

AZURE ORBITAL CLOUD ACCESS WITH SESSION SMART ROUTING

Azure Orbital Cloud Access with Cloud-Based SD-WAN

Challenge

- Satellite communications is essential for many applications in remote areas that involve high data collection to be processed in Azure
- Traditionally, satellite communications have provided low-throughput, high latency connectivity, frequently failing or degrading
- Organizations need adaptive, efficient and secure satellite access and inter-site global transport without incurring undue network complexity

Solution

- Session Smart Routing (SSR) provides Microsoft customers with optimum performance for multipath connectivity from the edge
- The tunnel free architecture using Secure Vector Routing (SVR) secures highly sensitive sessions and uses bandwidth efficiently
- Dynamic path selection of AI-driven SD-WAN allows appropriate use of multiple transports such as SATCOM, Fiber, or LTE

Benefits

- Multipath flexibility to and from Azure through Azure Orbital Cloud Access
- Zero-trust networking with deny-by-default approach
- Efficiently reduces bandwidth utilization by up to 30%
- Adaptive encryption for already-encrypted workloads saves CPU overhead
- Reduced overhead for business-oriented workloads such as Office 365 and Teams

About Azure Orbital Cloud Access

Azure Orbital Cloud Access, available in “Private Preview” [for US Government](#), is a new service providing customers with resilient connectivity to Azure from locations lacking conventional high speed access from a communications provider.

Transport options may include satellite (SATCOM), Long Term Evolution (LTE), or private fiber communications.

Azure Orbital Cloud Access components include:

- An antenna hardware service providing satellite communications
- An Azure Orbital Cloud Access software agent, which establishes secure connection to Azure and collects telemetry and monitoring of devices in the field

The agent will be deployed on an Azure Stack Edge (separately ordered) to run virtual and containerized applications for compute, storage, networking, and hardware-accelerated machine learning.

SD-WAN Solution with Juniper

Azure Orbital Cloud Access incorporates Juniper’s [AI-driven SD-WAN](#) with [Session Smart Routing \(SSR\)](#), enabling customers to prioritize connections between multiple transport paths. Incorporating Juniper’s SSR into Azure Orbital Cloud Access allows customers to prioritize and load balance connections.

Juniper’s SSR provides application-aware routing and fail-safe service delivery, orchestrated and automated with the Session Smart Conductor. Zero-trust networking principles are embedded as part of the routing framework with Juniper’s unique tunnel-free [Secure Vector Routing \(SVR\)](#) protocol, which ensures superior throughput of encrypted traffic and optimized bandwidth utilization (typically on the order of a 30% reduction).

Shown in *Figure 1*, the solution provides continual access to Microsoft services. Juniper’s SD-WAN allows customers to intelligently utilize multiple transport mechanisms and to make routing decisions about which transport to use, and when. For example, if customers have private fiber access and want to use SATCOM as a backup for resiliency, SD-WAN can affect this transition without operator intervention.



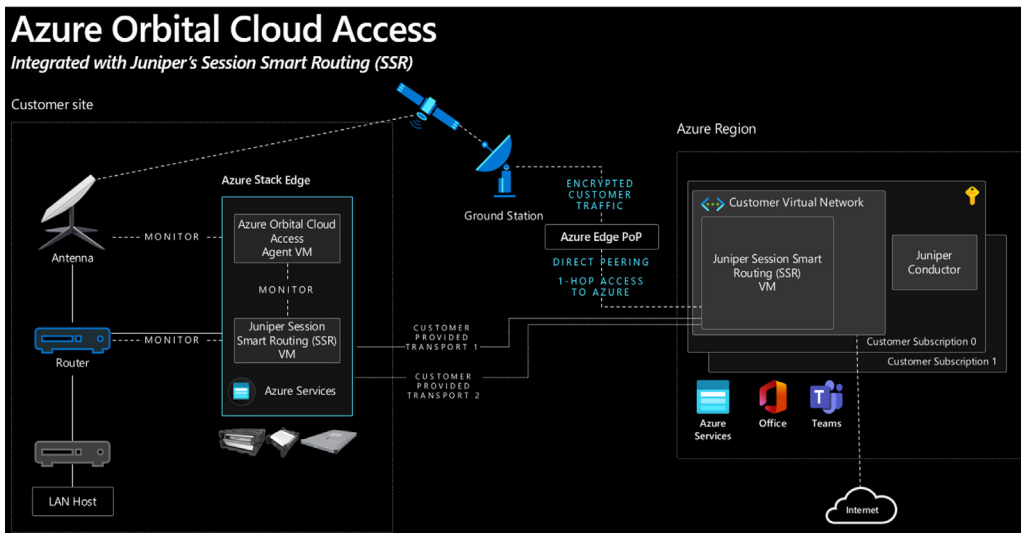


Figure 1: Azure Orbital Cloud Access Solution Architecture with Juniper SD-WAN

SSR is shown in a VM on both the Azure Stack Edge and in the Azure Cloud. It has the unique capability to maintain session state as network conditions change (i.e., become denied or degraded). SSR secures data traffic across the WAN with FIPS-certified data encryption, applied adaptively to unencrypted packets.

