

# Network Engineering Professional Services

## Overview

Since 1997, SPK & Associates, LLC has been providing network engineering services to small, medium, and large enterprise customers. Whether your industry is Financial, Healthcare, or Manufacturing, SPK will start with understanding your business requirements and goals. We'll then Assess, Recommend, Implement, and Manage a solution that fits right for you.

### High Performance / Low Latency Networking

Whether you're building a complex financial trading application or running big data simulations, you require the latest in cut-through switching technologies. SPK has extensive experience with some of the lowest latency switches available today:

- Arista 7150 Series
- Cisco Nexus 3000
- Mellanox SwitchX

### Multicast Distribution

Integrating multicast data streams into a network is difficult -- Constant bitrates, many to many applications, as well as ensuring zero packet loss pose specific challenges. SPK's customers utilize multicast for a variety of use cases—HD video, cluster communications, and market data dissemination. SPK can help identify choke points as well as provide capacity planning to ensure that the network infrastructure meets the needs of the applications running on top of it.

### Software Defined Networking

Need to automate switch configurations to support a test lab environment or to provision new virtual machine networks? SPK can help you leverage DevOps across your network to increase efficiency and decrease deployment time & effort.

### Virtualization

Faster CPUs along with cheap commodity server hardware has led to some very dense virtual machine environments. Without the proper networking infrastructure to support it, IO bottlenecks are inevitable. SPK can help you size & architect a network that scales as your virtual machine farm grows.

### Wide Area Networks

Private MPLS, Metro Ethernet, and traditional DS-x circuits: SPK has experienced firsthand through its customers which vendors are the good, the bad and the ugly. Along with vendor selection guidance, SPK will take a holistic view of the entire network and identify where optimizations can be made in terms of cost, redundancy, and performance.

### Transport Security / Hybrid Cloud

Whether you're tying in AWS or Azure for a hybrid cloud deployment, or you're deploying a remote access solution to your users, SPK can help you implement a VPN solution and extract the best performance from it.





## Perimeter Security

SPK can help you implement, configure, and manage security policies for the following firewall platforms:

- Juniper
- Cisco ASA
- Fortinet

## Load Balancing

Beyond simply configuring F5 Networks load balancer pools, SPK can keep your website running non-stop with custom iRules scripts and in-depth health checks.

## Wireless

Experiencing wireless drop outs, slow throughput, or still dealing with insecure legacy solutions? SPK has experience with Aruba and Cisco wireless solutions and can help you implement a robust wireless infrastructure.

## Monitoring

Are you in a highly regulated industry that requires auditing capability? SPK can help direct and aggregate your network traffic into a capture mechanism.

- Layer 1 Switching / Optical Taps
- Packet Capture & Analysis
- Bandwidth Monitoring Tools

## Our Success Stories

### High Frequency Trading Company – 2009-Present

SPK helped the firm evolve with the latest in high speed networking technology to become one of the top US equities trading firms by volume. Their network spanned 5 different datacenters with over 25 networking devices under SPK management. SPK helped test, configure, deploy, and manage Ethernet technologies from 1Gbe in 2009 to 40Gbe today. The firm utilized optical taps, low latency NICs, lossless packet capture, and ptpd time synchronization.

### Medical Device Manufacturer – 2011-Present

SPK's customer had developed an inter-operating room product that utilized multicast video streaming. This product was initially developed in a controlled lab network that SPK had managed. As it was deployed to different hospitals, it was clear that each hospital presented their own unique network challenges. SPK was instrumental in providing different lab network scenarios, and troubleshooting customer production hospital networks. SPK provided many important lessons learned that the customer took to their next generation product.

### Medical Device Contract Manufacturer – 2014-Present

Another customer in the medical device space – SPK assisted them in migrating their on-prem data management application into the cloud. However, they wanted to retain Active Directory integration as well as secure back-end access to the servers. SPK created an AWS based virtual private cloud connected to corporate headquarters via an IPsec VPN tunnel. SPK helped work through issues regarding their SonicWall firewall and provided insight into their bandwidth usage using DataDog monitoring.

**For more information**

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