The MSI 9800GT T2D512 OC is nevertheless at the same level with most of the high-end graphics cards, but it set itself apart with its good cooling mechanism and raised clocks. Having two of these in an SLI configuration wouldn't be a bad thing to have, but it'll burn quite a hole in the pocket. —*Billy Joe I. Allardo*

3DMark 2006:	8437 (1024x768), 8131 (1440x900)
FEAR (Direct3D 9.0c):	148 (1024x768), 140 (1440x900)
Company of Heroes (DirectX 10):	46.3 (1024x768), 41.5 (1440x900)
Engine clock:	735MHz
Memory clock:	2.198GHz
3DMark 2006:	8536 (1024x768), 8267 (1440x900)
FEAR (Direct3D 9.0c):	153 (1024x768), 144 (1440x900)
Company of Heroes (Direct 10x):	47.4 (1024x768), 43.1 (1440x900)

A good performer when it comes to graphics processing, the card is also as valuable when it comes to conserving power and prolonging hardware life.	
Graphics engine:	Nvidia GeForce 9800 GT
Bus standard:	PCI-Express x16 2.0
Video memory:	512MB DDR3
Memory interface:	256-bit
Maximum resolution:	2560x1600
Engine clock:	660MHz
Memory clock:	1.9GHz
Connectivity:	DVI (2), S-Video

Effective All-in-One Network Protection
CYBEROAM CR 500I
www.cyberoam.com

IN an office environment where work is highly dependent on being connected to the internet, users are always under constant assault from viruses, spam, and other such risks. No matter how careful you are, there will always be a risk of infection as these threats are constantly adapting to be more and more difficult to detect. Furthermore, most users have an idea of external threats like those from the internet but only few are aware that malicious threats can be transmitted from an internal source like a local network.

Another complication facing the workplace is the misuse of company resources. A very common instance of this is the distribution (or lack thereof) of internet bandwidth among users. It's bad enough when a single user hogs most of the bandwidth with long and sizeable downloads.

With these concerns in mind, Cyberoam introduces the CR 500i, part of its line of Unified Threat Management (UTM) appliances.

In a nutshell, the CR 500i is a perimeter guard that acts as a firewall and filters both spam and viruses from going in and out of a local network. It also doubles as an IPS (Intrusion Prevention System) and in addition can filter internet content and applications, as well as manage bandwidth allocation. Logs of every detail can then be viewed with its comprehensive reports. What separates the CR 500i with other UTMs is its identity-based security which eliminates the dependence on IP addresses.

The CR 500i can be connected into the network either by setting it up as a bridge or gateway. In gateway mode, the CR 500i can act as a firewall or replace an existing firewall, a gateway for routing traffic, a link load balancer and implement gateway failover functionality (applies when there are more than one ISP and switches users to the alternate connection when the primary connection fails). Deploy the CR 500i in bridge mode if there is already an existing private network working behind a router or a firewall and you don't want to replace the current firewall.

After connection, it can then be accessed using the Web Admin Console or the CLI Console interface with a remote login utility (TELNET). The appliance can easily be configured using the Web Admin Console with the network configuration wizard.

From the get-go, the CR 500i already has two default firewall rules based on the IAP (Internet Access Policy) chosen from the network configuration wizard installation. Adding new firewall rules are easy enough using the Web Admin Console. Firewall rules are specified to work in specific zones, the logical grouping of ports with the same function (Cyberoam offers four default zones: LAN, WAN, DMZ, LOCAL). In addition to usual firewall settings is its NAT (Network Address Translation) rule which allows outgoing traffic to be transmitted using a specific IP address and Virtual Hosting.

Users in the network can be monitored using different means of authentication: ADS (Active Directory Service), Windows Domain Controller, Cyberoam, LDAP server, and RADIUS server.

All of these automatically map users except for Cyberoam which calls for manually adding each and every user and adding them to groups.

Bandwidth policies can be applied to users to allow for proper allocation based on requirements. Furthermore, bandwidth priority can be set based on the application (higher priority on VoIP applications). Content filtering is based on restrictions set on categories, keywords, URL, domain names, and file types, with restrictions that extend to P2P applications, social networking sites, and IM applications. These rules can be applied to specific users and groups and can be set to work on a scheduled time (i.e. Content filter restriction on friendster can be lifted from 12:00pm-1:00pm). Rule priority is that user-based policies override group-based policies.

The CR 500i scans for spam and virus upon entry on HTTP, FTP, SMTP, POP3, and IMAP protocols, and automatically places infected mail and SMTP spam in quarantine storage, which has a capacity of 5GB and will fill up to 80% before it starts to delete older files. Administrators can view the files for manual deletion from here.

By default, Cyberoam adds Spam or Probable Spam as a prefix to mail subject headers and automatically cleans infection on virus infected mail to make it easy for the receiving client to identify them. Adding or changing anti-spam and anti-virus policies are done with the Web Admin Console. One frustration when manually adding IP addresses to a group policy is the lack of support for * wildcard (you can't enter 192.168.*.* to include IP addresses from 192.168.0.0 to 192.168.255.255 and will have to enter them all individually). Like policies on content filtering, rules on anti-spam and anti-virus can be set on specific users and groups. In addition, mail can be archived if

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enabled and set in the policy. Since virus scanning can very resource-heavy, the CR 500i can be configured to forego scanning on trusted websites.

