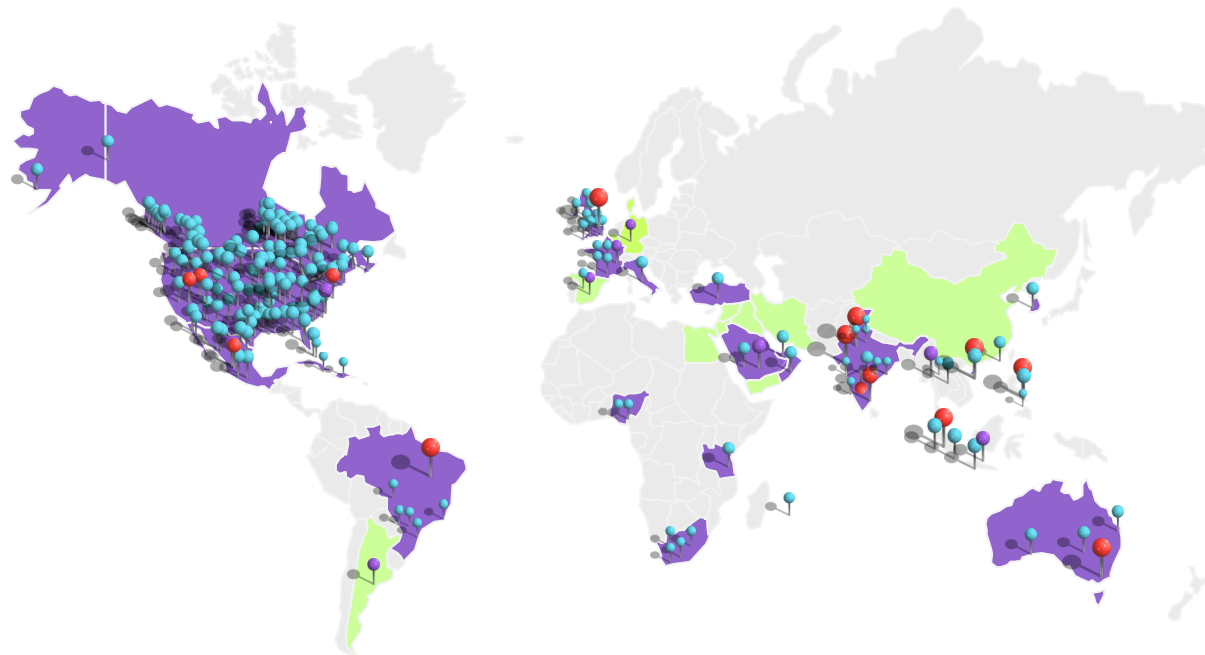# About FatPipe Networks

- Innovating and deploying Hybrid and SD-WAN since 2002.

- Over 10,000 successful customer deployments.

- 15 seminal patents with over 180 technical claims.

- The original Hybrid WAN/SD-WAN Company

  - "SD-WAN before SD-WAN was cool." - Gartner

  - "FatPipe began offering SD-WAN solutions long before the term became part of our vernacular" - ZK Research

Offices   **Authorized Distributors, ISPs, VARs, Resellers**   **Planned Offices**

US Patent 6,775,235 — Tools and techniques for directing packets over disparate networks

US Patent 6,493,341 — Combining routers to increase concurrency and redundancy in external network access. Data packets are multiplexed between the routers using a variation on the standard SYN packet synchronization protocol, and other components

US Patent 6,295,276 — Combining routers to increase concurrency and redundancy in external network access. Data packets are multiplexed between the routers using a variation on the standard address resolution protocol (ARP), and other components

US Patent 6,253,247 — System and method for transmitting a user's data packets concurrently over different telephone lines between two computer networks

US Patent 7,269,143 — Combining routers to increase concurrency and redundancy in external network access and fault tolerance of Wide Area Networks

US Patent 7,406,048 — Tools and techniques for directing packets over multiple parallel disparate networks based on address and other criteria

US Patent 7,444,506 — Methods, devices and systems for efficient secure parallel data transmission over disparate networks

US Patent 7,877,510 — Domain name resolution making IP address selections in response to connection status when multiple connections are present

US Patent 8,356,346 — VPN secure sessions with dynamic IP addresses

US Patent 8,780,811 — Flat Network failover control

US Patent 8,995,252 — VoIP over multiple WAN paths

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What is Managed ASEoD?

