced monitoring: Network throughput monitoring, Detailed HTTP activity monitoring, Health status monitoring and etc.
- Security: Advanced semi-automatic Firewall, Network Intrusion Detection System
- Web based Administration Panel and Terminal Access support
- Routing, Network Address Translation (NAT), Automatic DHCP, caching DNS, Self Updating System, E-mail Reports



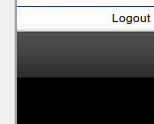
VIPER TES-1000 WEB ADMINISTRATION INTERFACE



>> Viper TES-1000 is provided with a Web Administration facility, that enables operators to control TES-1000 by logging to the administrator's panel using any web browser. The panel offers all the instruments to control services and features provided by Viper TES-1000, including bandwidth monitoring facilities, system monitoring, report generation and much more.



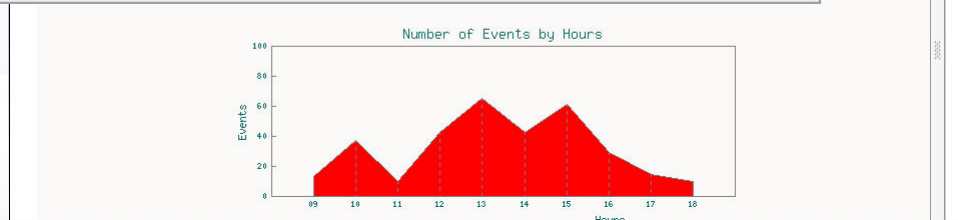
>> The network administrator can set up multiple accounts to provide secure multi-user access to the Web Administration Panel in order to ensure that the ISP network is monitored continuously, permitting rapid problem resolution and optimum service.



>> During managing TES-1000 via Administration Panel all data between operator's computer and Viper TES-1000 is entirely encrypted using 256 bit AES (RSA/SHA) algorithm.

Service	IN	IN [%]	avg	max	OUT	OUT [%]	avg	max
POP3S	[12.63%]	[avg: 62.74k]	[max: 330.47k]	[1.66%]	[avg: 1.24k]	[max: 6.22k]		
HTTP	[59.03%]	[avg: 395.10k]	[max: 1154.38k]	[45.66%]	[avg: 50.08k]	[max: 294.07k]		
DNS	[0.24%]	[avg: 1.59k]	[max: 7.91k]	[1.63%]	[avg: 0.86k]	[max: 6.04k]		
POP3	[0.55%]	[avg: 3.04k]	[max: 115.55k]	[0.22%]	[avg: 0.18k]	[max: 2.08k]		
SSH	[0.04%]	[avg: 0.16k]	[max: 26.51k]	[0.06%]	[avg: 0.04k]	[max: 2.06k]		
SIP	[1.66%]	[avg: 6.51k]	[max: 38.99k]	[13.93%]	[avg: 10.89k]	[max: 54.05k]		
IM	[6.11%]	[avg: 11.23k]	[max: 149.17k]	[1.41%]	[avg: 1.40k]	[max: 16.06k]		
FTP	[0.00%]	[avg: 0.03k]	[max: 9.59k]	[0.01%]	[avg: 0.02k]	[max: 4.29k]		
P2P	[1.80%]	[avg: 15.72k]	[max: 207.06k]	[0.59%]	[avg: 0.71k]	[max: 6.04k]		
IMAP	[0.00%]	[avg: 0.00k]	[max: 1.10k]	[0.00%]	[avg: 0.00k]	[max: 0.08k]		
REAL	[1.04%]	[avg: 8.32k]	[max: 144.03k]	[0.50%]	[avg: 0.63k]	[max: 33.55k]		
NETBIOS	[0.00%]	[avg: 0.00k]	[max: 0.00k]	[0.00%]	[avg: 0.00k]	[max: 0.00k]		
HTTPS	[1.60%]	[avg: 11.40k]	[max: 103.12k]	[5.62%]	[avg: 6.29k]	[max: 83.00k]		
SMTP	[0.01%]	[avg: 0.03k]	[max: 0.61k]	[0.37%]	[avg: 0.38k]	[max: 22.20k]		
OTHER	[15.29%]	[avg: 104.46k]	[max: 698.89k]	[28.33%]	[avg: 99.84k]	[max: 339.13k]		
Total		[avg: 620.33k]	[max: 1598.57k]					
		[avg: 99.92k]	[max: 339.22k]					

>> Viper TES-1000 provides Terminal Access that can be used for remote or local TES-1000 management operations, such as the initial configuration of the Viper TES-1000 TES-1000 prior to connecting it to the network.



