

ITG

Industry: **Financial Services**

Application: **Secure Remote Access & Business Continuity**

Product: **Array SPX**

Challenges

- Deploy a secure remote access solution that retains the performance and layer three connectivity attributes of a dedicated IPsec VPN, while improving security, accessibility and ease of deployment
- Deploy a secure remote access solution that not only handles day-to-day secure remote access requirements, but also is in a constant ready state - able to absorb the entire workforce if needed for business continuity purposes
- Achieve stated requirements as cost-effectively as possible

Solution

- Array Networks SPX

Benefits

- Clientless anytime, anywhere SSL VPN access with both application and network level connectivity and granular access control
- Performance and scalability to support entire workforce on a single platform while maintaining single digit millisecond latency
- Business continuity architecture that requires no actions on the part of IT during an emergency or unplanned event
- Array Business Continuity (ABC) flex license plan allows ITG to pay for excess capacity after an event and to the degree needed - not up front

Array Networks SSL VPN Business Continuity: ITG and the New York City Transit Strike

Investment Technology Group, Inc. is a specialized brokerage and technology firm that partners with clients globally to provide innovative solutions spanning the entire investment process. A pioneer in electronic trading, ITG has a unique approach that combines pre-trade analysis, order management, trade execution, and post-trade evaluation to provide clients with continuous improvements in trading and cost efficiency. The firm is headquartered in New York with offices in North America, Europe, and the Asia Pacific regions.

The Challenge

ITG serves the most demanding of institutional investors, helping them get optimal prices for securities, route orders to desired markets, and manage the cost of trading – all in real time. For ITG, the ability to provide uninterrupted services is imperative.



Post 9/11, the prospect of unforeseeable incidents impacting business operations has become increasingly real. In addition to terrorism, other scenarios including epidemics and natural disasters are of equal concern. If business were to be significantly interrupted, ITG would not only suffer lost productivity and revenue, they would also be subject to substantial costs triggered by officially declaring a BCP event. ITG's executive team and IT department quickly recognized the need for solutions that would ensure business continuity in the face of unanticipated events.

In order to ensure business continuity, employees need to be able to communicate, access business critical applications and resources, and execute transactions – regardless of location or circumstance (i.e., not being able to get to the office or the office no longer functioning).

The Need

Meeting the challenge requires a fully-featured remote access solution with:

- Performance and capacity to support an entire workforce if necessary
- Ubiquitous, fast and simple access method that:
 - Requires minimal training and is easy to use under emergency conditions
 - Does not require any actions from the IT department when disaster or unplanned event strikes

