

OPTIMIZING 0365

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Introduction

At 128 Technology, we believe that networks exist to connect users to services and applications, and network design should start with those services at the core. The 128T Routing and SD-WAN Platform takes distributed, software-defined networking and routing to an entirely new level by speaking the language of applications, which are sessions. We simplify the traditional method of routing by IP and instead apply a mindset of “routing with words” that we call “Session Smart™ routing. Session Smart routing improves network simplicity and agility by eliminating tunnels and providing session-awareness between endpoints. Our platform is comprised of two primary components that are software-defined: the 128T Session Smart Router and the 128T Conductor. Together, they form a single logical control plane that is highly distributed and a data plane that is genuinely session-aware.

The 128T Networking Platform puts organizations in control of session directionality while offering fine-grained segmentation and encryption of all data in motion. Session Smart technology enables critical business SaaS workloads such as Office 365 that deliver mission-critical applications like Microsoft Word, Microsoft Excel, Microsoft Outlook, Microsoft SharePoint, Microsoft OneDrive, and Microsoft Teams. Microsoft has certified 128 Technology as a designated qualified networking solution that meets the requirements for [“Works with Office 365”](#). The solution enables a simple setup and high-quality experience. Optimizing and routing Office 365 traffic to the closest service endpoints with the least amount of latency results in the best end-user experience and is key to the success of workforce productivity. 128 Session Smart Technology adheres to these key networking constructs and follows the requirements under the Office 365 network connectivity principles to ensure that any 128T router will efficiently and intelligently:

- Identify Office 365 network traffic using Microsoft recommended endpoint API
- Allow local branch egress of Office 365 network traffic to the internet from each location where users connect to Office 365
- Allow Office 365 traffic to bypass proxies and packet inspection devices
- Prioritize Office 365 traffic to avoid congestion

Figure 1 shows the recommended practice method for Office 365 traffic to provide the optimal experience with the least amount of latency.

Figure 1. Office 365 Recommend best practice of optimal user experience.



Whether end-users are accessing Office 365 applications over Express Routes, over Internet and MPLS connections from the SD-Branch, and/or over Internet and wireless connections from home, 128 Technology enables the best economic savings with reduced bandwidth and scalability to thousands of locations to route services. This seamless experience is delivered while reducing IT costs for hardware and continuous high-speed session failovers to alternate circuits in case of failures.

Identify and Differentiate Office 365

As customers migrate to Office 365—there is a need to allow and provide special consideration to various workloads in the Office 365 product sets, such as Teams, OneNote, Exchange Online, and so on. In an ever-changing cloud-first world, the method of IT manually whitelisting IP addresses for these SaaS services is not a scalable practice. Therefore, leveraging a published JSON file from Office 365 team simplifies the process for IT to scale out.

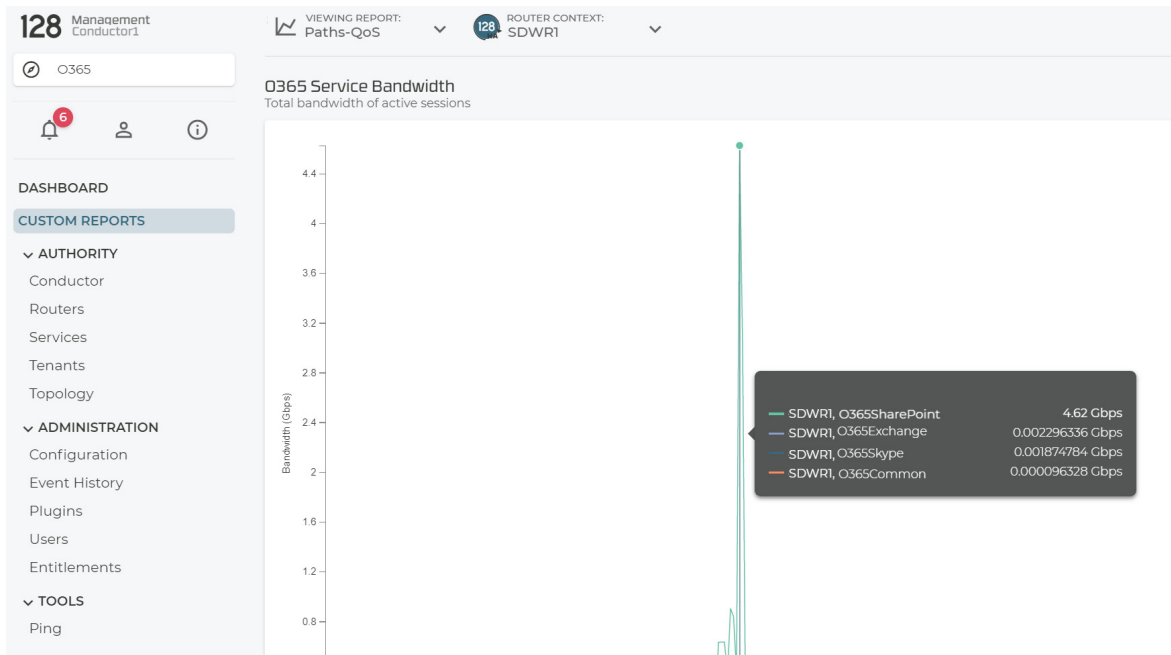
The 128T Session Smart routing platform has several techniques by which it can associate traffic to named applications. This is sometimes referred to as “[Application Identification](#)” (or “applID”), and the feature that allows administrators to define network policies using dynamically learned content instead of static IP addresses. The 128T Conductor includes a Office 365 application ID module that can easily be imported to apply the policies to identify the Office 365 services. To classify Office 365 traffic, the 128T Session Smart router leverages the [REST-based web service](#) from the Microsoft site for the purpose of categorizing Office 365 traffic. A network administrator can assign actions to take for such traffic, depending on the needs of the organization. Identifying Office 365 network traffic is the first step in being able to differentiate that traffic from generic Internet-bound network traffic. A step-by-step process that outlines the 128T Application Identification is located in our [128T Docs for O365](#).

