Guarantee Application, Network and Security Performance on Satellite

APPOSITE TECHNOLOGIES

About Apposite Technologies

- Apposite is the market leader in Network Emulation for testing of applications over WANs

- Now Apposite is changing the market for Traffic Generation

- Founded in 2005

- Based in Los Angeles

- 3,000+ Customers Globally

3,000 Leading Organizations Choose Apposite

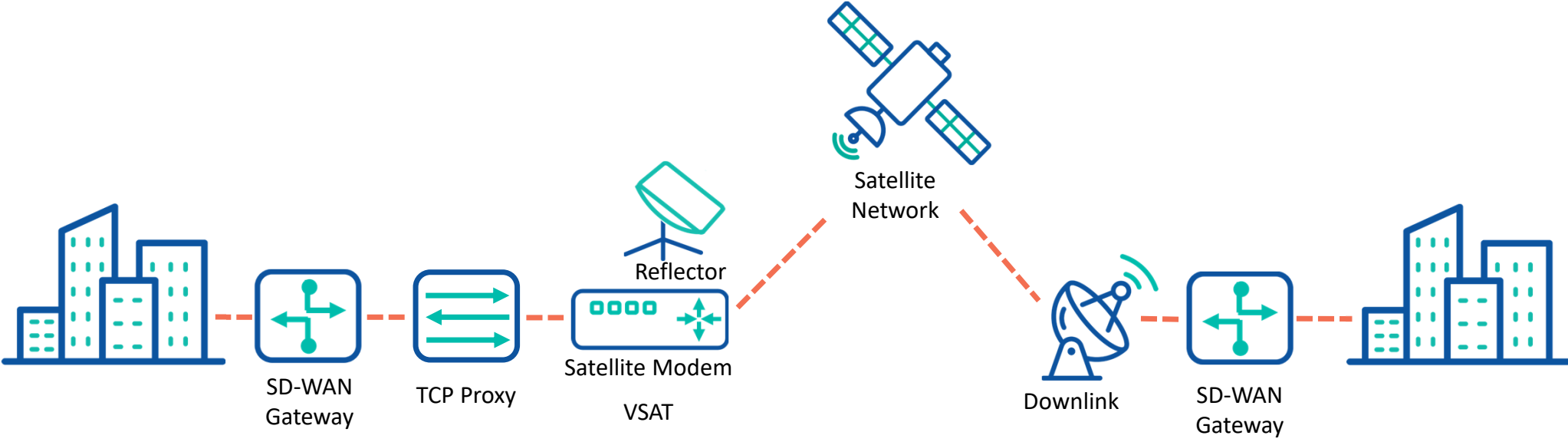**Enterprise**

Developers

Gov't/Military

Telecoms

# Clients That Trust Apposite for Satellite Performance Testing

Typical Satellite Network

End-to-End Satellite System Test

- Traffic generator emulates the devices sending and receiving traffic on either end of the network
- Replicate the expected mix of application traffic at high scale
- Measure key performance metrics like throughput, latency, and packet loss by application type
- Saturate the network to validate QoS policies and identify any performance bottlenecks
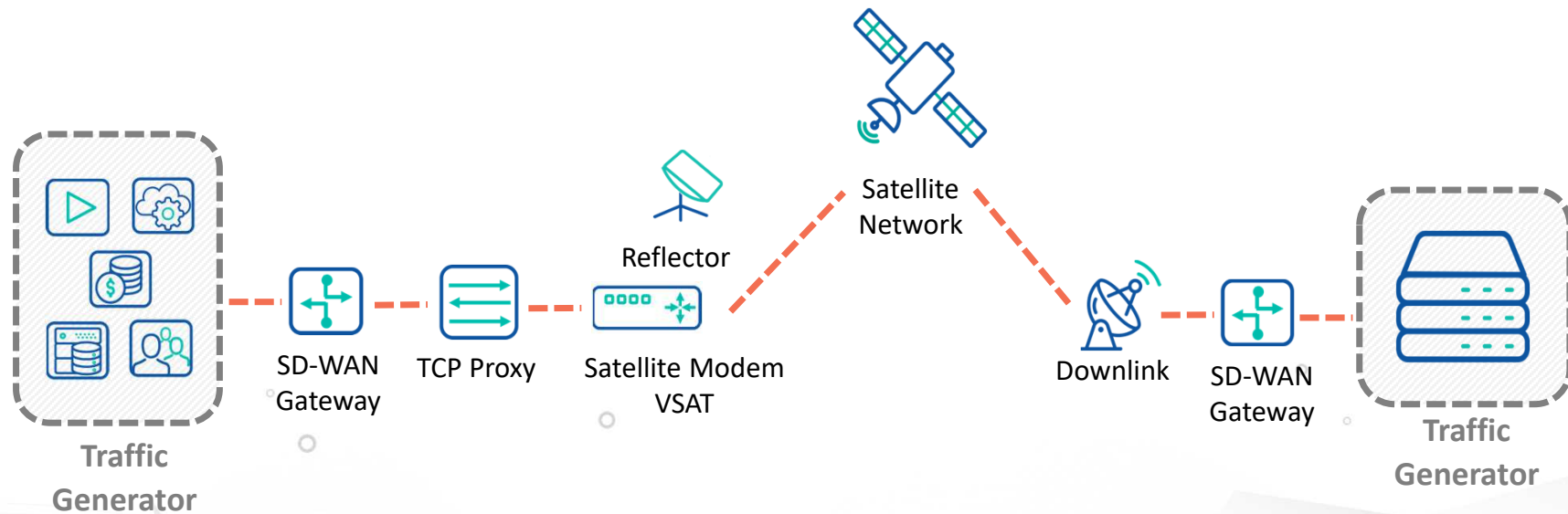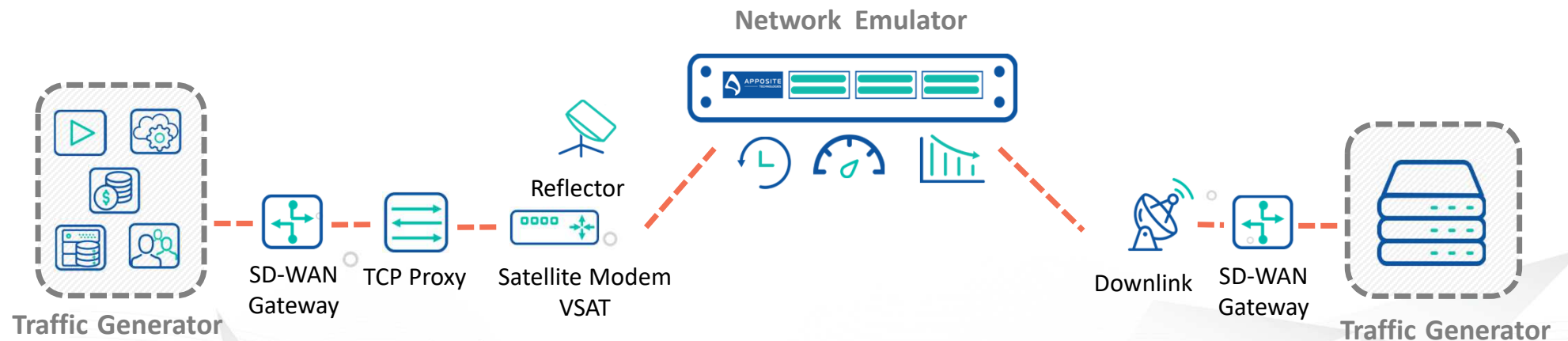
Using a Network Emulator

Challenges of Testing on Live Satellite Links

- Access to satellite networks is expensive & availability is often limited
- Tests are subject to whatever the conditions are that day
- Difficult to control and reproduce the test environment

Emulating the Satellite Network with a Network Emulator

- Control network impairments like latency, link flapping , bandwidth constraints, & loss to replicate conditions like rain, storms and snow
- Test under the best possible to the worst possible scenarios
- Conduct tests in a reliable, repeatable way for consistent results

Network Emulator

Traffic Generator — SD-WAN Gateway — TCP Proxy — Satellite Modem VSAT — Reflector — Downlink — SD-WAN Gateway — Traffic Generator

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Isolating a Satellite Modem

- Use a traffic generator to emulate a mix of application traffic at high scale to simulate real-world usage scenarios
- Add a network emulator to replicate and control the dynamic characteristics of the satellite network
- Assess how well the satellite modem handles the traffic load
- Validate adherence to QoS policies and identify potential bottlenecks

