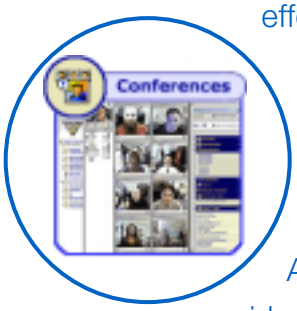
Intel® and VirtualDesign.Net*

Unique collaboration results in secure multi-point video collaboration solution

VirtualDesign.Net's *Virtual-WorkSpaces is a collaborative communication tool that deploys multi-point video and full-duplex audio securely and affordably—over the public Internet. It's a technical advance made possible by networking products from Intel.**

VirtualDesign.Net founders recognized the market demand for economical, real-time collaboration on an international scale. Their goal was the creation of tools allowing work teams to collaborate effectively, and the creation of shared workspaces where teams could meet and work together. To make this possible, VirtualDesign.Net developed a closely-linked network of collaborative workspaces, using Intel virtual private networking (VPN) technology to implement the solution without expensive proprietary hardware or dedicated lines.



A key component of Virtual-WorkSpaces is multi-point video conferencing, which allows work groups to replace audio conference calls with multipoint, desktop-to-desktop video conferencing. Moving video conferencing to the desktop allows participants to be surrounded by work tools like a multi-format file viewer, project management tools, version and layering controls, and a complete scheduling and calendaring toolset.

New Style of Collaboration Demands Advanced Networking

The product's network topology, tightly coupled with Intel® VPN products, allows real-time collaboration on shared documents, threaded discussions promoting dialog on critical issues, plus secure file sharing and storage.

Multi-Point, Multi-Cast Video Challenges Networks

During initial design stages, VirtualDesign.Net engineers were uncomfortable with the prospect of handling multi-point, multi-cast video conferencing on the LAN or Internet with standard routers. Due to their concern about security, they were convinced that VPN was the right solution. While searching for the right tunneling technology, they experimented with a variety of hardware and software options. New concerns arose over dropped packets, stagnant performance, and standards support for forwarding multicast traffic.

Choosing Intel VPN Products

According to VirtualDesign.Net Director of Marketing, James Lee, "It was inevitable that we'd end up working with Intel. Their VPN product offered a high quality, cost-effective solution. Plus, the solution required no modifications to application code, and therefore provided a plug and play solution."

VPNs allow Virtual-WorkSpaces users to collaborate in real time, taking full advantage of broadband connections while maintaining robust security. Intel VPN products enable VirtualDesign.Net to deliver encrypted packets at broadband speeds—at a price that makes its new product affordable for small businesses and branch offices.

For companies connecting multiple locations across a WAN, integrated site-to-site VPN enables the creation of secure tunnels between LANs across the Internet, and also eliminates the need for buying dedicated lines.

A VPN tunnel lets VirtualDesign.Net customers take advantage of the Internet for enormous cost savings over long distances. Since a single Internet connection can be used to link multiple clients or business sites as needed, customers realize significant savings by not buying dedicated hardware or leased lines. VPNs combine many of the advantages of PPP, dial-up and mesh network connections. They also add a layer of abstraction above the level of the WAN service protocol, which makes it easy to integrate traffic of different WAN protocols.

Going Remote With VPN Client Software

Understanding the needs of their customers, VirtualDesign.Net developers knew that the product would not be fully realized until it could be accessed by remote users. To make remote, multi-point video conferencing possible over the Internet, the obvious next step for VirtualDesign.Net was VPN client software, which would enable the product to be portable and universal.

For their remote access VPN solution, VirtualDesign.Net once again chose the Intel VPN Gateway Family, which features an Intel processor, protected OS kernel and optional hardware acceleration.

Each Intel VPN Gateway comes complete with Intel® VPN Client software. From a desktop or laptop, the Intel VPN Client offers encrypted tunnels for transferring mission-critical information securely via the Internet while maintaining overall network performance. Intel VPN Gateways support the high throughput of VirtualDesign.Net's product, allowing thousands of simultaneous subscriber connections and dozens of concurrent, fully-utilized broadband sessions.

"Because Intel's VPN products provide full authentication, data encryption, routing and firewall features, we get the VPN performance we need while still keeping our product costs down," Lee says.

