![Bezeq logo]

Launch of the IP VPN project

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Bezeq and Cisco to cooperate in setting up infrastructure for providing IP-VPN services

Ilan Biran, CEO of Bezeq: "Launch of the IP VPN project is a milestone for Bezeq in consolidating its status as a quality and advanced communications provider specializing in innovative services"

Bezeq and Cisco signed a joint venture agreement today for setting up an advanced communications infrastructure for providing IP-VPN services to the business sector in Israel.

Under the agreement, the two companies will set up a new communications network in MPLS technology - one of the most advanced in the world. . The network, which is separate from the public Internet network, will be used to provide virtual private network services on an IP infrastructure for the entire business sector in Israel. Binat Communications has been selected to supply and support Cisco equipment for the project.

The infrastructure will provide businesses and organizations with communications between their branches and will connect them to suppliers, customers and employees who are outside the organization, in a secure link on a united IP communications infrastructure. This innovative infrastructure will enable the provision of advanced services adjusted to the customer's needs, which will lead to an improved business model and a considerable decrease in the organization's operating expenses. In the future, Bezeq will also be able to offer its customers telephony and video-file transfer services on the same network.

Ilan Biran, CEO of Bezeq, said that the agreement with Cisco is an important milestone in the company's activities in adopting advanced

technologies and upgrading services which it offers its customers, particularly the business sector. "The integration of IP-VPN in Bezeq's systems will strengthen the status of the company as a provider of quality and advanced communications that strives to offer its customers solutions and applications which meet their various requirements."

Michael Ganzer, Senior Vice President at Cisco EMEA and in charge of communications operators, said that the agreement with Bezeq is an important part in a series of business successes at Cisco in Europe involving the upgrading of services offered by veteran communications providers such as Bezeq.

"Cisco sees Bezeq as a long-term strategic partner. Signing this agreement is an important step for Cisco in deepening its hold in the Israeli business market," said Gary Drotin, the CEO of Cisco in Israel.

"For us, this innovative network is a big engineering challenge, which will bring front-line technology to Bezeq services. IP-VPN technology will enable us to provide our customers with a complete solution of new, high-speed services on IP - which is the natural protocol for them," said Paul Weissbach, Deputy CEO and Vice president for Engineering and Planning at Bezeq.

"IP-VPN services will enable Bezeq to provide a comprehensive solution for the business customer, while increasing bandwidth and offering various levels of service. The new service will ensure optimal flexibility for network expansion, both within customer branches all over the country and between the customer and its customers and suppliers. IP-VPN also means linking the network to the homes of employees, and all at low cost," said Pnina Shenhav, Vice President for Sales and Marketing.

About IP-VPN
IP-VPN services in MPLS technology came into the communications world about three years ago, and since then has been in the fast track as the leading technology for providing complete and advanced communications services for businesses.

According to the survey carried out by Infonetics Research in May 2002, the size of the global **IP-VPN** market (equipment + services) is expected to increase from about 23 billion dollars in 2002 to about 35 billion dollars in 2003 - an annual increase of 50%.

The technology grew out of an aim to combine the advantages of two communications worlds: ATM and frame relay, which supports service quality for the customer but is somewhat lacking in the connection to end applications; and IP, which does not guarantee any service quality but excels in operational simplicity and provides natural support for almost all business end-applications. The result is a united IP

service, easy to use, which supports a range of needs of all end applications.

The technology enables service providers all over the world to offer their customers a flexible service managed according to their needs, while making a commitment to Quality of Service and support of all types of applications (voice, video, for data bases, file transfers, etc.). The service to the customer is provided by means of a single communications line that supports all the properties required for providing the entire range of service features.

About Bezeq

Bezeq is the largest communications company in Israel and one of the world's leading companies in advanced customer services, which are based on a digital technology infrastructure.

Bezeq and its subsidiaries offer a range of services, from domestic and international communications, data transfer high-speed Internet, Intranet for the business market, mobile telephony, and advanced services and communications equipment.

About Cisco

Cisco Systems (www.cisco.com is the leading supplier for interconnect products and providing end-to-end communications solutions. Cisco, established in 1984 by a small group of computer scientists from Stanford University, has grown into a vast corporation with 38,000 employees, with its products currently making up 88% of the world's Internet infrastructures. Its revenue in 2002 amounted to approximately 20 billion dollars. In 1997 Cisco set up its Israeli development center in Netanya. The center works in full cooperation with Cisco's European office, which is responsible for the company's marketing activities.