Network Emulator

Satellite Modem

Satellite Modem

Traffic Generator

Traffic Generator
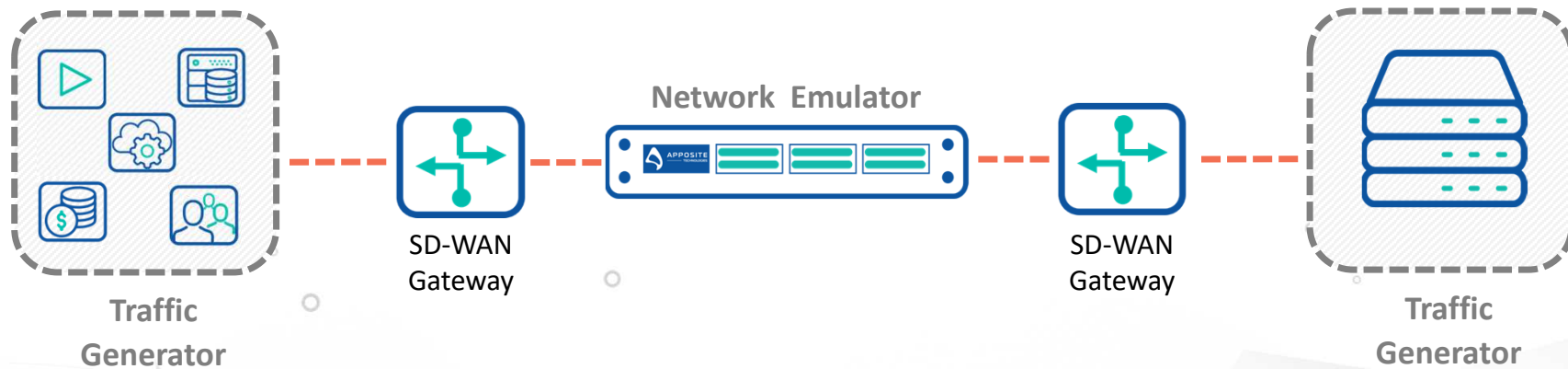
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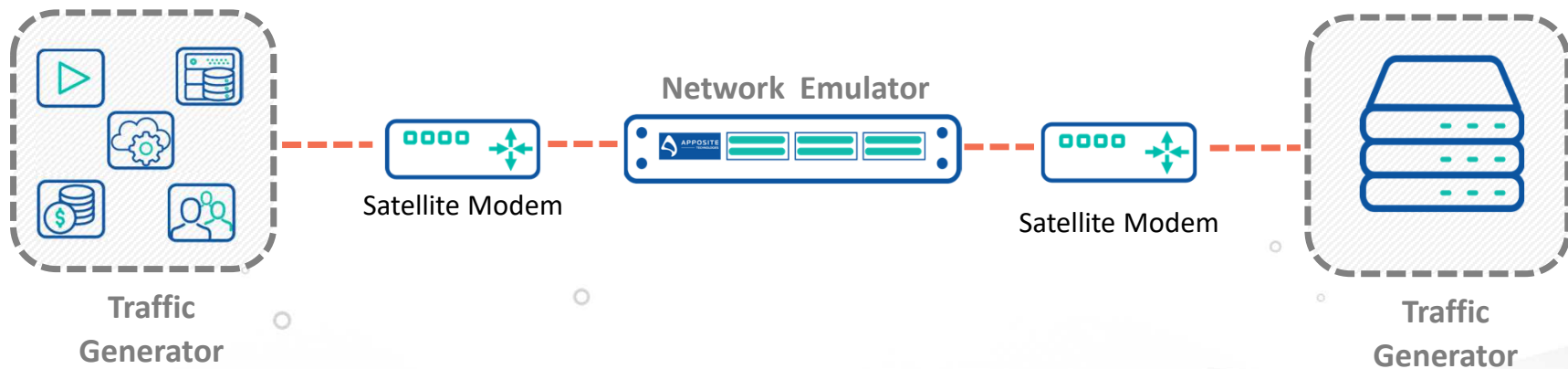
Isolating a TCP Proxy

- Use the traffic generator to generate a high volume of TCP sessions, and transfer data over the connections

- Measure how many simultaneous TCP connections the device can support

- Determine how fast the proxy can set up and tear down TCP sessions

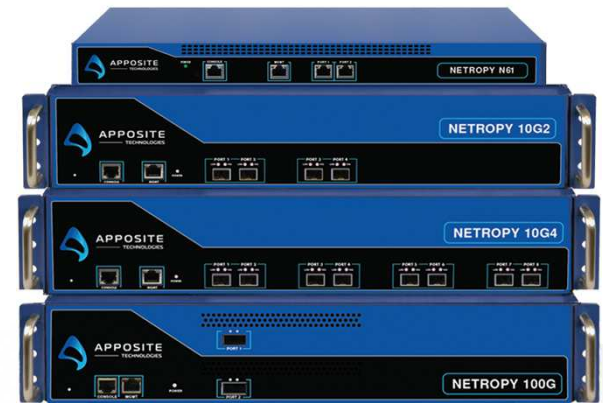- Measure supported data rates with and without the TCP proxy to prove that it does improve performance