Array SPX SSL VPN

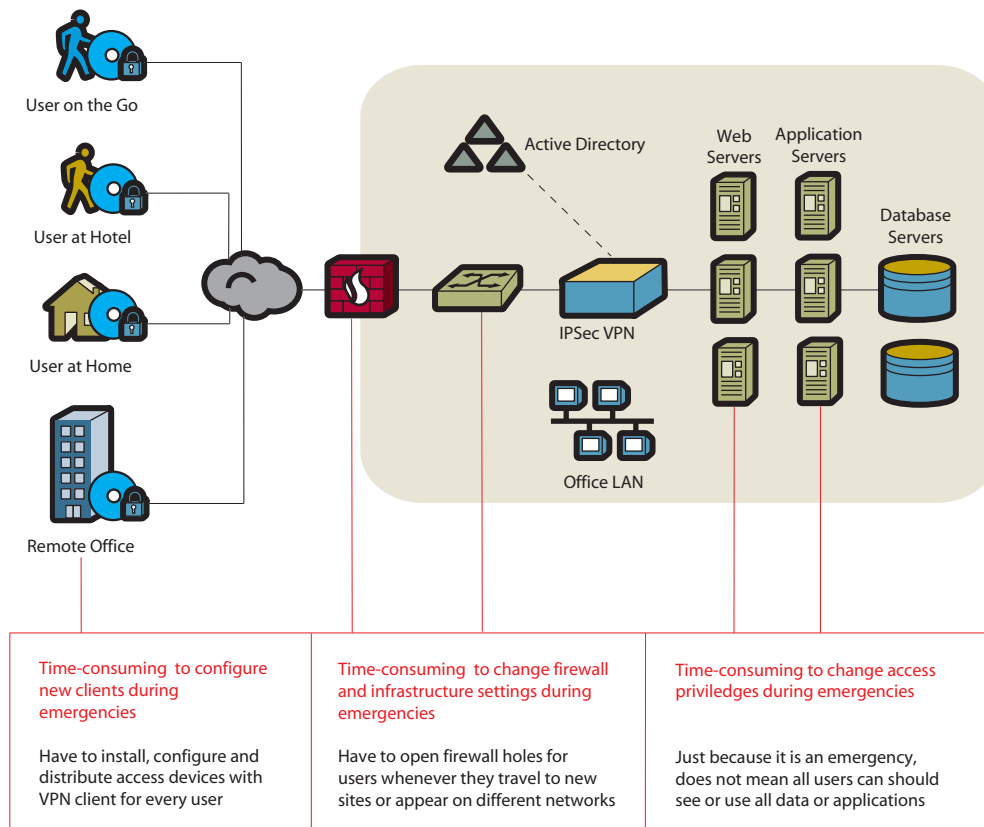


Previous-Generation ITG Remote Access Solution

Previously, ITG deployed an IPSec VPN solution to provide secure remote access for home workers as well as mobile employees to a broad range of applications. While IPSec delivered the encryption capability and capacity to support ITG's expanded business continuity planning initiative, it was quickly eliminated as a potential BCP solution for several key reasons:

- IPSec requires the pre-installation of "fat" VPN clients on each and every access device seeking to connect remotely to the corporate network
- It is not economically feasible to purchase user licenses and access devices, then configure "fat" VPN clients for every user "just-in-case"
- If each user had a dedicated IPSec-enabled access device, there is no assurance the device will be on hand or accessible when disaster strikes
- Lack of granular access controls gives every user full network access during a vulnerable and chaotic time period, increasing the likelihood of a security breach

Figure 1: IPSec Operationally Unfeasible for Business Continuity Planning

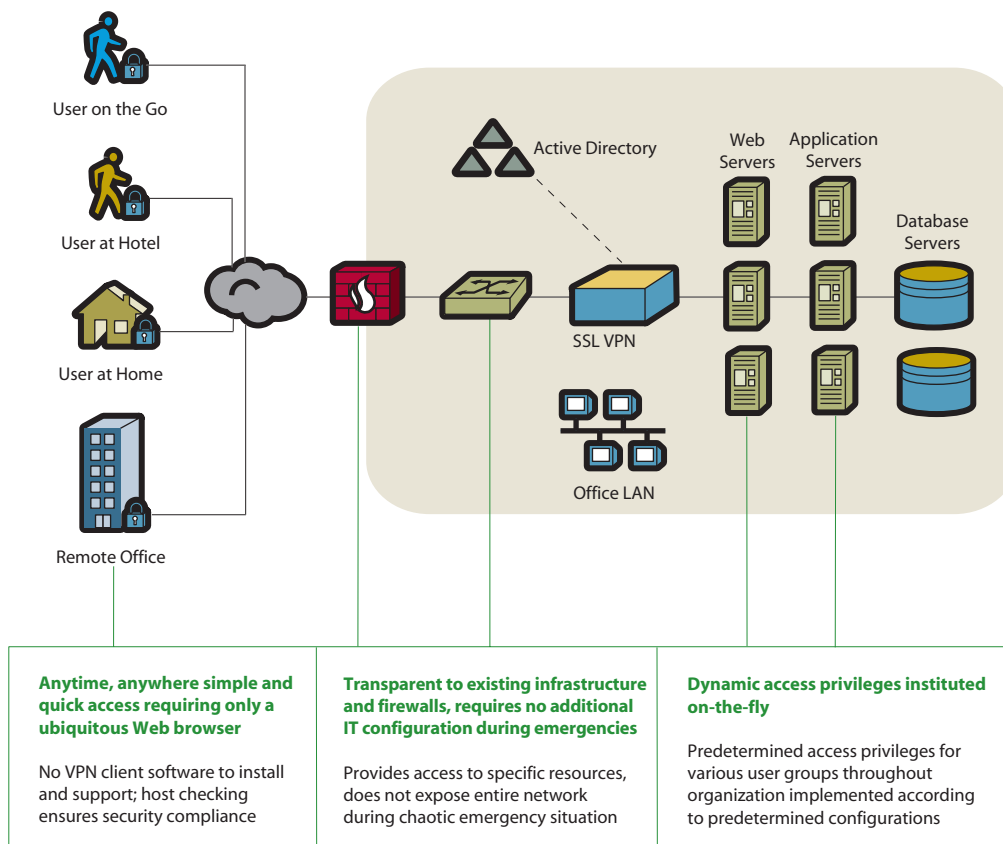


SSL VPN: The New Choice for Secure Remote Access

Clearly needing a more capable solution in order to meet their remote access and BCP requirements, ITG explored new-generation SSL VPN solutions. In contrast to IPSec, SSL VPN affords the following key benefits:

