

# DELIVER UNIFIED EMPLOYEE EXPERIENCES WITH SESSION SMART SD-WAN

Support business-critical applications like video conferencing, and enhanced calling capabilities while eliminating complexities and reducing costs

## Challenge

Modern UC is complex, with communications tools such as e-mail and chat, virtual meetings, video services, call control, and more. Traditional SD-WAN solutions can't meet the demands these applications put on the network due to high bandwidth overhead, hub-and-spoke designs, poor performance, and high costs.

## Solution

The Session Smart SD-WAN solution dramatically reduces complexity and overhead with its tunnel-free design, meeting UC requirements with intelligent routing, instantaneous failovers, load balancing, any-to-any connections, and built-in security.

## Benefits

- Ensures that UC services use the best, most efficient pathways
- Does not require tunnels, so no calls are dropped
- Supports inherent load balancing to different service locations
- Uses any-to-any connections which are set up dynamically at runtime
- Uses zero trust and adaptive encryption for the security of all enterprise communications

Communications are the lifeblood of any organization. In order to be productive and able to respond quickly, employees need to have secure and reliable communications across a plethora of platforms and tools.

An independent survey conducted by Webtorials<sup>1</sup> found that employees spend more than two-thirds of their day communicating and collaborating, and almost 15% of total work time is lost or wasted because of inefficient or ineffective communications. This implies that companies lose nearly \$11,000 per employee/per year as a result of poor communications services. By enabling an efficient unified communications (UC) platform, enterprises can save millions of dollars in operational costs.

One way for enterprises to improve UC experiences is to leverage software-defined WANs (SD-WANs). This enables organizations to leverage multiple heterogeneous networks to improve resiliency, guarantee application-specific service-level agreements (SLAs), and integrate functions that once required standalone middleboxes.

With the Juniper® Session Smart™ SD-WAN solution, enterprises can take advantage of unique UC and SD-WAN services because it provides the ability to conserve bandwidth, guarantee SLAs, use alternate paths for existing traffic, and provide complete visibility of sessions as they cross the network. These advantages allow enterprises to provide unparalleled communications services that enable their employees and improve their business operations.

<sup>1</sup><http://www.webtorials.com/content/2017/03/2017-productivity-report.html>

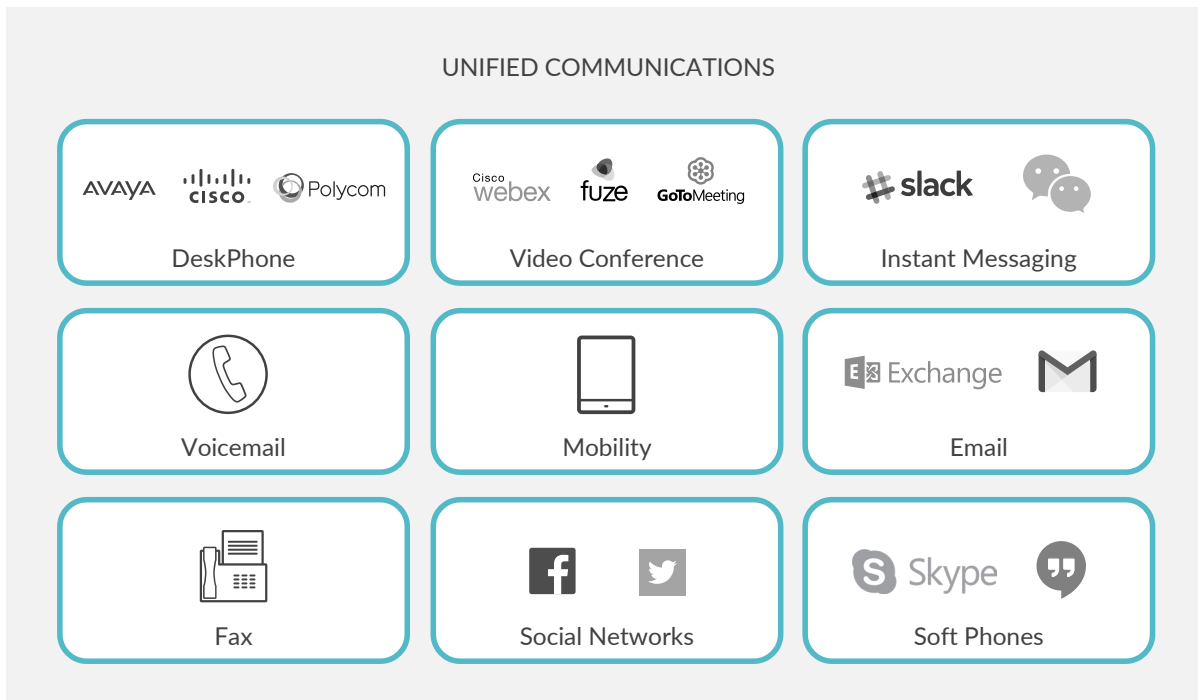


Figure 1: Unified communications (UC)

