

■ NETWORKING PLUS ■

The Evolving Router

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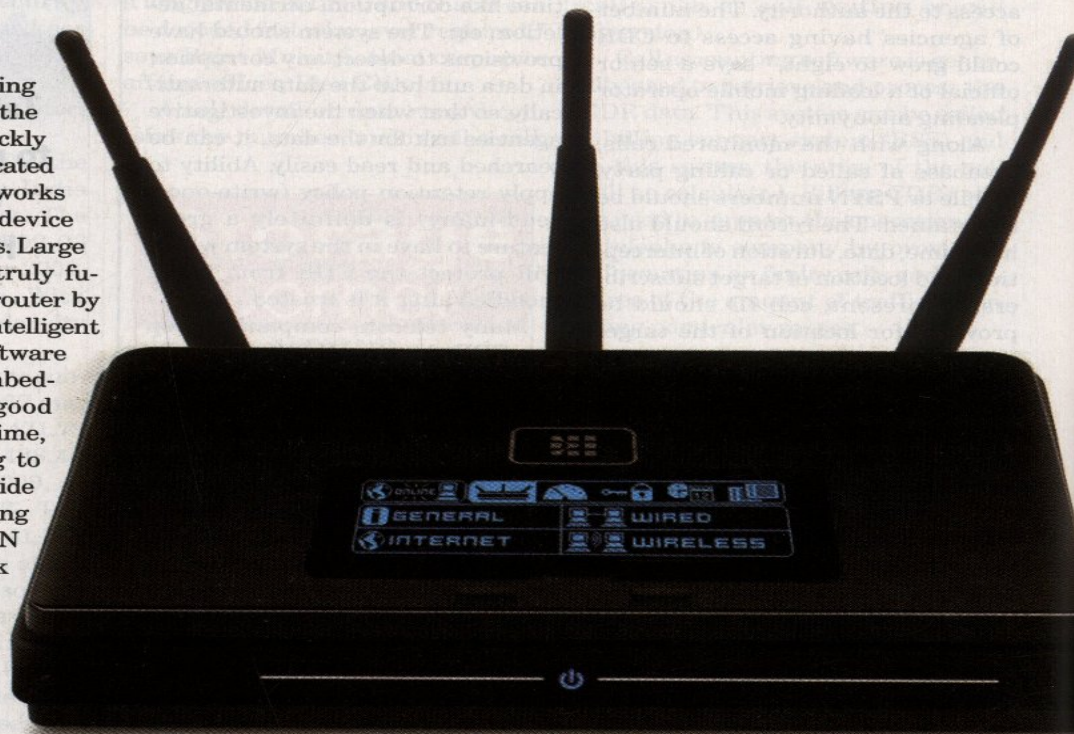
Adapting to the changing needs of enterprises, the network router is quickly evolving from a device dedicated to connecting disparate networks to an integrated services device capable of multiple functions. Large enterprises are seeking a truly futuristic approach for their router by moving towards deploying intelligent and optimized hardware/software platforms to guarantee embedded security, VPN, and good performance. At the same time, enterprises are also trying to enable their router to provide other services such as covering VoIP, videoconferencing, WAN optimization, and network analysis.

Given the boom in the Indian telecom space, carrier class router, with the capability to handle and route data in terabits will be piloted and deployed. IPv6 enabled router, access control by integrating the router with dedicated anti-virus, IDS, IPS device, bandwidth bundling/load balancing with multiple Internet links are some of the recent trends in the router space. WAN is becoming

a compelling need for banks, consumer companies, government, and IT service companies. And, routers have a critical role to play as far as wide area connectivity is concerned.

Changing With the Times

Few years back routers were only meant and used by enterprise players, and they were complicated to configure and maintain. As times changed, there were many tech-



nologies that evolved. And in the 80s people started using dial-up modems with basic routing facilities, but they were really slow.

Secondly, the use of computers was limited. Since the 90s, when the IT market became a booming one, Internet started becoming affordable and cost of PCs/laptops started coming down. Thus, more people started to buy computers. Then they needed to have networking between them as well as some remote connections. 2000 onwards this trend spread like fire.

“As people had many computers and wanted to communicate with the Internet world, they needed a device which could communicate efficiently to and fro, and hence demand of router started picking up,” says Rishi Samadhia, executive director, channel, Zyxel Technologies.

But today the role of the router is evolving from mere ‘simple boxes for data transfer’ to a ‘single device with multiple functions’. By installing a complete solution and managing it centrally, companies are protecting valuable corporate data using multiple types of protection such as encryption, firewall filtering, anti-virus protection, and intrusion detection and prevention.

Organizations are increasingly deploying integrated services routers, or sophisticated network routers that can deliver voice, video, data, and Internet access, wireless, and other applications. Growing companies, especially those opening new offices, are taking advantages of integrated network router solutions that are highly secure, flexible, and built to be compatible with future technologies.