- Users need only a common Web browser on any Internet capable device to gain access
 - Eliminates the need for corporate issued access devices and associated pre-installation of “fat”VPN clients
 - In the event of emergency, users do not need to locate corporate issued access device; any Internet device provides needed functionality
 - Simplicity and ubiquity of browser-based access ideal for first time user login under stressful circumstances
- Transparent to existing infrastructure; no need to open holes in firewall to allow for VPN tunnels
 - No configuration bottlenecks during time-critical emergency situations
- Provides both layer 7 application access and layer 3 full network connectivity with granular access control - meeting and surpassing IPSec connectivity standards while maintaining a higher level of security for both day-to-day operations and emergency situations

Figure 2: SSL VPN Satisfies Many Key Requirements for Business Continuity Planning



Limitations of General Purpose SSL VPNs for Business Continuity Planning

SSL VPN, it seemed, was the answer for ITG's remote access and business continuity planning requirements; but things were not that simple. The majority of SSL VPN solutions considered by ITG had the following limitations:

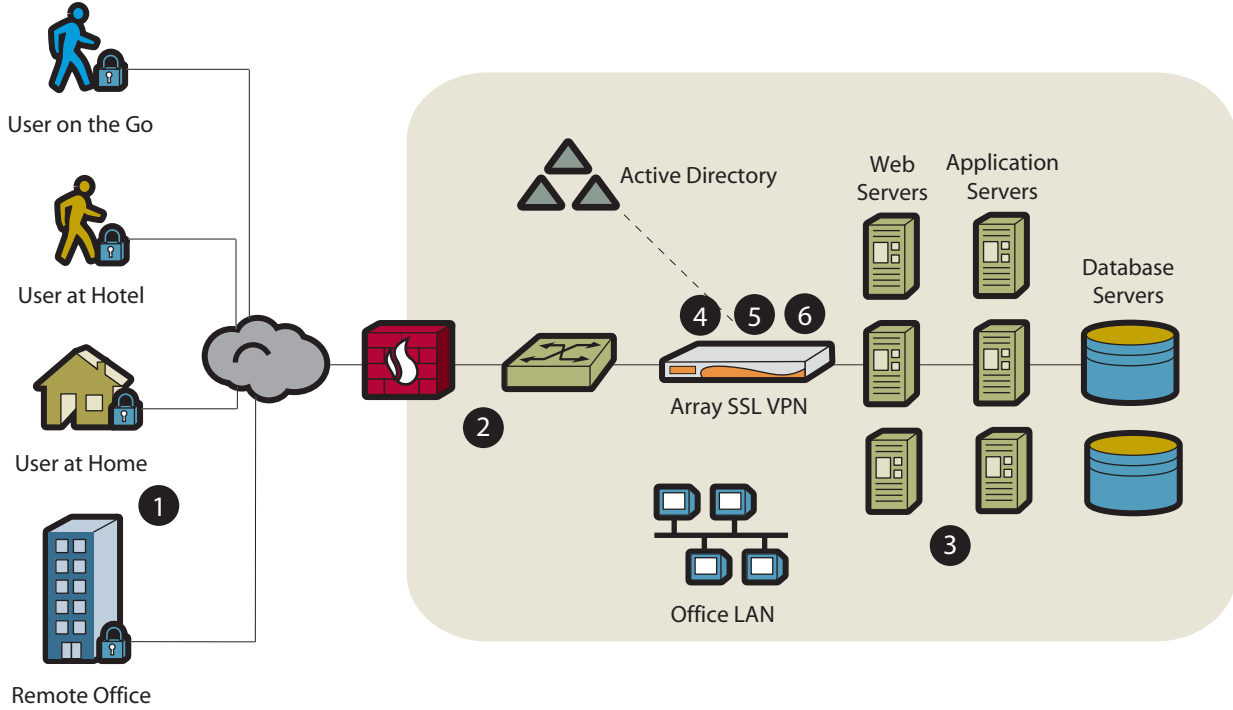
- Primarily designed for secure remote access, typical SSL VPN solutions are designed to support only a small fraction of the total workforce
 - In order to gain enough capacity to support their entire workforce in the event of an emergency, ITG would have to purchase an expensive hardware platform or multiple hardware platforms that far outstripped their day-to-day secure remote access needs
- Many SSL VPN vendors claimed to support many hundreds or thousands of concurrent users
 - Evaluations, however, showed performance and usability suffered or failed as the systems were pushed to simulate disaster scenarios