## The Challenge

Modern UC has grown quite complex, with a plethora of communications tools such as text-based communications (e-mail, chat), Web conferencing (virtual meeting rooms, interactive whiteboards), voice applications (telephony, audio conferencing, voicemail), video services (telepresence, broadcasting), collaboration (file sharing, screen sharing), and numerous other tools. COVID 19 related WFH requirements, Globalization, remote work, and cloud have also added to UC challenges.

Many common networking issues within enterprises stem from UC complexities. These include bandwidth inefficiencies, security gaps, and high operational costs, to name just a few. At the same time, organizations increasingly rely on low cost Internet and other links to securely deliver UC services to their employees; however, these links can suffer from delay, jitter, and loss depending on various factors.

Simply put, traditional SD-WAN solutions are not able to meet the demands that UC tools put on the network due to high bandwidth overhead, hub-and-spoke designs, poor performance, and high costs. Think about when an Internet link degrades—UC services using this link suffer from issues such as dropped calls, weak signals, and lossy video. This tremendously degrades the employee’s network experience and can lead to a decline in productivity plus higher costs.

## The Juniper Networks Session Smart SD-WAN Solution

A Session Smart SD-WAN dramatically reduces UC complexity and overhead with its tunnel-free design. As part of the solution the Juniper Session Smart Router is deployed in branch and data center locations. These routers monitor network pathways between them for various performance characteristics. UC services are then directed over the best possible pathways toward endpoints at any given time.

UC Service delivery is done without any tunnels. Avoidance of tunnels results in the ability to provide granular quality of service (QoS) for application SLAs, instantaneous failovers, and efficient delivery. Congestion is also improved with 30-50% bandwidth savings. Application identification ensures that video and voice sessions are prioritized over other traffic.

The Juniper Session Smart SD-WAN solution is FIPS-140-2 and ICSA corporate firewall certified and follows a zero trust security model, which ensures security of all enterprise communications. Flexible and dynamic segmentation also ensures superior policy control for different UC services, while adaptive encryption prevents double encryption and saves resources.

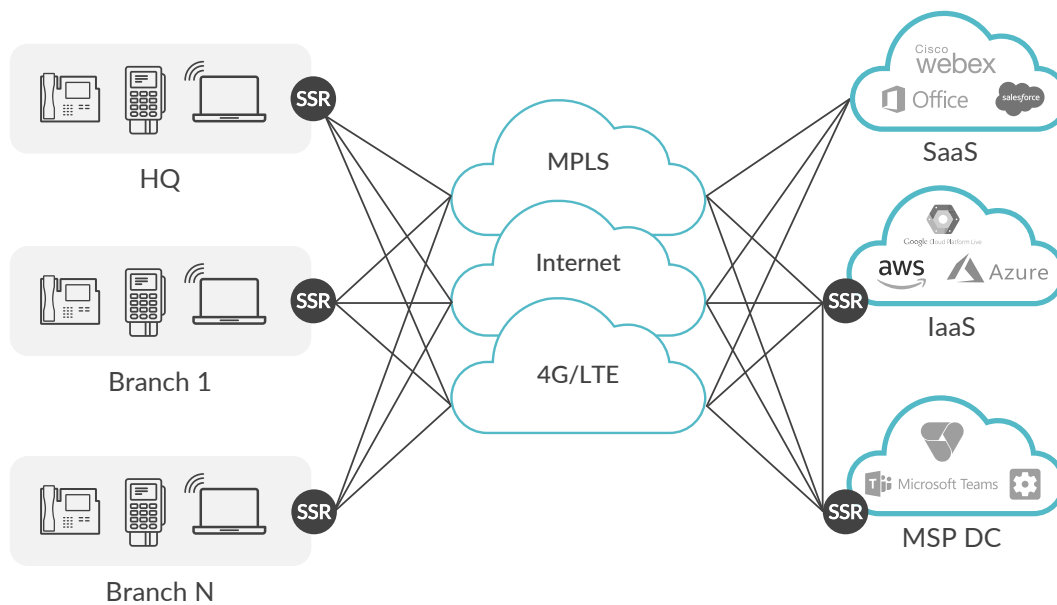


Figure 2: Unified Communications with Juniper Session Smart SD-WAN

When UC sessions are migrated to different pathways over a Session Smart SD-WAN network, no delay is incurred during performance degradation or failovers, ensuring calls are never dropped. Integrated functions like load balancing, WAN optimization, firewall, and other functions also allow for the removal of middleboxes, further simplifying the network. And dynamic and global policies ensure elastic services.

