

VIASAT MANAGED MPLS

A Multiprotocol Label Switching (MPLS) service

For over 15 years, Viasat has been providing secure, global communications via Ku- or Ka-band satellites. Our satellite services are backed by a global terrestrial network, enabling a complete, secure point-to-point design that includes backhaul. Building off Multiprotocol Label Switching (MPLS) standards, Viasat Managed MPLS provides connectivity to specific government Points-of-Presence, creating a virtual private network that can transport data to and from remote sites without traversing any public Internet circuits. Viasat's global satellite coverage coupled with worldwide terrestrial backhaul, allows for customers to connect to datacenters across the globe, creating an integrated networking solution.

Viasat's Managed MPLS service is an add-on to our ArcLight-1 Network and our Managed Private Service (MPS) offering. The global MPLS network provides guaranteed reliable terrestrial transport of voice, video, and data to government facilities in the Continental United States (CONUS). Unlike the public Internet, the global terrestrial network is private, and it provides mission continuity, assured service delivery, consistent transmission delay, minimal jitter and guaranteed capacity.

What is MPLS?

MPLS is a data routing technology, where data is directed through path labels instead of network addresses that require complicated lookups in a routing table. MPLS increases the speed and manages the flow of the network traffic. Additionally MPLS traffic is segregated from regular internet traffic both logically and physically, adding more layers of data separation to the mission.

How it Works

Viasat Managed MPLS connects all satellite hubs to a private MPLS backbone allowing transport to datacenters around the globe. Customer data landing at any satellite ground station in the service coverage area is routed directly through the MPLS network to either a CONUS ISP or a Government Point of Presence (PoP). For additional assured connectivity, end-to-end encryption can be employed to secure the connection between the platform and the end user. Additionally, Internet service can be provided through a connection at the earth station from a local Internet Service Provider (ISP).