IP-VPN-TECHNOLOGICAL REVIEW

About IP-VPN

IP-VPN (Internet Protocol - Virtual Private Networks) based on MPLS technology (see below, under "About MPLS") penetrated the world of communications about three years ago, since then it has been on the fast track as the leading channel for providing complete and advanced communications services for businesses.

According to the survey carried out by Infonetics Research in May 2002, the size of the global IP-VPN market (equipment + services) is expected to increase from about 23 billion dollars in 2002 to about 35 billion dollars in 2003 - an annual increase of 50%.

The service grew out of an aim to combine the advantages of two communications worlds: ATM and frame relay, which supports service quality for the customer but is somewhat lacking in the connection to

end applications; and IP, which does not guarantee any service quality but excels in operational simplicity and provides natural support for almost all business end-applications. The result is a united IP service, easy to use, which supports a range of needs of all end applications.

Unlike frame relay or ATM, which provide connectivity between predetermined and fixed end points, IP-VPN service provides "any to any" connectivity between all the end points defined in a VPN. The connectivity is achieved by means of MPLS technology, which creates a communications platform in a connectionless architecture in layer 3 (of the 7-layer model), which gives the solution flexibility and scalability. In addition, on the basis of the customer's requirements, the service includes an built-in ability of securing and supporting QoS (Quality of Service) depending on the type and needs of the application.

MPLS-based IP-VPN services differ from the earlier generation of IP-VPN services, which are provided on the public Internet infrastructure and are based mainly on an encoding technology used in the terminal equipment.

IP-VPN service allows service providers all over the world to offer their customers a flexible service managed according to their needs, while making a commitment to Quality of Service and support of all types of applications (voice, video, for data bases, file transfers, etc.). The service to the customer is provided by means of a single communications line that supports all the properties required for providing the entire range of service features.

About MPLS

MPLS - Multi protocol Label Switching is a standard technology that grew out of a number of proprietary technologies: Cisco's Tag Switching, Toshiba's CSR (Cell Switched Router) and IBM's Aris.

In an MPLS network, a label is attached to every data packet the moment it enters the network. The label provides information and instructions for the routing and handling of the packet as it flows through the network. With this method, there is no need to open the packet (as was the case with the classic routing technologies), merely to look at the label. This method cuts down the delay significantly in every switch or router along the way, making much higher speeds possible for data transfer.

QoS - Quality of Service is made possible by managing different types of traffic by means of advanced techniques of traffic and queue management. It enables different handling (both in routing and in prioritizing for transit in the network) for several Classes of Service (CoS).

Data packet transfer routes in the world of MPLS are called Label Switch Paths (LSPs), which are generated by service providers for various purposes, such as meeting QoS targets, load by-pass routing in the network, or creating tunnels for private IP networks for the service's customers. There is no great difference between an LSP and the Virtual Connections from the world of ATM or frame relay, but the main difference is that LSP is not dependent on the Layer 2 technology which supports it.

MPLS technology has two main advantages:

Traffic Engineering - The ability to determine a certain route according to the different types of traffic, so as to support a range of applications with different needs (CoS), such as video, voice, link to data bases, file transfer, e-mail

VPN - Service providers can set up IP tunnels in the service network for their customers, without need for special terminal equipment at the customer's site and without needing to use encoding abilities in the network.

MPLS-based IP-VPN
Because of MPLS's ability to create tunnels for IP traffic, it is only natural to use then to create virtual private networks (VPN) for customers. A number of standards have been set for providing MPLS-based VPN service, the most widespread of which, among the service provider, is RFC 2547.

Is MPLS-based IP-VPN secure ?
IP-VPN traffic on the MPLS network is isolated by using a unique label which defines the particular type of traffic. This class of separation is the same for ATM- or frame relay-based service networks. However, as part of the service, advanced security abilities can be added, such as identification, protection and encoding to the end stations, as per customer needs.

IP-VPN CoS (Class of Service)
One of the most significant abilities of MPLS-based IP-VPN service is support of a number of CoS, in accordance with the requirements of the various applications. IP-VPN service enables support of all types of customer applications, which can usually be divided into three main types:

Real time- such as voice and video, which are sensitive to delay and jitter.
Mission critical - such as CRM and ERP, which are sensitive to delay.
Non-critical - such as file transfer and e-mail.

All three types of CoS to the customer are supported by means of a single access line, which greatly facilitates the provision and use of the service.