Secure Ethernet VPN and Internet connectivity over a single connection that combines:

ASEoD   +   Managed Device

- **Point-to-point or multi-point connections** – provides a secure Virtual Private Network between two or more locations

- **Internet Access** – provides flexibility to split the circuit using an Internet Ethernet Virtual Connection (IEVC) to directly access the Internet

- **Traffic prioritization** – Five Classes of Service (CoS) allowing selection of prioritization based on needs

- **Flexibility and Assurance** – Select the maximum bandwidth needed from 2 Mbps up to 100 Gbps in near real time and pay only for what is used

- **Adding or changing** network services in near real time

- **Provisioning new ports** quickly, often in days or less compared to weeks

- **Single-device solution provides**
  - Routing
  - Firewall
  - Intrusion Prevention System (IPS)
  - Switching
  - Web filtering

- **Single IP Address** – can be used to support multiple devices or servers
- /29 Available for (5 Static IPS)

- **Installation project management** of device and circuit, with on-site implementation as needed

- **Proactive management -** Single point-of-contact that monitors the service 24 x 7 x 365

- **Enables deployment of new features** as they become available, such as WiFi
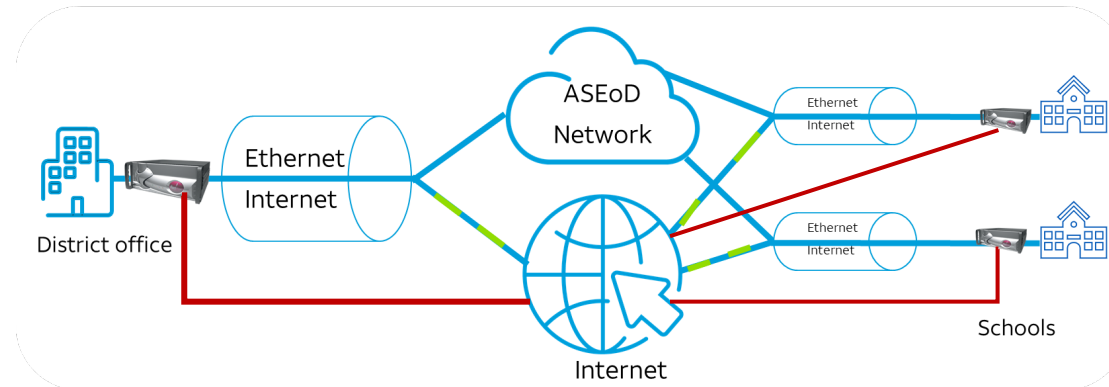
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Networks - All-In-One Single Site Edge Solution

Features Included with Managed ASEoD Service

- Outbound Load Balancing (SDWAN)
- Link Failover
- QoS and Policy based path selection (SDWAN)
- Stateful firewall with Web Filter & IPS
- Cellular via external 4G/LTE
- Monitoring
  - Email /SMS Alerts
    - ✓ Link Status
    - ✓ Device Status
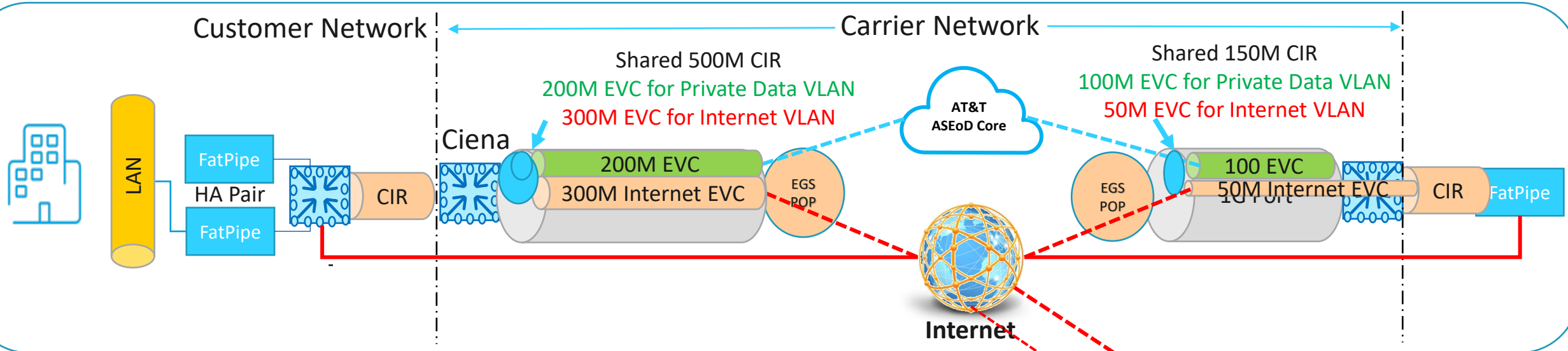
Optional Features/Functions

