**Fast**

Mako Networks' Level One-certified PCI DSS certification is assurance for our customers that we constantly analyze and re-evaluate our security approaches, as well as have them audited by verified third party security experts.

VPN Cloud is a system re-design with no compromises on high level security and privacy, focusing on performance and scalability. VPN Cloud uses new certificate-based authentication technologies with session data integrity and encryption. Knowing the identity of the network, rather than where it’s connecting from, gives VPN Cloud technology amazing speed improvements.

**Flexible**

VPN Cloud allows authentication through exchanging signed registration requests between peers without the dependence on IP Address re-configuration. This offers customers ways to create business-specific, flexible network solutions.

For instance, certificate-based security allows networks to balance loads across data centers automatically. If one center incurs too much traffic, a second data center’s VPN concentrator can take the overflow.

**Improved NAT Support**

Each time you access the CMS Perfect Forward Security (PFS) is assured. VPN Cloud offers carrier-grade NAT support, allowing upstream routers to handle several Makos and their VPNS without the limitations imposed by IPv4’s diminishing address space.

A range of other modern security tools have been added to ensure genuine peer-to-peer authentication.

**Reliability, Health**

Certificate-based authentication allows single VPNs to carry multiple LAN traffic, speeding up the provisioning process and greatly reducing traffic noise.

With VPN Cloud, VPN tunnels are automatically restarted as soon as a problem is detected. VPN Cloud monitors all VPNs for health, resulting in accurate, immediate diagnostic reports.

VPN Cloud-based networks don’t establish VPNs based on IP address authentication. The Mako System Central Management Server (CMS) maintains a registry of users and certificates between authenticated systems.

This markedly increases the performance of VPN operations. A failover event may have taken several minutes to complete formerly, but a VPN Cloud-based solution may take less than a minute.
VPN CLOUD: Lightening the load with Weighted Traffic

Benefits

- Simple set-up and maintenance
- Works on almost any network layout
- Fast Failover if the Primary broadband service goes down
- Several Data center benefits including:
  - Fast Failover on hardware/routing issues
  - Geographic failover
  - Load balancing

VPN Cloud offers a versatile way to manage load balancing and geographic failover options by assigning ‘weight’ values across the concentrator network.

This diagram shows two data centers (DCs) in different locations. The customer has thousands of remote Makos connecting into the DC – more than a single VPN concentrator can handle – and wants the load spread across multiple VPN concentrators at both DCs.

In this case the customer’s DCs are both active/live and able to service requests; the customer wants to split the traffic so roughly half favour one DC and roughly the other half favour the second.

Here, different VPN Concentrators in each DC have different weightings. Weights split up the load by forcing some Makos to treat DC Two as the primary while forcing others to treat DC One as the primary.

To ensure each VPN concentrator knows which Makos it governs for return path routes, a routing protocol (e.g. BGP) runs between the Customer Internal Router and the VPN Concentrators. Alternatively, the Customer Internal Router uses static routes.