Figure 2. Office 365 services identified by 128T

Name	Description	Service Group	Security
_conductor_1			
_conductor_128T-SCUS_1			
Default-Internet			
LAN-Service			
O365-Common	Microsoft 365 Common and Office Online		
O365-Exchange	Exchange Online		
O365-SharePoint	SharePoint Online and OneDrive for Busi...		
O365-Skype	Skype for Business Online and Microsoft ...		

The 128T router can monitor latency, jitter, loss, and loads over these different paths and choose the optimal path for sending Office 365 traffic, thereby guaranteeing performance for those sessions as needed. Selecting the optimal path will help minimize and stabilize latency between users and the Office 365 application. . If multiple connections are available, then the 128T router can monitor SLAs over these different paths and direct Office 365 traffic accordingly.

Figure 3. Office 365 application prioritization over Direct Internet Access



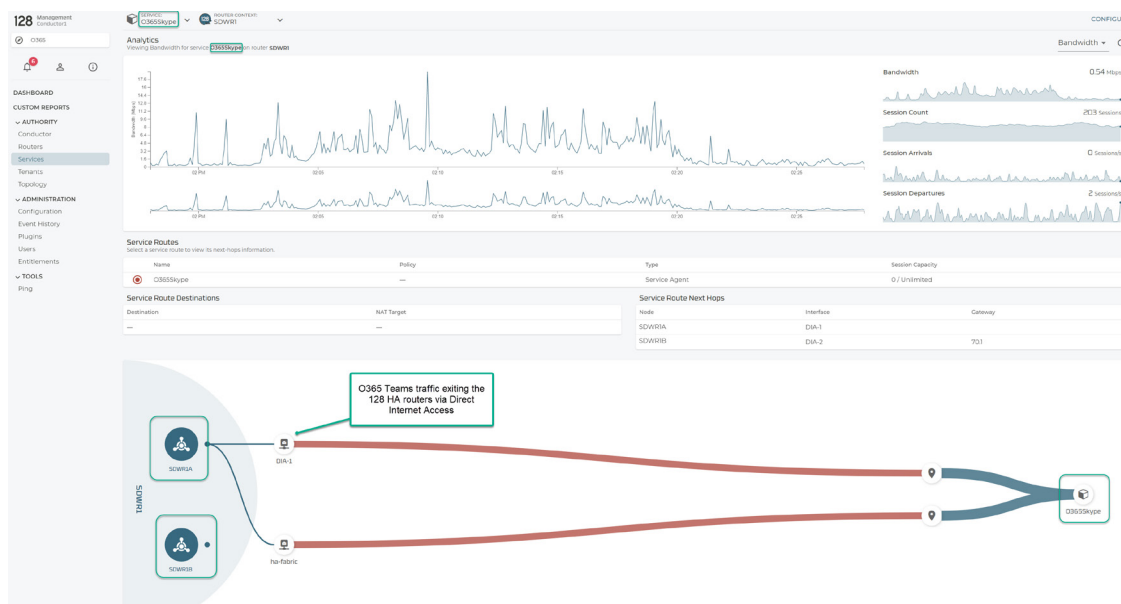
Connecting to the closet Office 365 PoP via DIA

Ensuring that users connecting to the nearest Office 365 PoP, whether from an SD-Branch or HQ, is critical to a successful experience. In an SD-WAN deployment, Direct Internet Access (DIA) for Office 365 services should be applied with the highest level of priority and appropriate policies apply to minimized unnecessary latency.

Microsoft operates an extensive global network that includes many front-end servers around the world. In most cases, there will often be a network connection and front-end server close to the user's location. The 128T solution does not require VPNs or tunnels to a central location. The tunnel free solution with no encapsulation ensures that Office 365 traffic can be easily identified.

The 128T router follows a zero-trust security model without requiring backhauling traffic to a cloud security provider. This in turn, provides users with local Internet egress and local DNS resolution, while ensuring the traffic destined for Office 365 can connect to the closest Microsoft's global Front Door Servers. Shortening the network path reduces latency to improve Office 365 performance.