>> Configuring Viper TES-1000 through Web based Administration Interface is very easy even for network operators with little networking experience.

KEY ADVANTAGES OF A NETWORK RUNNING VIPER TES-1000

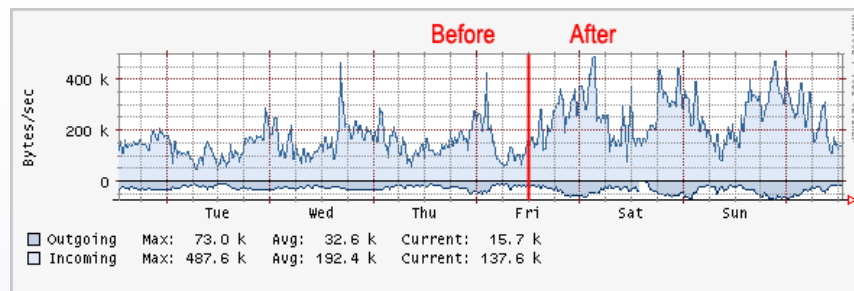
Features	Benefits
<p>Quality of Service Bandwidth management</p> <p>Network applications prioritizing Bandwidth shaping Throttle engine</p>	<p>Increase backbone bandwidth utilization efficiency with guaranteed Quality of Service for the subscribers. When the Internet was first being created, there was no perceived need for a QoS mechanism, so the entire Internet ran at a "best effort" mode. Some Last mile Internet Service Providers who connect end clients to the Internet backbone generally pay very little attention to QoS setup. Most of these ISPs are running their networks on a standard FIFO (First In First Out) basis with no shaping and prioritizing. This results in inefficient and unfair services being provided to unhappy clients. The QoS mechanisms of Viper TES-1000 ensure that your enterprise customers receive the appropriate quality of Internet access service and that everybody in your network receives a fair share of bandwidth. Using the Viper TES-1000 rate limiting and shaping tools you are able to prioritize network bandwidth, to support critical applications, prevent power users from abusing the bandwidth, and preventing your network from being overloaded with malicious traffic such as viruses, floods and Peer to Peer applications. This is especially appreciated when expensive satellite Internet backbone bandwidth is used. The Bandwidth shaping and Throttle engine improves efficiency of broadband resource utilization helping to deliver a cost-effective and high-quality service for end user and a profitable and optimized network service for the ISP.</p>
<p>BusinessCom PEP Accelerator</p> <p>HTTP acceleration and compression</p>	<p>Up to 400% boost on the web browsing and file downloads both on uplink and downlink compared to a standard non-accelerated service. Interactivity increase may be seen by the naked eye -- end users always love the performance of an accelerated service. A common work day of Internet access results in approximately 1 to 5 inbound/outbound traffic ratio, caused by TCP acknowledgments and requests sent to the Internet servers. PEP allows users to save up to 90% on the outbound circuit traffic that eliminates sluggish response time and speeds up web page downloads even in a highly congested uplink circuit -- a 96 bits per second uplink is sufficient to fill in a smooth 1 megabit per second downlink rate. BusinessCom PEP software provides on the fly traffic compression that allows ISPs to achieve up to 30% overall bandwidth savings, both on the inbound and outbound circuits. Compression does not work on files that are already compressed such as video and archived data files such as WinZip; however significant savings are possible with the bandwidth savings provided by compressing most web pages and text content like email.</p>
<p>Firewall, Filtering and NIDS</p>	<p>Secures your network. The Viper TES-1000 firewall allows system administrators to sleep well at nights while it protects your network from attacks from the outside. Easy to set up filtering and authentication mechanisms prevent unauthorized access to your network. The built-in Network Intrusion Detection System provides detailed statistics on the health of your subscriber base PCs and potential threats to your system's security and performance. This allows network administrators to react or proactively to eliminate the threat.</p>
<p>Extensive Monitoring</p>	<p>More control for network administrators. At any time of day or night the network operator or administrator may log in to the web administration panel running on Viper TES-1000 to check the network uptime, health and obtain detailed statistics of the network usage. Real time network throughput monitoring is available.</p>