Traffic Generator

TCP Proxy
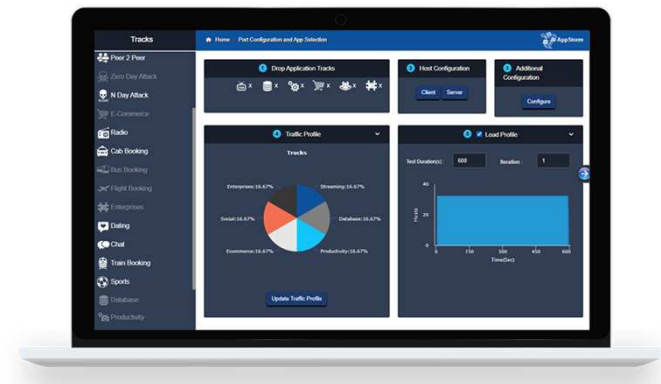
Traffic Generator

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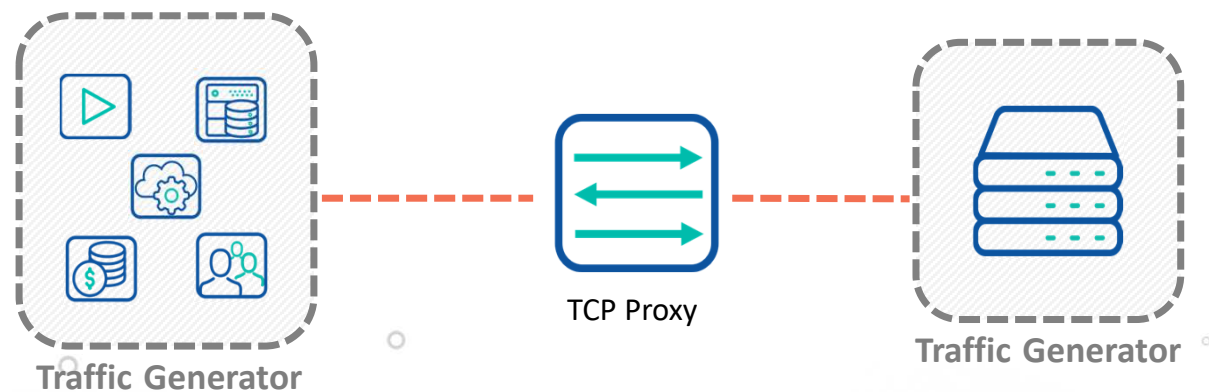
Isolating an SD-WAN Gateway

- Use a traffic generator to generate the expected application traffic being sent through the network, like video streaming, web browsing and VoIP

- Use a network emulator to create multiple links with individual network conditions

- Determine whether the gateway is correctly prioritizing application traffic according to QoS policies

- Verify whether the SD-WAN gateway is selecting the best alternative link in the case of an outage

Network Emulator

SD-WAN
Gateway

SD-WAN
Gateway

Traffic
Generator

Traffic
Generator

Apposite Solution Highlights

- Support for Traffic Generation and Network Emulation

- Easy-to-use, wizard-driven test methodology

- Browser-based GUI that is platform agnostic

- Single platform stateless and stateful traffic from Layer 2–7, including security attacks

- Automation through a comprehensive RESTful API

- Over 30K app flows included with built-in application library + 10K malicious attacks in the Attack Library

- Interface speeds 1Gbps, 2.5Gbps, 5Gbps, 10Gbps, 25Gbps, 40Gbps, and 100Gbps

- Virtual Editions: VMWare, KVM

- Cloud Editions: AWS, Google Cloud, Azure

Satellite Solution Brief & Video

[Satellite Performance Testing Video](#)

Satellite Solution Brief

Speaker Bios and Contact Information

Jim Danford, SVP Global Sales

With an engineering degree from Georgia Institute of Technology, Jim spent the early years of his career in engineering and engineering management positions for several companies in the network test and measurement market. After a transition into sales, Jim has led sales teams throughout the world for companies in network test and measurement as well as video production and distribution monitoring. Jim has been involved with many DoD projects throughout the years including DISA's Global Information Grid – Bandwidth Expansion (GIG-BE) project and the Pentagon Renovation Program (PENREN).

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Cade Nelson, Systems Engineer

Cade Nelson has been in the networking business since 1996 when he was hired as employee number 56 at Earthlink Networks. He has held positions as Senior Network Engineer, Systems Integration Engineer, and Product Engineer at many different tech companies. Cade has been called the "swiss army knife" of Apposite Technologies where he wears many hats from product engineering to product development.

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Thank You

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