Features of FatPipe's Hybrid Networking Products

FatPipe has been providing reliable, redundant and secure wide area network connectivity over 15 years. FatPipe invented this technology and holds 11 foundational patents with over 180 unique innovations. FatPipe solutions have been deployed in thousands of customer sites. FatPipe products are proudly built in the USA to the highest quality standards. FatPipe is ISO 2001 certified and has been in continuous business since 1990. FatPipe's support is done in house and not outsourced to a third-party call center.

FatPipe VoIP and Data Failover Technology:

FatPipe's real world experience with VoIP provides a competitive difference. Unlike competitors, FatPipe's VoIP failover has been put to the test for several years in demanding networks, like call centers, and works flawlessly. FatPipe has been deployed in mission-critical 911 centers in several countries.

Our patented technology fails VoIP traffic over in a sub-second without dropping the call. With FatPipe, VoIP, data and other traffic is sent across the WAN in a single stream. If a line fails, the data automatically fails over to another line instantly in a sub-second without dropping the call. Other SD-WAN vendors send the same VoIP traffic over two lines and selects the session path depending on which data stream arrives first. While duplicating traffic works for small retail outlets, it does not work for larger offices when you have hundreds of calls being placed simultaneously.

With FatPipe's patented technology, when 4G/LTE is used as a back-up a VoIP call seamlessly fails over to the 4G/LTE line without a call drop. FatPipe does not negotiate VPN tunnel on line failure. With competitors, if the connection is used for back-up the VoIP traffic does not failover because a VPN has to be established on the line. This takes so much time the VoIP call is dropped angering customers.

The problem is worse at the PBX or cloud service where you have double the bandwidth being used; this can cause clogging on the VoIP server making it inefficient and expensive. From a VoIP provider's perspective, over-provisioning has to be reduced by half to accommodate the extra (double) traffic coming into the branch or customer's VoIP system. This causes the cost structure model to change or endure losses to the VoIP provider. FatPipe is the most cost effective choice for VoIP providers and provides clearer, better quality VoIP to their customers.

FatPipe's end-to-end jitter and latency management ensures that VoIP calls have the best quality possible with the available data lines. This feature enables VoIP to be deployed in large call and customer service centers with 100 or 37,000 seats, both stateside and off-shore.

Our patented technology also works similarly for all data traffic and is especially valuable for manufacturing companies that use Oracle and SAP. FatPipe automatically fails over all data sessions without dropping sessions when a line fails. This is important when production monitoring data is transmitted live or when a check processing, credit card or ATM transaction is being transmitted. If a line fails in the middle of a transaction, the transaction is failed over without causing a loss of data. With SD-WAN from smaller start-ups, the credit card needs to be run over again and ends up billing the customer twice until it is reconciled at night. This is very inefficient and causes irritation with customers and retailers alike.

FatPipe Load Balancing and Failover Technology:

Load Balancing: FatPipe does true outbound load balancing rather than just in failover mode. FatPipe's patented technology dynamically places data session on all the lines including multiple MPLS, DIA, broadband, 4G/LTE, and satellite (any combination thereof). This maximizes the data traffic and speeds up data transmission, resulting in better ROI. FatPipe achieves full load-balancing and seamless session failover without duplicating traffic with its patented technology. Some competitors place ALL traffic on multiple data lines simultaneously, wasting bandwidth and increasing latency.

Selective Encryption: FatPipe's patented hybrid WAN technology selectively encrypts ONLY the traffic placed on public links. Customers do not want their MPLS traffic to be encrypted. Competitors encrypt all traffic, wasting bandwidth and adding overhead.

Intelligent Branch: FatPipe intelligent branch technology ensures that even if an orchestrator fails, the branches will continue to operate independently until the orchestrator comes back online.

Inbound Load Balancing: Our patented SmartDNS based inbound load balancing ensures that incoming traffic to email servers, data servers, and IoT servers are received over multiple lines. If one line fails, the data is instantaneously transferred to other available lines without losing connections. FatPipe is not dependent on BGP propagation that can take 2 to 40 minutes, during which time the server is not accessible to the outside world.

Flat Networks Load Balancing: FatPipe patented technology can load balance across flat network structures. Companies, especially financial institutions, who prefer to have a dark fiber available, can now use FatPipe to automatically failover to the dark fiber without loss of sessions. Our flat network failover technology enables large institutions to run networks without changes.

Layer 2 Load Balancing: FatPipe provides Layer 2 load balancing as well. This enables customers to use an SDN fabric software at the core switches to manage IoT devices and still load balance traffic across multiple lines to provide higher security for IoT devices. IoT devices have become a major source of access points for security breaches. Patents are pending for this technology.

Rotating IP Addressing Schemes: FatPipe SD-WAN can intelligently manage low-cost data lines that have rotating IP addresses with its patented technology. Usually, ISP lines with rotating/dynamic IP addresses are less expensive and small branches may be able to use them cost-effectively.

WAN Optimization: FatPipe multi-line integrated WAN optimization and caching can reduce traffic by 30% to 40% overall, resulting in a faster ROI. Gartner recommended that companies strongly consider FatPipe when combining multiple lines with WAN optimization.

