

Case Study

Dell SonicWALL SuperMassive E10800

Dell uses TeraVM™ for real world single sign-on (SSO)

The Dell SonicWALL SuperMassive™ series is a next generation firewall platform designed for very large networks to deliver scalability, reliability and deep security for high throughput networks.

The challenge Dell faced was how to cost effectively demonstrate the SSO scalability of the SuperMassive E10800 platform. Specifically SSO scalability to 50,000 or more unique, concurrent endpoints had to be proven.

Technical Challenge

Dell's SuperMassive firewalls communicate with Dell developed SSO agents to properly authenticate end user devices. For competitive reasons Dell had to prove the SSO scalability of the SuperMassive E10800 to at least 50,000 unique clients. Since testing with thousands of actual personal computing devices was impractical, Dell required a solution that accurately emulated such an environment.

After an extensive search, Dell selected VIAVI TeraVM™ because it was the only solution on the market that supported Dell's test requirements and also could be deployed virtually on Dell's own hardware.

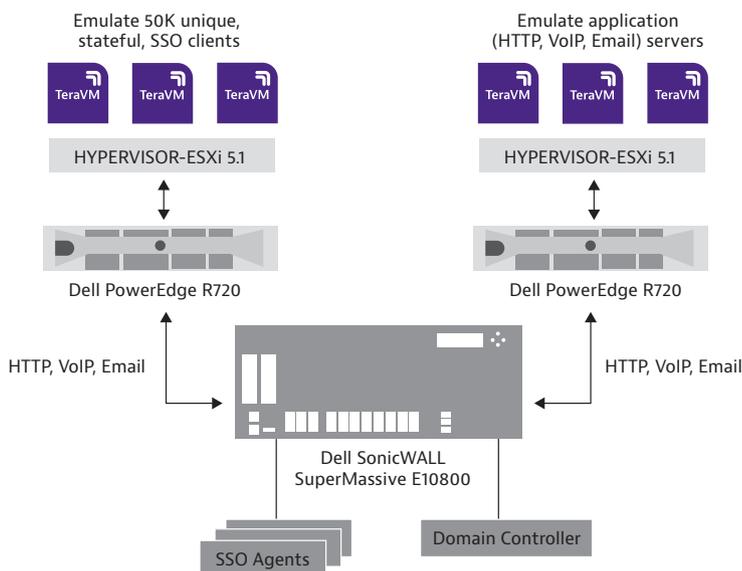


Figure 1: TeraVM and SuperMassive E10800 test setup

Overview

Dell used TeraVM to validate the SSO scalability of the SuperMassive E10800 firewall to 50,000 connections and beyond.

Key Challenges

- Statefully emulate 50,000 SSO clients using multiple sign-on methods:
 - Direct login to domain controller
 - Respond to NetAPI calls
- Need unique credentials and addresses per SSO session
- Cost effective solution that requires no proprietary hardware

WHY TeraVM?

- Statefully emulates Microsoft Windows SSO clients
- Virtualized test solution that utilizes industry standard hardware
- Statefully emulates a wide variety of application traffic

Emulated Traffic

- Single Sign-On (SSO) client
- HTTP, VoIP, Email (client and server)

Test Results

TeraVM Generates Single Sign-On (SSO) Traffic

- 50,000 SSO clients all with unique IP and MAC addresses
- Each SSO client has unique login credentials
- Each SSO client generates real application traffic (HTTP, VoIP, Email)

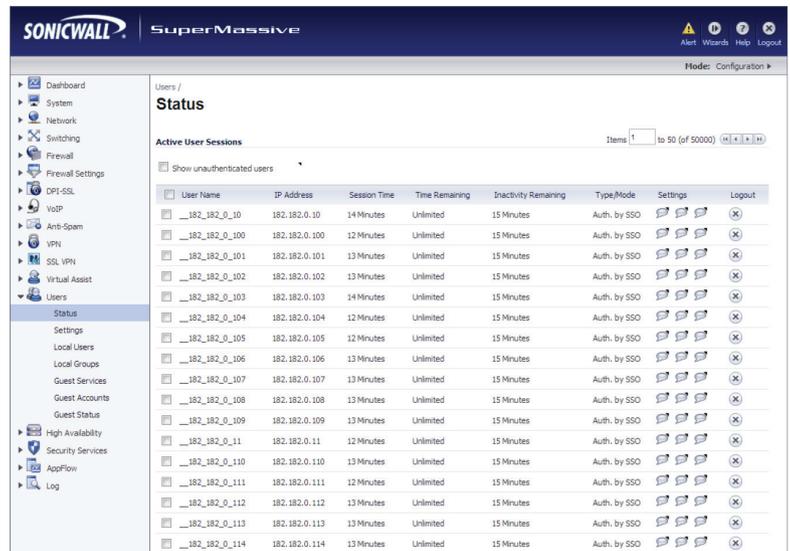


Figure 2: SuperMassive output showing SSO client authentication

SuperMassive at Scale

- Scaled sign-ons up to 50,000 end users and beyond
- Profile user activity to accurately represent scenarios such as the morning rush
- Dynamically control endpoints – bring endpoints in/out of service during live testing

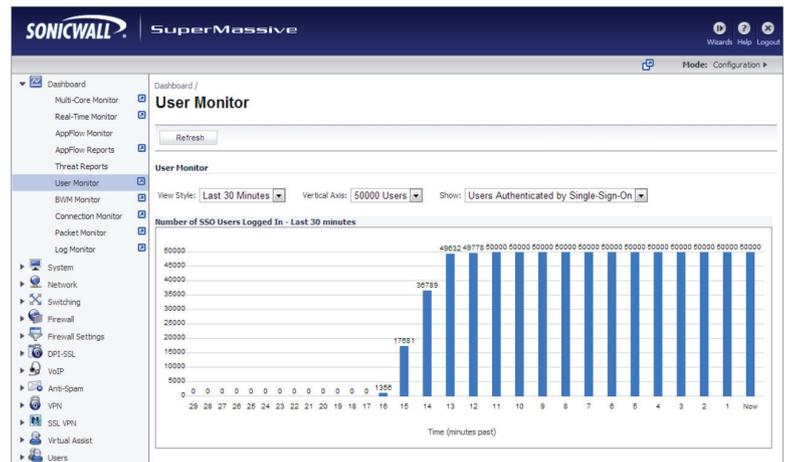


Figure 3: SuperMassive output showing 50,000 SSO client scalability

Conclusion

Dell used TeraVM to benchmark SuperMassive E10800 SSO scalability to 50,000 unique clients. In the test setup TeraVMs were deployed on both sides of the firewall. On the client side TeraVM emulated the SSO clients using unique login credentials and running real application traffic (HTTP, VoIP, Email). Each emulated client also had a unique IP and MAC address. TeraVM was also used to emulate the server side.

Dell conducted their benchmark tests using PowerEdge R720 servers, thereby removing the need for proprietary test hardware. This was not only cost effective but also allowed Dell to repurpose the servers once testing was complete.