Leading providers of unified communications such as Revation Systems and ConvergeOne have successfully used the Session Smart SD-WAN to deliver superior solutions to their end customers. The solution has also been integrated and tested with many cloud communication solution providers such as Ribbon Communications and AudioCodes.

### Features and Benefits

The Session Smart SD-WAN solution provides the following unique advantages that meet the needs of modern UC services.

Table 1: Session Smart SD-WAN Features and Benefits

| Network Requirement for UC | Traditional WAN and Legacy SD-WAN   | Session Smart SD-WAN   |
|----------------------------|---|--|
| Intelligent routing        | <ul style="list-style-type: none"> <li>Does not consider demand, capacity, and performance of links when choosing traffic pathways.</li> <li>Legacy SD-WAN controllers only hash to tunnels with one-dimensional preset conditions.</li> <li>This results in poor performance for UC as application-specific SLAs are not met.</li> </ul>   | <ul style="list-style-type: none"> <li>Monitors all pathways in the network.</li> <li>Able to select efficient pathways for different UC services based on delay, jitter, loss, mean opinion score (MOS), link loads, server loads, or path costs.</li> <li>This ensures that UC services use the best possible network pathways.</li> </ul> |
| Instantaneous failovers    | <ul style="list-style-type: none"> <li>Backup tunnels must be established and kept alive at all times.</li> <li>This results in high costs and poor scale.</li> <li>Runtime tunnel reestablishment is slow, resulting in dropped calls and poor user experience.</li> </ul>   | <ul style="list-style-type: none"> <li>Does not require tunnels.</li> <li>This results in cost savings as backup connections do not need to be kept alive.</li> <li>Failovers are always instantaneous as there is no tunnel establishment time.</li> <li>Calls are never dropped.</li> </ul>  |
| Load balancing             | <ul style="list-style-type: none"> <li>Requires service chaining with load balancers, increasing cost and complexity.</li> <li>Elastic changes require reconfiguration of edge devices with access control lists (ACLs), which is manual, time-consuming, and prone to human errors.</li> </ul>   | <ul style="list-style-type: none"> <li>Supports inherent load balancing to different service locations.</li> <li>This enables use of distributed data centers, disaster recovery, and cloud bursting.</li> <li>Elastic loads can ensure that call loads are always met.</li> </ul>   |
| Any-to-any connections     | <ul style="list-style-type: none"> <li>Cannot maintain high number of tunnels, which results in hub-and-spoke designs.</li> <li>This leads to traffic tromboning, use of inefficient pathways, and high latencies.</li> <li>High packet overhead results in higher bandwidth usage which causes congestion and poor performance.</li> </ul> | <ul style="list-style-type: none"> <li>Utilizes any-to-any connections which are set up dynamically at runtime.</li> <li>This results in the selection of best possible pathways without any tromboning.</li> <li>Tunnel-free delivery ensures efficient bandwidth usage and superior QoS.</li> </ul>  |
| Built-in security          | <ul style="list-style-type: none"> <li>Relies on perimeter security, which does not work with BYOD and remote users.</li> </ul>   | <ul style="list-style-type: none"> <li>Zero trust security and adaptive encryption ensure superior security of all enterprise communications.</li> </ul>   |

## Solution Components

Juniper Session Smart SD-WAN  
Juniper Session Smart Router

## Summary—Unified Communications and Employee Experiences with Session Smart SD-WAN

Enterprises today need UC solutions that support a multitude of business operations and employee activities while eliminating complexity and reducing costs. By building a network where services use the best possible pathways, enterprises can deliver a high level of QoS with complete visibility into all sessions across the network. Session Smart SD-WAN enables unparalleled UC services to employees with an agile network that can do what the business needs whenever it needs it.

### Next Steps

To learn more about Juniper Session Smart SD-WAN, please contact your Juniper account representative or go to [www.juniper.net](http://www.juniper.net).

## 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.

### Corporate and Sales Headquarters

Juniper Networks, Inc.  
1133 Innovation Way  
Sunnyvale, CA 94089 USA  
Phone: 888.JUNIPER (888.586.4737)  
or +1.408.745.2000  
Fax: +1.408.745.2100  
[www.juniper.net](http://www.juniper.net)

### APAC and EMEA Headquarters

Juniper Networks International B.V.  
Boeing Avenue 240  
1119 PZ Schiphol-Rijk  
Amsterdam, The Netherlands  
Phone: +31.0.207.125.700  
Fax: +31.0.207.125.701

**JUNIPER** NETWORKS | Engineering  
Simplicity