Figure 4. Shows Office 365 Skype for Business/Teams traffic leaving the routers via Direct Internet Access

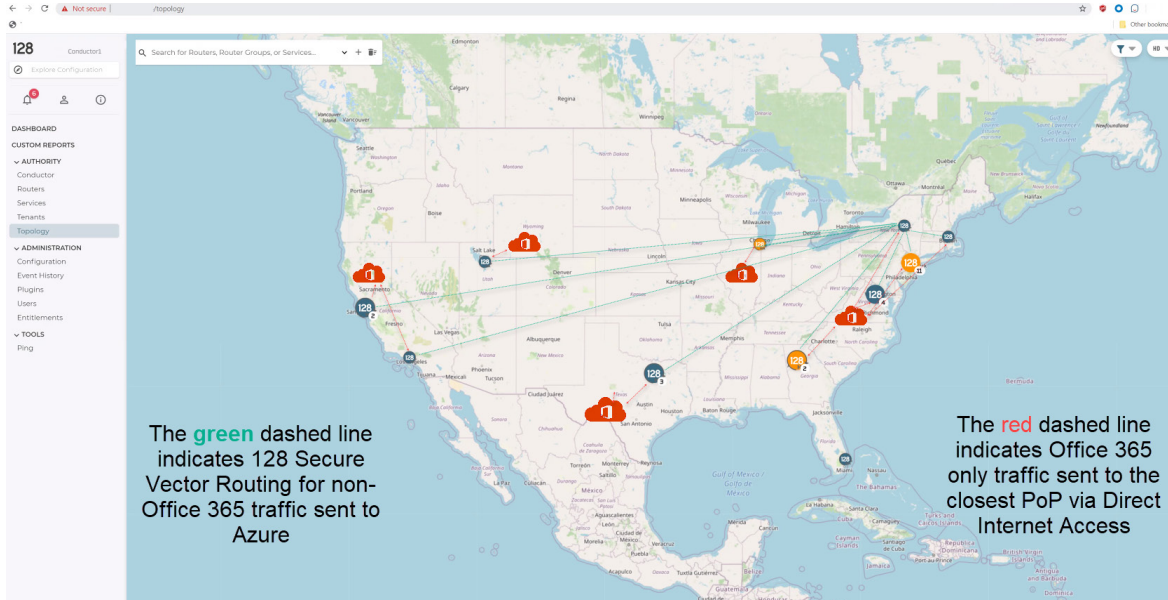


Customer Use Case

A financial services customer utilized Office 365 as a collaboration platform for its users and also took advantage of Azure to host many of their internal applications. The customer deployed 128T Routing and SD-WAN solution in their on-premises environment including branch offices and HQ data center and extended it into Azure. Leveraging SD-WAN to enable secure and local Internet based egress from user locations was key to solve application performance issues, reduce latency for Office 365 and save costs of leased MPLS lines. With multiple branch offices, a main Datacenter and a footprint in Azure, this customer removed their leased lines and leveraged Internet bandwidth, Secure Vector Routing and SD-WAN solution from 128 Technology.

The less expensive direct internet lines used for circuit failover were leveraged for highest priority and session state routing for Office 365 applications. All other non-Office 365 traffic was sent over the internet with no tunnel using Secure Vector Routing to the main HQ data center. Traffic to Azure applications was sent using Secure Vector Routing to Azure. This new digital transformation architecture enabled substantial economic savings, better performance for Outlook, OneDrive, SharePoint, and Team, for the customer, provided connectivity to Azure applications, while saving CAPEX on bandwidth costs.

Figure 5. 128T Conductor management portal managing multiple branches with each branch having Direct Internet Access to send Office 365 traffic to the closest PoP. Each branch is connected to Azure head-end router via standard ISP circuits with Secure Vector Routing and no tunnels.



SUMMARY

The 128T Session Smart router can automatically identify Office 365 traffic dynamically and efficiently. Based on policies set by the network administrator and the connectivity options available, the 128T Session Smart router can ensure that Office 365 traffic is sent over the best possible paths with the least amount of latency. Ensuring that crucial workload traffic for Office 365 has higher priority over low-value traffic verifies the best end-user experience. Networks can get congested, and Internet links can suffer. It matters what the router does during those critical periods to provide an optimal experience to the end-user. 128T Session Smart routers are built to deliver exceptional SaaS and Office 365 experiences from any location.

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ABOUT 128 TECHNOLOGY

At 128 Technology we help our customers radically reinvent their digital futures based on a new model for virtual networking called Session Smart™. Session-smart networking enables enterprise customers and service providers to create a service-centric fabric that's more simple, agile, and secure, delivering better performance at a lower cost. Whether your enterprise is moving your business to the cloud, modernizing the WAN edge, seeking more reliable unified communications or pursuing an industrial internet of things (IIoT) initiative, session smart networking re-aligns networks with digital transformation initiatives.