- SmartDNS (Inbound Load Balancing)
- SSL based remote user connectivity
- VPN Secure connectivity
- Application based path selection (SDWAN)
- Application Visibility
- WAN Optimization

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ASEoD Internet Offload

Simplified Reliable Customer Network
Simple Business Center Portal with near Real-time Provisioning.

Customer Network — Carrier Network

Shared 500M CIR
200M EVC for Private Data VLAN
300M EVC for Internet VLAN

Shared 150M CIR
100M EVC for Private Data VLAN
50M EVC for Internet VLAN

AT&T ASEoD Core

LAN

FatPipe

HA Pair

FatPipe

CIR

Ciena

200M EVC
300M Internet EVC

EGS POP

Internet

EGS POP

100 EVC
50M Internet EVC

CIR

FatPipe

FatPipe

Non-ASEoD Site
Internet Only

- Internet available on ==ASEoD in region only==
- Internet EVC UNI circuits must be VLAN based
- Port to UNI MACD now available in Business Center
- Internet EVC with CoS (non-critical high fixed)
- Dual stack IP addresses with /30 IPV4 and /64 IPV6 and ==/29 available==
- Don't forget to add a AT&T 4G/5G Wireless Backup

CIR - Bandwidth

Access/Port

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KEY DIFFERENTIATORS

FatPipe offers unique patented feature capabilities in a complete easy to deploy SD-WAN solution at lower overall cost

FatPipe offers over a dozen patented features that uniquely sets it apart from the competition in SD-WAN

FATPIPE KEY DIFFERENTIATORS:

Enterprise- Class Reliability with Maximum Efficiency

- **Single Stream Load Balancing** - eliminates the need for duplication of data and costly unnecessary bandwidth
- **Direct Peer-to-Peer, "Over the Top" SD-WAN** - FatPipe SD-WAN dynamic policy routing software is native to on premise equipment, creating no increased latency and "extra hops" in traversing to WAN cloud (that is present in Cloud Gateway based SD-WAN vendors: Therefore, no need for extra bandwidth or overhead on network infrastructure
- **Circuit Links** – Supports up to 15+ ISP disparate IP circuits per site and multiple disparate MPLS circuits which is 3-4 times greater than the competition
- **Inbound Load Balancing and Site Failove**r: Only SD-WAN technology with automatic session failover, on-premise inbound HA redundancy (patented FatPipe SmartDNS), and DR site failover.
- **Branch Autonomous Operation**: FatPipe architecture ensures that even if a remote Orchestrator is unavailable due to outages, the local boxes will continue to operate and transmit data efficiently.
- Raises WAN network reliability up to 99.9999%

Large Capacity Deployment Capabilities

- **High Bandwidth** - 10Mbps to 100Gbps bandwidth throughputs
- **Cloud Hosted High Bandwidth** – FatPipe Cloud Hosted SDWAN can effectively load balance downloads with a capacity 4X that of the competition

Full WAN Optimization over Multiple Links

- **Selective encryption** – Encrypts only broadband traffic, not MPLS
- Optimization - Compression, caching, deduplication, TCP acceleration-over multiple ISP links-can be licensed as part of the solution, as opposed to a third-party appliance add-on.

Secure Communications

- **Stateful Firewall** - efficient secure data transmission over disparate networks
- **MPSec -** patented multi-path security increases WAN transmission security by orders of magnitude by introducing a blockchain level of security for transmission between data paths
- **FIPS-140-2 Certified** - by NIST for use by the U.S. Government

Flat Networks – Only SDWAN to Support Layers 2-7 (unique to Fatpipe, 4 patents)

- Flat network support allows FatPipe to be deployed in customer networks with dark fiber or point-to-point ASE for network resiliency across physically separate locations.
- Fabric extension across broadband gives customers the ability to connect their branches to the SDN datacenter seamlessly

CUSTOMERS ARE LOOKING FOR...

