



Security Consulting Services

The team at Network Geographics has decades of experience developing large, secure and reliable systems. Our expertise can help your organization deal with research, design, and development in a number of areas.

- **Network Security** - We have developed and managed firewalls and IPSec gateways since near the time that both technologies appeared. We have worked with a wide variety security systems, ranging from enterprise hardware security appliances such as Cisco's ASA to open source systems such as netfilter and iptables.
 - **Design/Review** – We can help with the initial stages of design, or we can provide an expert's perspective to an existing network security architecture.
 - **Remediation** – You may have a reason to believe that your firewall is incorrectly implemented, but you do not know how to fix the problem. We can analyze your firewall implementation and determine how the firewall needs to be reconfigured. We can write/extend modules to make your open source system do what you need it to.
 - **Audit** – We can audit your network security implementation to ensure that it is operating within your organization's network security policy.
 - **Firewall Migration** – Replacing a firewall from one vendor with a firewall from another vendor can be very difficult because the configuration languages differ between vendors. We can create an equivalent configuration for the new device quickly and with high assurance that the two configurations will result in equivalently operating devices
 - **Training** – We can train your staff on new techniques for firewall configuration, remediation, and auditing.
- **Secure Software** - Our language breadth is far ranging from Lisp and Forth to Java, Perl, Python, C/C++, and embedded assemblers. We have developed enterprise class management systems, small tools, and embedded control software.
 - **Design/Review/Development** – We can help with the initial stages of project design, provide an expert's perspective to an existing software design. We can, or efficiently implement components of an existing design.
 - **Forensics** – Do you suspect that your software has been corrupted? We can inspect software and logs to give you evidence about the breadth of a malicious attack.
 - **Training** – We can train your team to boost them into new areas of technology or development process.
 - **Applied Cryptography** – Using cryptographic elements from standard libraries is relatively straightforward. Unfortunately, it is also very easy to compose secure cryptographic elements into an overall insecure system. We understand the components of cryptography and how cryptographic elements should be composed to create an overall secure system.



Key Team Members

Alan M. Carroll, PhD

Alan started programming as a young lad in 1972. He earned a PhD from the University of Illinois while building Epoch, the first windowed version of Emacs, and ConversationBuilder, a collaborative development environment. While a graduate student, Alan earned the campus wide TA of the year award for his teaching skill and dedication. He worked for a series of startups ending at Global Internet Software Group on a team developing Centri Firewall for Windows NT. Global Internet Software Group was acquired by Cisco Systems. At Cisco Systems, Alan led infrastructure development efforts in network security and policy management software until 2005. Since he has been exploring new product ideas in network security for Network Geographics. Alan is also interested in web-based software. He is the author of the widely used **MTAutoban** plugin for the Moveable Type platform.



Susan Hinrichs, PhD, CISA

After graduating from the University of Illinois, Susan worked for Addamax developing and testing a multilevel operating system before moving on to graduate school. Susan earned a PhD from Carnegie Mellon University studying communication optimization techniques for parallel systems. After graduation, she joined Global Internet Software Group and was one of the architects of Centri Firewall developing a secure network stack and an object store. At Cisco systems, she led efforts in policy-based security management with the Cisco Security Policy Manager and Firewall Management Center. Now Susan lectures on computer security at the University of Illinois in Urbana-Champaign and designs, develops network security analysis algorithms for Network Geographics. She has also been developing control software for Atmel-based embedded systems, and expanding and designing netfilter based network control systems.



Students and Interns

Network Geographics employs a variety of bright computer science and electrical engineering students from the University of Illinois at Urbana-Champaign. These students bring fresh insight into the problems of system security.