CASE STUDY: WIRELESS INTERNET SERVICE PROVIDER POWERED BY VIPER TES-1000

BusinessCom Internet via Satellite provides Internet VSAT backbone to one of its customers -- an Internet Service Provider (ISP) located in Iraq. The ISP purchased a BusinessCom PEP-iDirect VSAT solution featuring burstable satellite Internet backbone circuit, further sharing Internet Access to it's customers via their own Wi-Fi Access Points, Ethernet and DSL cables. Upon reaching a customer base of 200 subscribers, the ISP encountered obstacles on their way to further growth such as traffic congestion, reduced network reliability, and higher than expected operating costs. After BusinessCom engineers inspected the network, the following symptoms were observed that are typical to almost any ISP or Enterprise network worldwide:

- **Subscribers' PCs were vulnerable to viruses saturate the network with malicious and unwanted traffic.**
- **A small (under 10%) percentage of "power users" are usually occupying more than a half of the VSAT backbone link by leaving their computers turned on throughout day and night to download large multimedia content such as movies and similar, causing all the other subscribers to suffer from slow speeds.**
- **Peer-to-peer applications such as Bittorrent, Gnutella and others are abused, saturating the backbone with thousands of sessions and unwanted traffic.**
- **Quality of VoIP calls are poor as they aren't prioritized and bandwidth resources are exhausted by other network applications.**
- **Adding more bandwidth to the backbone has not resulted in an adequate performance increase.**

BusinessCom engineers have recommended implementing a Viper TES-1000 unit on the ISP's network. The ISP, in order to decrease the costs, decided to build their own server using the AMD Duron CPU and off the shelf components. BusinessCom was responsible for providing software and administration services. BusinessCom engineers assisted with installation of BusinessCom Viper TES-1000 operating system and software using the remote administration feature. Every subscriber was given a 256 kbps of bandwidth on Rx and 128 kbps on Tx with a smart Throttle mechanism enabled to prevent "heavy downloads" to occur. The Throttle barrier was set at 30% link utilization with the fallback to 64 kbps once a bandwidth abuse situation is discovered. The Viper TES-1000 has also replaced a 3rd party NAT server by providing firewall and advanced caching facilities and PEP acceleration in addition to Network Address Translation. The built in Viper Network Intrusion Detection System (NIDS) has been set up in order to report all the security accidents to the ISP network administrator. The results were eye-opening and significant:



- **The Internet access speed on Rx per every subscriber has grown up from a 100 kbps average to a steady 256 kbps, more than 150% efficiency increase.**
- **The average bandwidth rates on the VSAT backbone link grew from a 1.5 Mbps average to 2 Mbps, more than 30% efficiency increase.**
- **Daily NIDS reports have enabled network administrators to isolate all the sources of security and performance threats. Malicious virus and flood traffic on the network has dropped from 15% to 2%.**
- **Quality of VoIP calls dramatically improved due to correct implementation of QoS.**
- **The overall subscriber's satisfaction level improved, complaints became a rarity. The ISP continues to grow successfully.**

After discussions with the ISP administrators, both parties concluded that the whole network could accommodate 50% more customers with no increase in current operating costs. The revenue gains resulting from the newly optimized service justified the Viper TES-1000 in less than a month.

VIPER TES-1000 SPECIFICATIONS

Item	Specifications
Hardware Platform*	Viper TES-1000 incorporates: HP ProLiant DL140 G3 Server Dual Core Intel Xenon 5110 CPU (1.6 GHz, 1066 MHz FSB) 1024 MB PC2-3200 Fully Buffered RAM with Advanced EEC 2x80 GB 7200 rpm SATA RAID-1 Hard Drives Intel 5000X Chipset, Mirroring Mode Rail Kit, 650W Power Supply Two Broadcom 10/100/1000 Mbit/s NICs, DVD-ROM drive
Operating System and Software	BusinessCom Viper TES Software
Physical Characteristics	Case dimensions: 4.32 x 42.62 x 67.62 (cm) Weight: 15.87 kg Input Requirements: 90 to 140 VAC/180 to 264 VAC Form factor: 1U, 19" Rack-mountable

* Specifications may change without notice. Components may be substituted with the ones providing the adequate performance and reliability levels.

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VIPER TES-1000 COSTS

Item	Specifications
Hardware Platform	1800 USD includes 1 year immediate spare parts replacement warranty
Viper TES OS	Free of charge
Custom Tailored Viper TES Operating System Installation	1000 USD includes Initial TES Configuration and 7 days of Remote Administration Service
Remote Administration Services	Please inquire for more information



Please note: Customer must return the hardware intact in order to apply for the money back.

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