- Ability to use low-cost transport effectively
- Secure Hybrid Cloud / WAN environments
- Automatic Failover with no service interruptions
- Control of Inbound call and data routing
- QoS for VOIP
- Ability to integrate multiple carriers and transport types including Layer 2

SOLUTION COMPONENTS:

1. FatPipe appliance – Physical (5 models) or virtual
2. FatPipe – 7 networking functions in 1 box
    1. Load Balancer (inbound & outbound)
    2. WAN Optimizer
    3. QoS
    4. Router
    5. Traffic Shaper
    6. Firewall
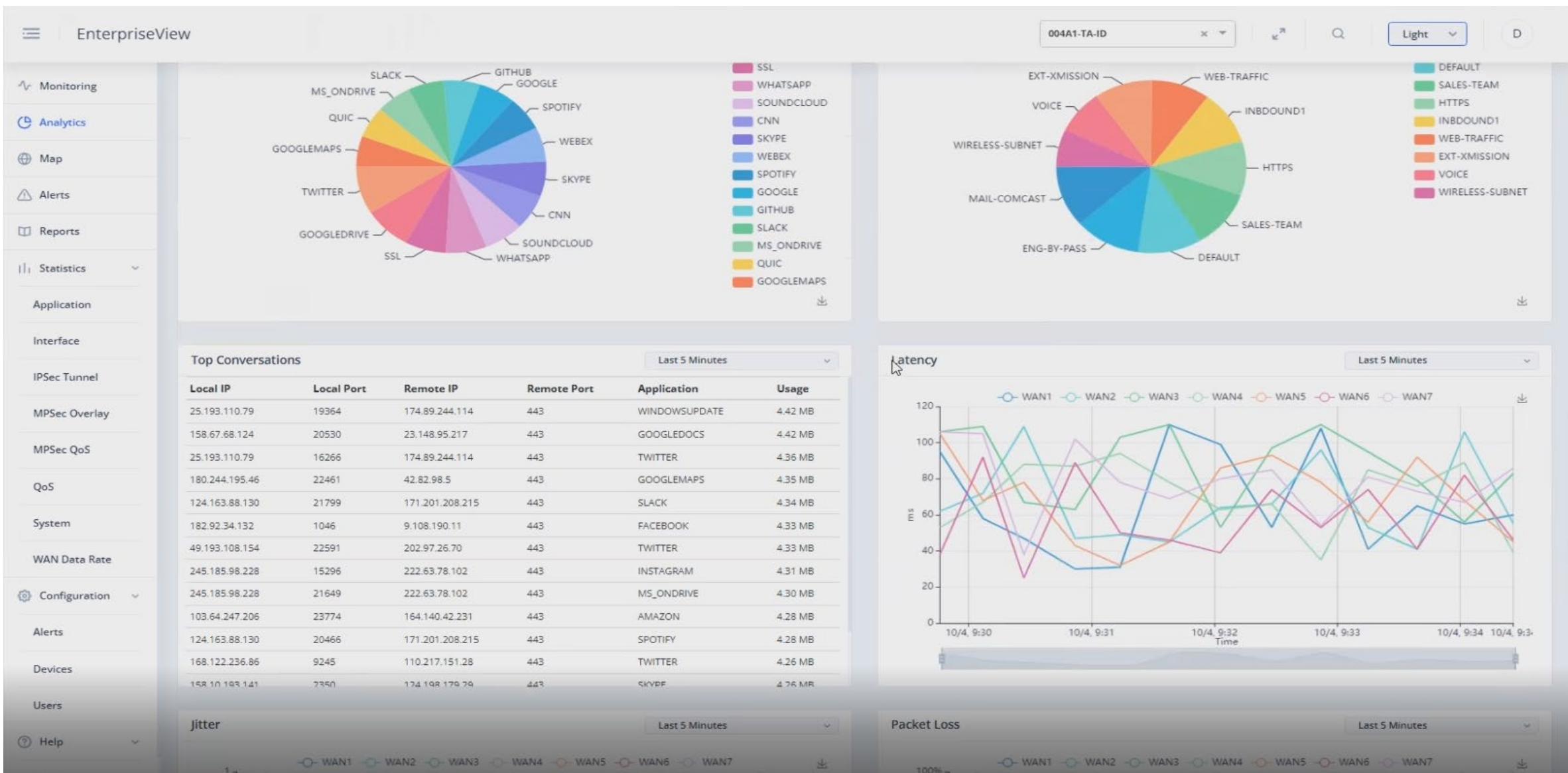   7. Reporting Software