Fresh Demands

Businesses today demand more from their network than ever before. Networks today need to support all forms of media, including data, voice, and video to enhance business communications and lower operating costs. Access has also changed, as thousands of new devices connect to



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—Prem Nithin, senior technical consultant, Cisco, India & SAARC

the network via wireless and wired connections.

To solve these pressing challenges, organizations need their networks to contain intelligence and play an active role in integrating applications in a way that is easy to manage. Now most enterprises demand multi WAN router with failover and load balancing, integrated security, bandwidth management, ACL, etc. At the same time they are cost-conscious as well as aware about the technology.

According to Subhashini Prabhakar, chief technology manager, Dax Networks, “End users demand products with high throughput along with features such as multi-casting, multi-protocol label switching (MPLS), IPv6 compatibility, hot swappability, content processing, VPN, firewall, load balancing, and access security. Manufacturers are striving towards bringing down customers’ total cost of ownership, and emphasize on providing enhanced product reliability and better their service strategies.”

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“Ethernet based services undoubtedly will hold up better than other communication services during the global recession”

—Subhashini Prabhakar, chief technology manager, Dax Networks

Security is another major area attracting the attention of enterprises. Networks are expected to offer increased and diverse functionality as organizations face the demand for increasing scalability of their infrastructure, the need to integrate new complex technologies, challenges of new and daily threats from hackers and viruses, and the escalating costs of system integration. Organizations need to find ways to increase the agility needed to respond and capitalize on change, while decreasing costs.

Meeting these challenges require sophisticated systems and tools that deliver greater capability with less complexity. The network plays a crucial role because it touches everything from end users to middleware, services, applications, and servers. Owing to the increasing security threats in the recent past, buyers are going in for routers with reliable attack protection and hacking protection solution. Routers that separate the routing and forwarding functionality are in demand for they reduce the risk of downtime.

According to Prem Nithin, senior technical consultant, Cisco, India and

SAARC, "Network security must be pervasive and integrated into the fabric of network infrastructure itself. The network becomes the main point of control for preventing and responding to security threats from internal and external sources. An integrated strategy includes multiple types of protection, and dramatically improves the ability of network to identify, prevent and adapt to security threats. Such a system helps to ensure information privacy, protect against threats, and control access to corporate resources."

Emerging Trends

Globally and in India, the market is moving towards integrated devices with built-in capabilities. Today, vendors are introducing routers that have the capability to integrate key features. Wireless capabilities are also popular, replacing the need of separate wireless access points for small office networks. Security is a big focus area. With large telecom players attempting to differentiate themselves, gigabit and terabit routers are expected to gain popularity among Indian customers. Also with their broadband initiative un-

derway, vendors are offering a new category of broadband routers to service providers.

The increasing data usage in the mobile networks, particularly the third generation ones, as well as the growing acceptance of fiber-to-home

Fresh Demands

Integrated security: Network security must be pervasive and integrated into the fabric of the network infrastructure itself. The network becomes the main point of control for preventing and responding to security threats from external and internal sources.

IP communications: Voice, video, and other types of data are woven into a converged network. IP communication which includes IP telephony as well as unified messaging and voicemail, customer contact applications audio, web conferencing tools—demonstrate the power of an intelligent network.

Wireless: An intelligent network provides the framework that enables wireless LAN solution to take full advantage of the existing tools, knowledge and resources of wired infrastructure to address critical wireless LAN security, deployment, and control issues.

IP based voice, wireless and security: These is a new wave of advanced applications that are beginning to powerfully change the ways in which businesses operate.

and fiber-to-curb and other options of optical connectivity, has opened new avenues for the router market. Also, many service providers are building large networks to increase their capacity to support residential triple-play service, that has necessitated the use of routers to handle voice, video, and data streams in massive volumes. The Indian government's e-governance initiative is likely to drive the demand for routers, especially IPv6 and IPv4.

An Evolving Future

There is a huge possibility to grow in this segment, Internet cost will further come down, high-speed Internet is still out of reach of the common man. More than 80% of the population does not own computers.

The near future would be marked by carrier Ethernet, escalating bandwidth usage, and growing subscribers, besides upgrades and replacements. Service providers are likely to steer the future growth, as

in the past, providing a huge opportunity for the global router market. Routers comprise an essential part of the next generation networks.

Commenting on the future, Subhashini Prabhakar of Dax Networks says, "Ethernet based services undoubtedly will hold better than other communication services during the global recession due to their performance price advantages compared to legacy solutions, but Ethernet services growth rates will be more modest, and that will translate into some delayed sales of carrier Ethernet platforms."

Historically, adding a new application, such as wireless networking, IP voice or IP video with end-to-end security meant adding more devices and more costs and complexity to the network. Hence vendors are expected to come up with

integrated service routers combined with data, security, wireless networking, and voice and video services into a single, resilient platform that delivers secure, concurrent applications as fast as business can operate. By providing multiple services with a single platform, integrated services routers provide a one-stop solution for small offices, branch offices, and tele-workers.

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