Since almost all of the CR 500i's features can be set to enable logging, comprehensive reports are kept and stored and can be sent as an email alert on a daily basis. A summary of these reports can be found using the Dashboard page on the Web Admin Console. Analytical reports for web surfing, traffic discovery, web trends, VPN, IDP, FTP, audit log, anti-virus, anti-spam, and compliance are also included. These reports can be broken down further to view specific details. For instance, anti-spam reports can be broken down SMTP, POP3, and IMAP. These three categories can further be specified to show only the receivers and senders as well as a date specification. —*Carlo C. Gutierrez*

> Setting up and configuring the CR 500i may take a while to get used to but it doesn't change the fact that it's a very capable network perimeter guard.

High-end Card Gets a Pre-boost
ASUS EN9800 GTX TOP P12,500
www.asus.com

BEFORE the Nvidia GeForce 200 series came out, the 9800 GTX (or G92) chip was once the top dog of the Nvidia graphics processing unit (GPU) line. It was the first to sport a 65nm fabrication process, use the PCI-Express x16 2.0 interface, and feature a total memory up to 1GB. The aforementioned features, plus the staunch 600MHz engine clock and 1.8GHz memory clock, still gives the 9800 GTX an edge over most other GPUs available.

Asus takes the chip to a higher notch with its EN9800GTX TOP offering. The graphic card comes overclocked out of the box, with the engine and memory clocks jacked up to 755MHz and 2.35GHz, respectively. Still, you can raise the clocks even more with the help of the bundled Asus-developed Smart Doctor and Gamer OSD tools.

On normal setting and at a resolution of the 1024x768, the card managed to get an 8575 score in 3DMark 2006 and rates of 151 and 48.5 frames per second (fps) in Company of Heroes (COH) and First Encounter Assault Recon (FEAR), respectively. Upping the resolution to the 1440x900, the scores dropped a bit, but the smooth nonetheless. There were decreases of two percent in 3DMark 2006, while the rates dropped in COH by eight percent and 7.9 percent in FEAR. Despite the decrement, the applications still ran smoothly.

We were able to further overclock the engine by 6.6 percent and the memory clock by 5.1 percent. The result was a slight raise with the 3DMark 2006 score and the frame rates of both COH and FEAR.

So far, the outright snag with the Asus EN9800GTX TOP is its size. With its 266.7mm length and bulky dual-slot cooling mechanism, you'll need a spacious chassis to fit this in. Slotting this into a cramped mid-sized tower might prove to be a challenge.

Nonetheless, this high-end card gives you top-end power for the 9-series, with performance and easy overclocking tools that should satisfy the enthusiast. –*Billy Joe I. Allardo*

Powerful GPU made better with faster clocks.	
Graphics engine:	Nvidia GeForce 9800 GTX
Bus standard:	PCI-Express x16 2.0
Video memory:	512MB DDR3
Memory interface:	256-bit
Maximum resolution:	2560x1600
Engine clock:	755MHz
Memory clock:	2.35GHz
Connectivity:	DVI (2), S-Video
3DMark 2006:	8575 (1024x768), 8400 (1440x900)
FEAR (Direct3D 9.0c):	151 (1024x768), 137 (1440x900)
Company of Heroes (DirectX 10):	48.5 (1024x768), 44.6 (1440x900)
Engine clock:	830MHz
Memory clock:	2.47GHz
3DMark 2006:	8668 (1024x768), 8460 (1440x900)
FEAR (Direct3D 9.0c):	154 (1024x768), 144 (1440x900)
Company of Heroes (Direct 10x):	49 (1024x768), 47.2 (1440x900)

Performance Card Comes with Smart Cooling
ASUS EN9600GT MATRIX P9,700
www.asus.com

WITH the MSI 9600GT Hybrid Freezer featured last issue, we mentioned that PC hardware manufacturers are starting to churn out more devices that feature unique cooling mechanisms designed to produce less heat through an intelligent power design. Asus has been in the forefront of this push, as manifested by the motherboards they have been releasing to the market lately.

Like its MSI counterpart, there is no doubt that the most noticeable feature of the Asus EN9600GT Matrix is its cooling mechanism. It initially imbibes an air of seriousness, thanks mostly to its solid black color and angled edges. The cooling kit also features a set of aluminum fins circling the fan and large heat pipes protruding on top.

The thermal control scheme present on the Asus EN9600GT Matrix is very much similar to the one with the MSI 9600GT Hybrid Freezer. When running an application that requires minimal graphics processing, the card will shut off the fans and rely solely on passive cooling via the heatsink. The fan will only activate once the graphics requirement picks up and the temperature rises. An intelligent hardware monitoring application makes this procedure possible.

However, what separates the two aforementioned dual-slot graphics cards are the affixed connectivity ports. The Asus 9600GT Matrix just has a single DVI port as compared to the two on the MSI 9600GT Hybrid Freezer. Yet the Asus