Once the edge device is configured and connected, customers can manage the Azure Stack Edge from the Azure Portal, deploy VMs onto the device, connect to other hosts on a local network, and connect to Azure resources in the region that is running the other SD-WAN tunnel endpoint.

Use Cases

Sample use cases may be civilian (i.e., domestic emergency service such as wildfire containment) or military (such as field reporting from hostile territories). In the example shown in Figure 2, the field operation includes video collected via a drone, as well as critical monitoring for fuel sensors.

The traffic is prioritized across multiple transport options—SATCOM, MANET, or cellular—between the network edges. When transport options become disconnected or degraded, or incur too much latency, the solution provides automatic path selection to an alternative transport.

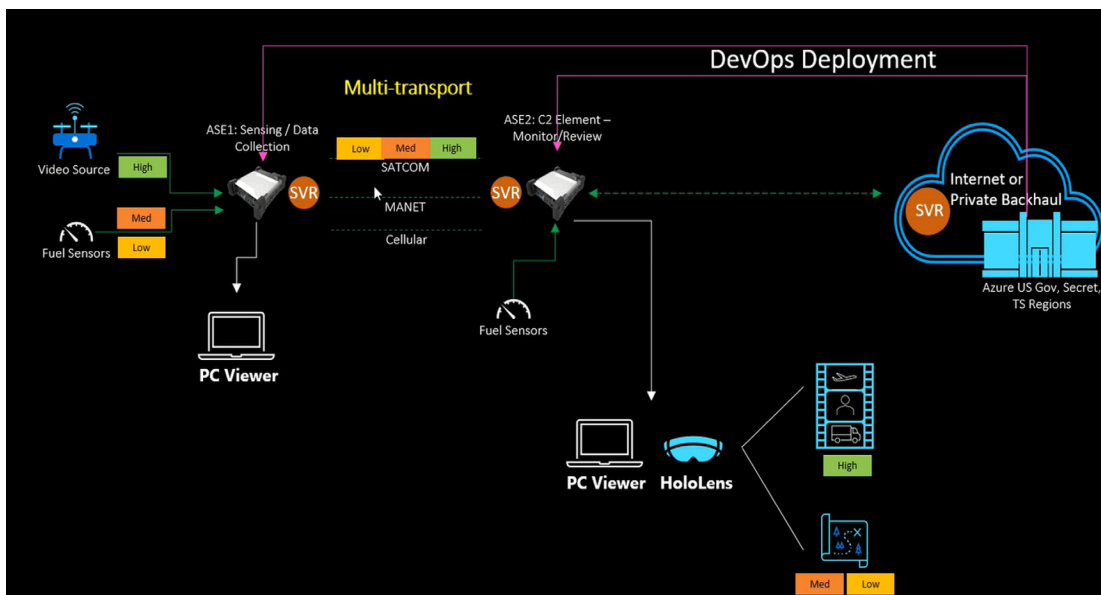


Figure 2: Sample Deployment

Call to Action

Azure Orbital Cloud Access is available in a Private Preview program through the Azure Government portal. Juniper has created a tailored offering in the [Azure Government Marketplace](#) for Microsoft's private preview of Azure Orbital Cloud Access.

Juniper's SSR option for Azure Orbital Cloud Access will be an SD-WAN virtual machine (VM) that can be leveraged through acceptance into the Private Preview Program. Interested customers for this Private Preview are welcome to consult their Juniper or Microsoft account teams for more information.

Conclusion

Juniper's Session Smart Routing (SSR) for Azure Orbital Cloud Access provides a secure and high-performance SD-WAN solution for field operations in many civilian and military use cases.

Resources

Web Pages

- [Session Smart Router](#)
- [Secure Vector Routing](#)
- [AI-driven SD-WAN](#)
- [Mist AI and Cloud](#)
- [Azure Marketplace](#)
- [Azure Government Marketplace](#)
- [Azure Stack Edge](#)
- [Juniper on Azure](#)

Protocols and Standards

- [Secure Vector Routing](#)

Solution Briefs

- [Session Smart Routing: How it Works](#)
- [AI-driven SD-WAN Secures Today's Cloud Era Networks](#)
- [Maximizing Azure ExpressRoute Performance with AI-driven SD-WAN](#)

Data Sheets

- [Session Smart Routing including Session Smart Conductor](#)
- [SSR 100 Line of Routers](#)

Microsoft Announcements and Blogs

- [New products enable digital resiliency and empower the space industry with Azure](#)

Microsoft Documentation

- [Azure for US Government](#)
- [Azure Government Marketplace](#)

About Juniper Networks

Juniper Networks brings simplicity to networking with products, solutions and services that connect the world. Through engineering innovation, we remove the constraints and complexities of networking in the cloud era to solve the toughest challenges our customers and partners face daily.

At Juniper Networks, we believe that the network is a resource for sharing knowledge and human advancement that changes the world. We are committed to imagining groundbreaking ways to deliver automated, scalable and secure networks to move at the speed of business.



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