FatPipe SAT Booster: FatPipe's SAT Booster package can be used to block various types of traffic and files such as .mpg, chat, torrent traffic, and also provide lossy compression of videos to reduce data traffic that is not critical to a company's function. Data reductions of 30% to 50% can be achieved. This technology was developed in cooperation with Inmarsat and is approved by Inmarsat.

Routing Protocols: FatPipe works seamlessly with BGP, EIGRP, and OSPF protocols. This means FatPipe can be deployed in any existing customer environment. Most other competitors prefer greenfield deployments due to the simplicity of their products and lack of experience.

Multi-line VPN Failover: FatPipe's datacenter to datacenter failover features ensure that when a datacenter fails, then the branch office lines, VPN, and other connections are failed over to the backup data center without loss of business.

Multiple Orchestration Options:

Orchestrator In Band or Cloud Hosted: FatPipe EnterpriseView™ provides a single pane of glass management of products.

FatPipe Orchestrator can be in band (on the customer's networks for security reasons) or hosted at another data center outside the customer's network, depending on the customer security requirements. Most large companies, government, financial, and healthcare entities prefer to have the orchestrator on their internal network. FatPipe's Orchestrator is designed so that even if the orchestrator fails, the branch units continue to function.

The Orchestrator can also separate the data plane and management plane. This means the data plane can remain inside the customer's network while the management can reside outside. No data leaves the premises thus meeting HIPAA and PCI compliance requirements. FatPipe is also FIPS 140-2 compliant.

Since FatPipe can deploy SD-WAN through on premise, cloud hosted, or a combination of both in a multi-site environment, *we ask these questions to determine the best design deployment:*
How do you wish your traffic to flow?

-From your HQ to and between your sites?" (On premise or cloud computing/virtual).
-From a FatPipe Internet gateway to your sites?" (Cloud Hosted);
-Where are your servers and Call Managers?

-What effects to session performance will the extra hop from a cloud hosted SD-WAN solution have on your onsite servers and Call Managers?

-What effects to session performance will the extra hop from a cloud hosted SD-WAN solution have on your Oracle hosted applications?"

To clarify:

Cloud connectivity describes connecting reliably and efficiently to resources hosted at cloud providers (such as VMware, Amazon, Google, Microsoft, and Rackspace)

In a cloud computing SD-WAN solution:

- Head end can be any designated on premise location;
- Orchestrator can reside on any designated on premise location or in the cloud;
- Data does not leave your network;
- Traffic flows out of one site to the Internet, or to another branch site;
- Network security and compliance with PCI, HIPAA and FIPS 140-2 standards remain in effect.

Cloud Hosting: An Internet gateway is needed for cloud hosting, which deploys applications in virtual machines over a cloud service delivery model (SaaS, PaaS, or IaaS).

In a cloud hosted SD-WAN solution:

- Head end is in the cloud;
- Orchestrator is accessed through the cloud;
- Data leaves your network;
- Traffic flows out of one site through the cloud hosted head end, then to the Internet or branch site;
- When data leaves your network security, compliance with PCI, HIPAA and FIPS 140-2 standards are compromised.
- One more hop is added to the traffic flow.

Virtual or FatPipe Metal?

W*e ask these questions to determine the best deployment:*

- What is the aggregated download bandwidth of all of your WAN links at each of your sites?
- Every site with 1 Gbps or higher is specified as an on premise FatPipe appliance.
- Machines through virtual servers do not have the CPU horsepower for all of the aggregation, deep packet inspection, line performance monitoring and policy based routing/QoS that needs to be delivered in speeds exceeding 1 Gbps of download throughput.

Integrated Solution

For those customers who prefer a single branch solution, FatPipe offers a low-cost product that combines multi-line SD-WAN, firewall, antivirus (using the same signatures database as others), a web filter (using the same database as others), as well as VPN and WAN optimization.

Patented Technology:

FatPipe's products are protected by the following US patents:

US Patent 6,775,235

Tools and techniques for directing packets of disparate networks. Foundation of a hybrid WAN.

US Patent 6,493,341

This patent encompasses technology used for supporting hybrid WANs.

US Patent 6,295,276

This patent encompasses technology used for supporting hybrid WANs.

US Patent 6,253,247

This patent covers technology for multiple line end to end data transmission of sessions.

US Patent 7,269,143

Patent covers SD-WAN overlay technology for failover and seamless failover of traffic across diverse WAN links.

US Patent 7,406,048

This patent covers SD-WAN overlay technology for failover and seamless failover of traffic across diverse WAN links

US Patent 7,444,506

Methods, devices, and systems for efficient, secure parallel data transmission over disparate networks. Covers selective encryption and split tunneling of traffic across a hybrid network.

US Patent 7,877,510

Domain name resolution making IP address selections in response to connection status when multiple connections are present. This patent covers inbound load balancing of data over multiple lines for hybrid networks.

US Patent 8,356,346

VPN secure sessions with dynamic IP addresses. This patent covers the technology necessary to provide dynamic VPN connectivity with low cost rotating IP addresses.

US Patent 8,780,811

Flat Network failover control. This patent covers technology for deployment across globally dispersed enterprise networks that are otherwise non-routable.

US Patent 8,995,252

VoIP over multiple WAN paths. This patent covers technology required to maintain VoIP session continuity if one path fails.

Additional patents are pending for more significant technological innovations!