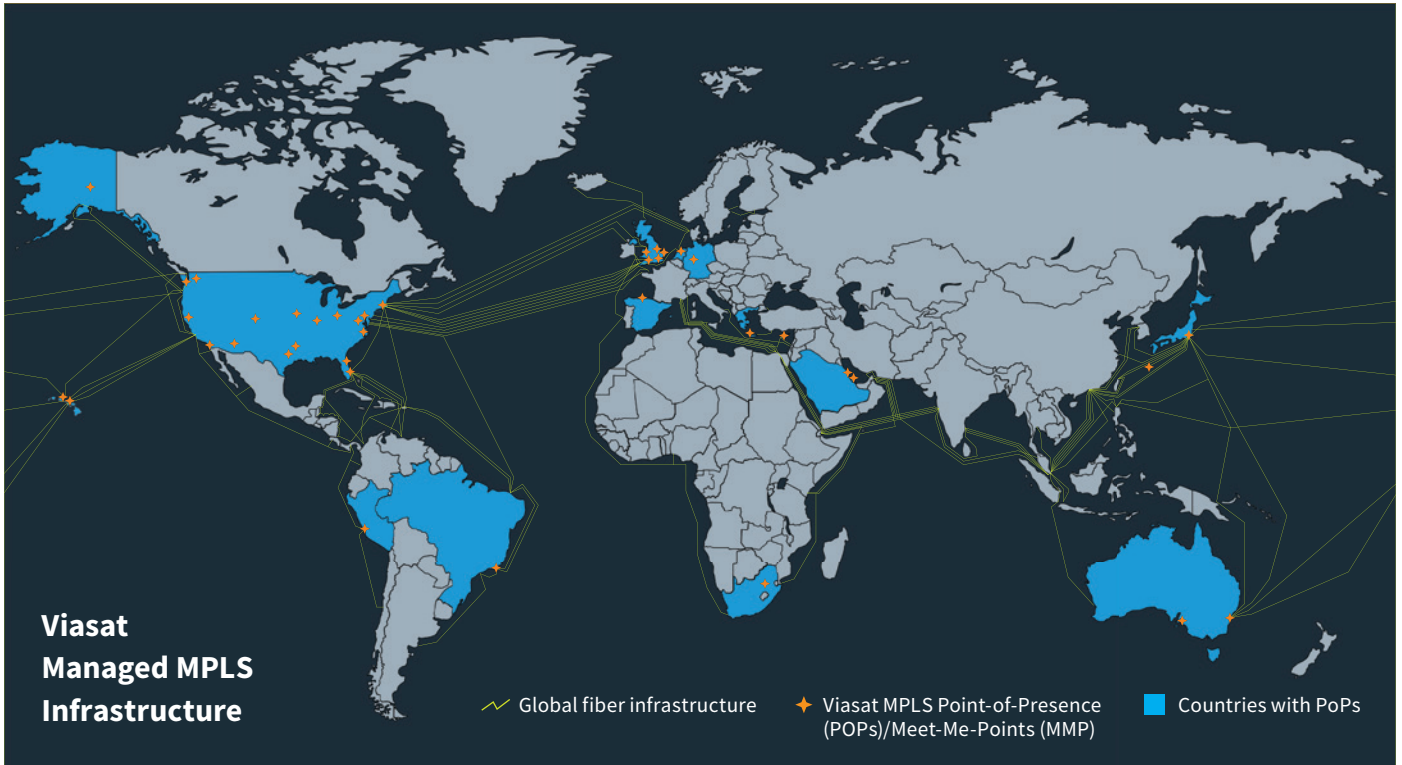
MPLS Design At-a-Glance

The Viasat Managed MPLS service is designed to connect Viasat hubs, Network Operations Center (NOC) sites, customer networks and/or datacenters and Meet Me Points (MMP), all while maintaining unique Service Level Agreements (SLA's) for each customer. The Managed MPLS backbone supports Virtual Routing and Forwarding (VRF) separation of customer traffic and routing from the Viasat Edge to the Customer endpoint. Our end-to-end networking can be accessed through a secure Internet access firewall.

The design includes:

- › Separation of traffic
- › Separation of routing tables
- › Separation of MPLS committed and burst bandwidth
- › Meet Me Points that allow for ease of customer endpoints connections

Viasat Managed MPLS



North America

- > Alaska
- > Arizona
- > California
- > DC
- > Florida
- > Hawaii
- > Illinois
- > Maryland
- > Nebraska
- > New York
- > Ohio
- > Texas
- > Virginia