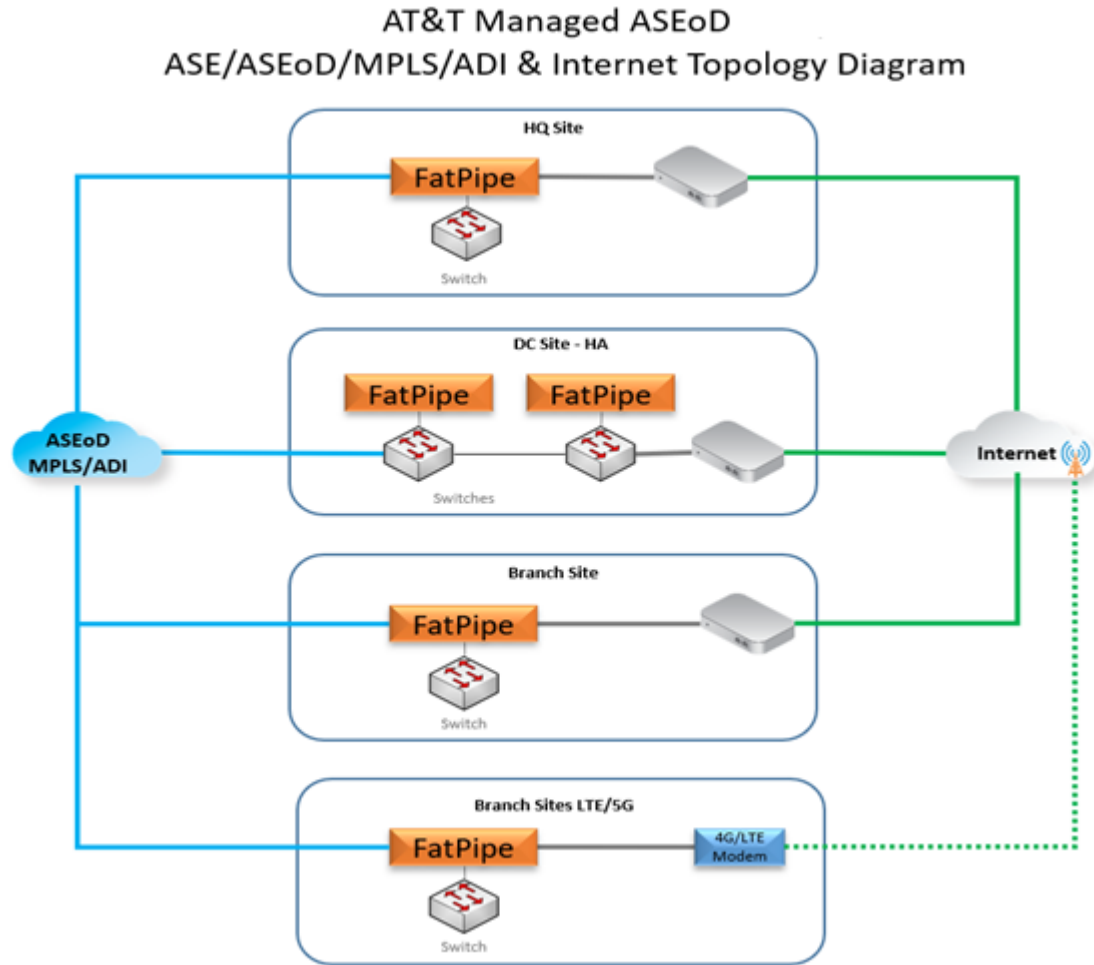## Contact :
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Cell (319)-329-4773
for a quote & deal registration

EnterpriseView

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Light

D

Navigation
- Monitoring
- Analytics
- Map
- Alerts
- Reports
- Statistics
  - Application
  - Interface
  - IPSec Tunnel
  - MPSec Overlay
  - MPSec QoS
  - QoS
  - System
  - WAN Data Rate
- Configuration
  - Alerts
  - Devices
  - Users
- Help

Pie Chart 1 (Applications)
Labels: SLACK, GITHUB, GOOGLE, MS_ONDRIVE, SPOTIFY, QUIC, WEBEX, GOOGLEMAPS, SKYPE, TWITTER, CNN, GOOGLEDRIVE, SOUNDCLOUD, SSL, WHATSAPP