The Right Performance Levels

VirtualDesign.Net's network topology requires VPN support for remote access, LAN-to-LAN and LAN-to-WAN applications. Drawing on Intel's scalable family of VPN products, the company is able to offer customers the right performance levels to meet their specific requirements. Flexible options and an array of usability features make it easy to lower the cost of connectivity in a variety of situations.

"High-availability configurations allow us to deploy multiple units for extra reliability," Lee notes, "while client load balancing across multiple VPN Gateways lets us add capacity and optimize performance."

Internal developers at VirtualDesign.Net were impressed with the gateway's automated management and deployment. Automated client DNS with a point-and-click tunnel launcher lets their users create fast connections from all types of remote locations. Transparent security parameter negotiation enables clients to automatically receive a pre-configured key length, tunnel type, and secure network configuration for maximum adaptability.

Managing the VPN is made easier for users by tunnel status monitoring, which ensures each end of the connection is active. NAT Firewall traversal, which allows the gateway to be placed in multiple network configurations behind a general-purpose firewall, keeps operations simple.

The Intel VPN Client interoperates with industry-standard authentication and authorization schemes to deliver seamless connectivity across a wide range of last-mile technologies. Remote videoconferencing becomes possible for telecommuters, who can access the application via DSL and other broadband connections, increasing the maximum speed of the connection from 56kbs to 500kbs, more than nine times faster than an analog-modem connection allows.

Using Internet-based VPN as its solution, VirtualDesign.Net added cost-effective remote access and heightened security to its product, which now provides the speed and performance required for multi-cast video conferencing.

The VPN Solution of Choice

Lee recalls, “Choosing Intel was obvious—it was the best product we knew. Intel offered VPN solutions right out of the box, and was a clear leader in both price/performance and ease-of-use. They had the answer that matched our problem.”

“The Intel VPN Gateway Family offered us complete, end-to-end VPN for remote access and LAN-to-LAN connectivity via IP networks. And for users working from home, it gave us high-speed, scalable performance for fast Internet connections such as cable and DSL,” Lee said.

“Building VPN multi-cast tunnels between intranet clients and the remote VPN gateways was critical to our application, so we went straight to Intel and asked for their help.” Intel set to work, combining their expertise with that of the VirtualDesign.Net engineering group.

Doing What the Competition Can’t

“We actually set up a mock-up of the network at Intel’s labs in Toronto,” Lee recalls. “The Intel engineers worked closely with us, just to make sure it could handle multi-point video conferencing.” As a result, Intel was able to offer an unprecedented new product capability to VirtualDesign.Net.

Today Intel is the only VPN systems manufacturer offering customers this solution-based functionality. While a handful of vendors are able to pass multicast traffic through site-to-site VPN tunnels, none do it as easily as Intel, and none have this capability on their VPN Clients.

"It means we can do things the competition isn't doing," says Lee. "We've got a unique product that enables multicast videoconferencing over the Internet—a medium that does not easily lend itself to that. And on top of that, we did it in a short period of time, only 70 days from nothing to the first software tunnel. It was phenomenal."

After beginning product development in August 2001, VirtualDesign.Net was able to complete its new remote solution, Virtual-WorkSpaces, by November and introduce it with suitable fanfare at December Comdex. They began shipping in January 2002.

Today, Virtual-WorkSpaces enables anyone, anywhere in the world, to install and activate video-conferencing software in a collaborative workspace. Taking advantage of Intel VPN technology to make remote conferencing secure and affordable, users with Internet access can take command of their tools from anywhere on the planet.

Intel VPN Products

Intel develops and manufactures a complete family of VPN products, meeting the needs of small-to-medium businesses, large enterprises, and service providers. These products currently include system-level gateway appliances and management software available through OEMs around the world.

Intel is a leading building block provider to the VPN market segment. Intel's building blocks are available to OEMs at multiple levels of integration, including software, boards, and systems. For more information regarding Intel's VPN systems and building blocks, or for a list of OEMs selling Intel-manufactured VPN systems, visit http://developer.intel.com/design/network.

For more information on VirtualDesign.net and the Virtual-Workspaces product, visit http://www.virtualdesign.net.

* Other names and brands are the property of their respective owners.

Part# NP2133