South America

- > Brazil
- > Peru

Europe

- > Cyprus
- > Germany
- > Greece
- > Netherlands
- > Spain
- > United Kingdom

Middle East

- > Bahrain
- > Qatar

Africa

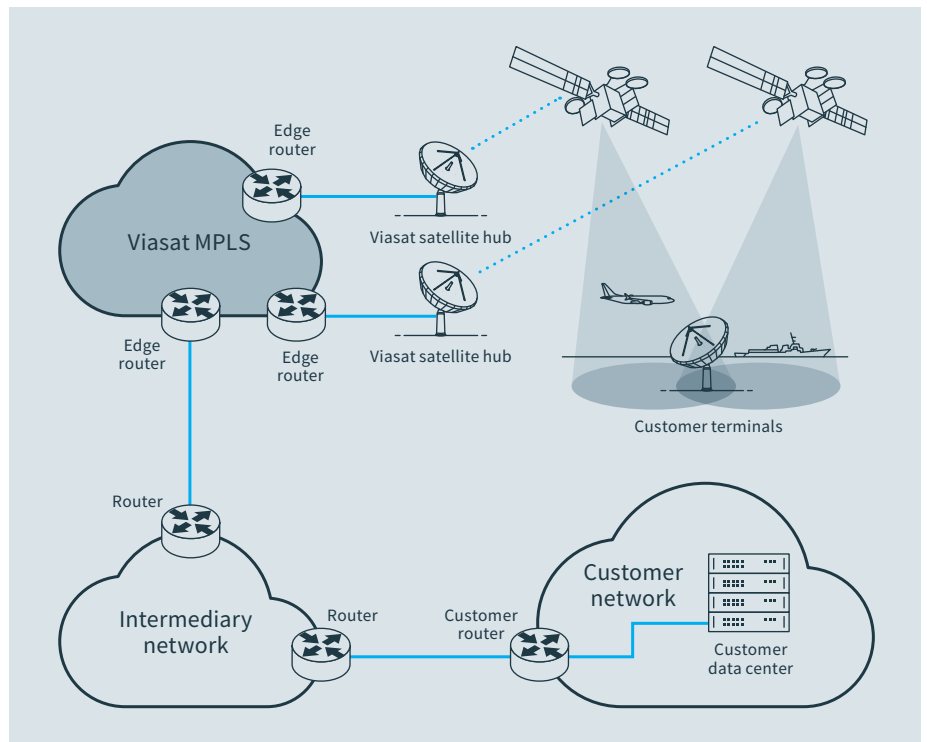
- > South Africa

Asia/Pacific

- > Australia
- > Japan

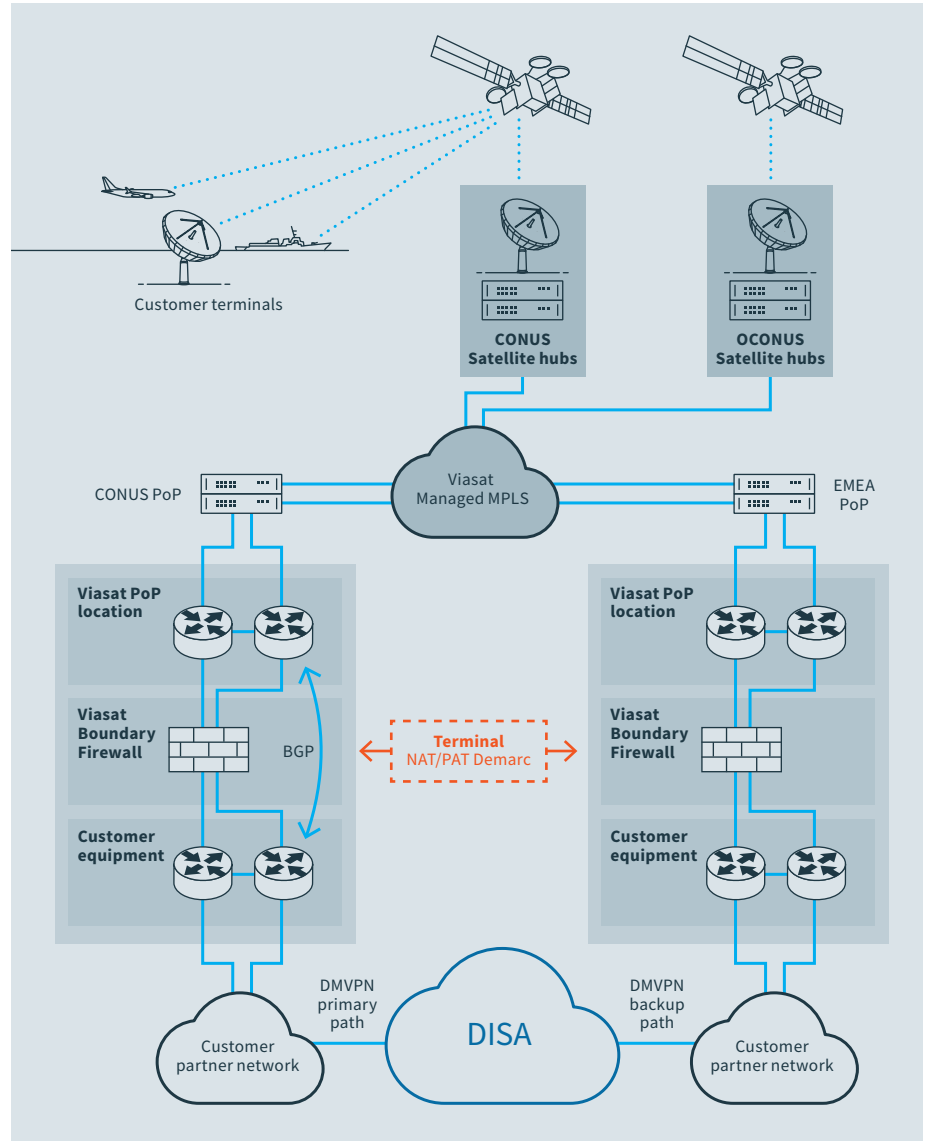
Network to networks design

The Viasat MPLS backbone can act as a transport to customer networks, the Internet or other networks to meet the customer's specific goals. In addition, customer transport can be segregated to ensure routing and traffic separation. Viasat can connect to a variety of intermediary networks including - government networks, existing partners or other transport the customer is currently using. The network to networks design can speed deployment when customers have existing partners that provide part of the network transport.



Viasat to government networks design

For customers that desire to send data to government networks, Viasat has multiple designs in place. Customers would follow the DISA Connection process guide to interface between Viasat and a government network, where the handoff to government networks is handled by the customers.



MPLS vs. ISP

Unlike an ISP, Viasat's Managed MPLS network provides a private terrestrial transport and enables mission continuity.

MPLS	ISP
› Controlled transport	› Cannot control Internet transport
› Low latency & very low jitter	› Varying routing paths and network congestion can result in latency variability (network jitter)
› Reduced network congestion	› Varying network congestion: A CIR on a ISP circuits is a guaranteed access rate, not a guaranteed end-to-end throughput
› Secure, private dedicated circuit (Point-to-point)	› Data is more easily accessed by sniffers
› End-to-End QoS	› QoS tagging is stripped across internet transport
› Terrestrial backhaul is flexible, scalable and expandable	
› Dedicated bandwidth and increased utilization	
› Enhanced end user experience	

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