Legend:
- SSL
- WHATSAPP
- SOUNDCLOUD
- CNN
- SKYPE
- WEBEX
- SPOTIFY
- GOOGLE
- GITHUB
- SLACK
- MS_ONDRIVE
- QUIC
- GOOGLEMAPS

Pie Chart 2
Labels: EXT-XMISSION, WEB-TRAFFIC, VOICE, INBDOUND1, WIRELESS-SUBNET, HTTPS, MAIL-COMCAST, SALES-TEAM, ENG-BY-PASS, DEFAULT

Legend:
- DEFAULT
- SALES-TEAM
- HTTPS
- INBDOUND1
- WEB-TRAFFIC
- EXT-XMISSION
- VOICE
- WIRELESS-SUBNET

Top Conversations
Last 5 Minutes

Local IP	Local Port	Remote IP	Remote Port	Application	Usage
25.193.110.79	19364	174.89.244.114	443	WINDOWSUPDATE	4.42 MB
158.67.68.124	20530	23.148.95.217	443	GOOGLEDOCS	4.42 MB
25.193.110.79	16266	174.89.244.114	443	TWITTER	4.36 MB
180.244.195.46	22461	42.82.98.5	443	GOOGLEMAPS	4.35 MB
124.163.88.130	21799	171.201.208.215	443	SLACK	4.34 MB
182.92.34.132	1046	9.108.190.11	443	FACEBOOK	4.33 MB
49.193.108.154	22591	202.97.26.70	443	TWITTER	4.33 MB
245.185.98.228	15296	222.63.78.102	443	INSTAGRAM	4.31 MB
245.185.98.228	21649	222.63.78.102	443	MS_ONDRIVE	4.30 MB
103.64.247.206	23774	164.140.42.231	443	AMAZON	4.28 MB
124.163.88.130	20466	171.201.208.215	443	SPOTIFY	4.28 MB
168.122.236.86	9245	110.217.151.28	443	TWITTER	4.26 MB
158.10.193.141	2350	124.198.179.29	443	SKYPE	4.26 MB

Latency
Last 5 Minutes

Legend: WAN1, WAN2, WAN3, WAN4, WAN5, WAN6, WAN7

ms (y-axis): 0, 20, 40, 60, 80, 100, 120
Time (x-axis): 10/4, 9:30; 10/4, 9:31; 10/4, 9:32; 10/4, 9:33; 10/4, 9:34; 10/4, 9:3-

Jitter
Last 5 Minutes

Legend: WAN1, WAN2, WAN3, WAN4, WAN5, WAN6, WAN7

Packet Loss
Last 5 Minutes

Legend: WAN1, WAN2, WAN3, WAN4, WAN5, WAN6, WAN7

100%

AT&T Business

Credit Union-12 Sites (Jackson, TN): Value Added Services

AT&T Managed ASEoD
ASE/ASEoD/MPLS/ADI & Internet Topology Diagram

PROBLEM

The Credit Union wanted to take a new approach for a more efficient solution. Their objective was to move from MPLS to **ASEoD with Internet Offload**. They currently have 13 locations, with 11 in network and two out of network.

Wished to connect in a "Hub-and-Spoke" environment, and needed a fail safe for the ASEoD connection with the Data Center-with the same security as the network currently has.

Solution

The **ASEoD Bundled Solution** will provide the Credit Union all of their needed requirements, and the flexibility to improve on the existing network. 11 locations will be equipped with the ASEoD and Offload option at the 100Mb CIR/ 1 GB port bundled offer. Two locations will utilize local bandwidth and FatPipe MPSEC for the secure and redundant soliton to connect all the locations in a full Hub-and-Spoke environment.

Leaders will be able to utilize the flexible E portal to scale bandwidth up to 1 Gig as needed while the Fatpipe will provide these Value Added Services:

- **MPSEC-** To failover the ASEoD to additional connection in the event of outage.
- **Site to Site Failover and VPN site Failover-** FatPipe will give the ability to redirect traffic from the HQ to the DR center in the event of failover.
- **QOS-** Packet prioritization for mission critical applications.
- **SMARTDNS-** Inbound Redundancy for on premise server sessions.
- **Dual VLAN Tagging-** Leaders can utilize the FatPipe to route traffic on both VLAN's.
- **Policy Routing-** FatPipe can route public use traffic down public connections.
- **WAN Acceleration-** Caching, Compressing, Deduplicating, TCP acceleration.

AT&T B FATPipe