Array Networks SSL VPN Business Continuity Planning Solutions

Of the vendors ITG considered, Array Networks was able to overcome the limitations inherent in most general-purpose SSL VPNs - providing the capabilities needed to transform SSL VPN from a strict secure remote access technology into a true business continuity planning solution:

- Superior capacity. Compared to similarly priced platforms, Array's platform supported multi-fold more concurrent users on a single platform
 - ITG was able to purchase a hardware platform from Array that was priced consistent with their day-to-day usage requirements, which could also absorb their entire workforce in the event of emergency
- Proven single-digit millisecond latency for maximum concurrent users
 - Array Networks was able to demonstrate to ITG that, unlike other SSL VPNs, Array systems retain single digit millisecond latency for all users for any mix of access modes when the system is supporting maximum concurrent users
- Fully autonomous solution does not require action on the part of IT during an emergency
 - During an emergency, there is no assurance that the IT staff will be in a position to enact emergency configurations. With Array, the SSL VPN is in a constant state, ready to accept ITG's full workforce
- Array does not require ITG to purchase large numbers of business continuity user licenses that go unused day-to-day
 - Array allows ITG to purchase a concurrent user license pack tailored to day-to-day needs, then charges for expanded business continuity use with flex licensing that bills for additional licenses for the duration they are needed

Figure 3: Array Networks SSL VPN Solution for ITG Business Continuity Planning



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| <p>1</p> <p>Anytime, anywhere simple and quick access requiring only a ubiquitous Web browser</p> <p>No VPN client software to install and support; host checking ensures security compliance</p> | <p>2</p> <p>Transparent to existing infrastructure and firewalls, requires no additional IT configuration during emergencies</p> <p>Provides access to specific resources, does not expose entire network during chaotic emergency situation</p> | <p>3</p> <p>Dynamic access privileges instituted on-the-fly</p> <p>Predetermined access privileges for various user groups throughout organization implemented according to predetermined configurations</p> |
| <p>4</p> <p>Performance and capacity to support full workforce on a single system</p> <p>No additional hardware needed to support BCP; all users receive single digit ms latency</p> | <p>5</p> <p>Fully autonomous and automated system requires no actions on the part of IT in even of emergency</p> <p>Ensures that business continuity plan is not dependent upon any persons or circumstances</p> | <p>6</p> <p>Flex licensing does not require the up front purchase of user licenses that sit idle on a day-to-day basis</p> <p>Expanded BCP usage is billed only for number of users on system for the duration of emergency event</p> |

ITG & Array Networks BCP Solution Tested: New York City Transit Strike

As part of its BCP process, ITG plans for scenarios where a significant number of employees are unable to commute to the corporate office. On December 20, 2005, the day of the New York City transit strike, ITG utilized Array Networks' new ABC Flex Plan to temporarily increase the number of user licenses for SSL VPN access. Those employees not able to travel to the office, responded as they had been trained; they stayed at home and logged in to the corporate SSL VPN portal, where they were able to access appropriate resources and and continue to conduct business. With the Array Networks SSL VPN functioning as intended:

- Every user that needed to log on was able to log on, each receiving a premium user experience
- No action was required on the part of ITG's IT department in providing secure remote access over the course of the event
- ITG was billed only for excess SSL VPN usage over the duration of the event
- ITG did not experience business disruption as a result of the transit strike

Summary

With Array Networks, ITG is now confident of its ability to provide unlimited remote employee access in the face of both planned and unplanned events. In Array SSL VPN systems, ITG has found a secure remote access architecture for business continuity that is operationally, technically, and economically feasible. Having proven its merits during the New York City transit strike, the Array SSL VPN solution provides ITG staff with the peace of mind that their business is prepared to meet the challenges ahead.

"Array Networks provided ITG with a secure remote access solution that not only facilitated uninterrupted day-to-day productivity, but provided a cost-effective solution against the effects of unplanned usage spikes. The Array SPX Series SSL VPN worked flawlessly during the recent New York City transit strike, and I am confident it will help us handle similar situations in the future."

*Steve Kass, Director,
Global Operations, ITG Inc.*



**The Performance Leader
in SSL VPN**