

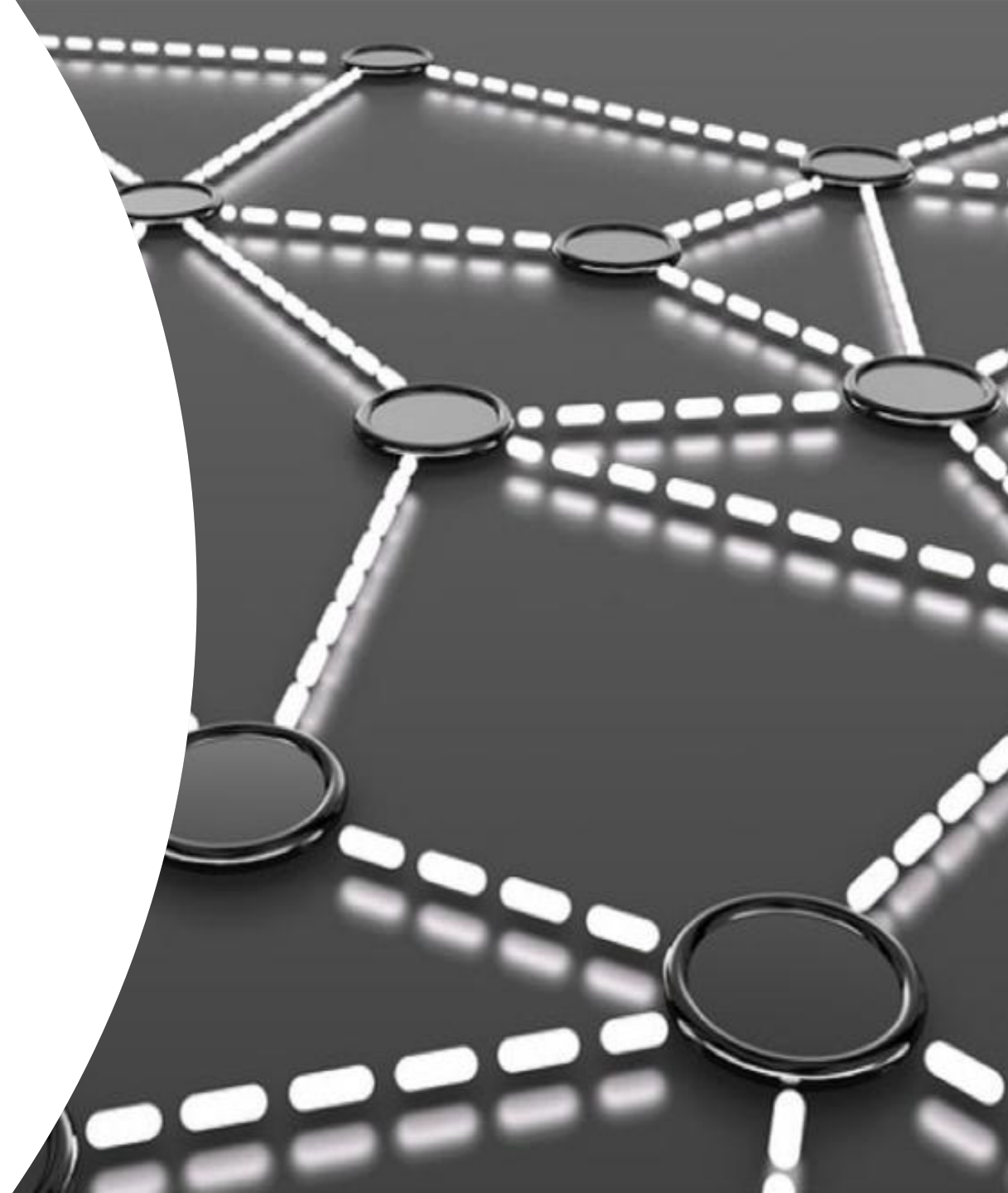


시트릭스 SD-WAN을 이용하여 WAN 수퍼하이웨이를 통해 클라우드로 이동하기

박병석

Lead Systems Engineer

2019년 2월 21일



어떤 산업이 SD-WAN을 필요로 하는가?



금융/
은행/ ATM 백홀



소매업/
POS (Points of sales)



운송 및 물류업



지사/ 창고업/
제조업

비즈니스에서 WAN 의존도는 증가하고 있습니다

기업의 WAN 트래픽은 2018년까지 연간 15% 증가

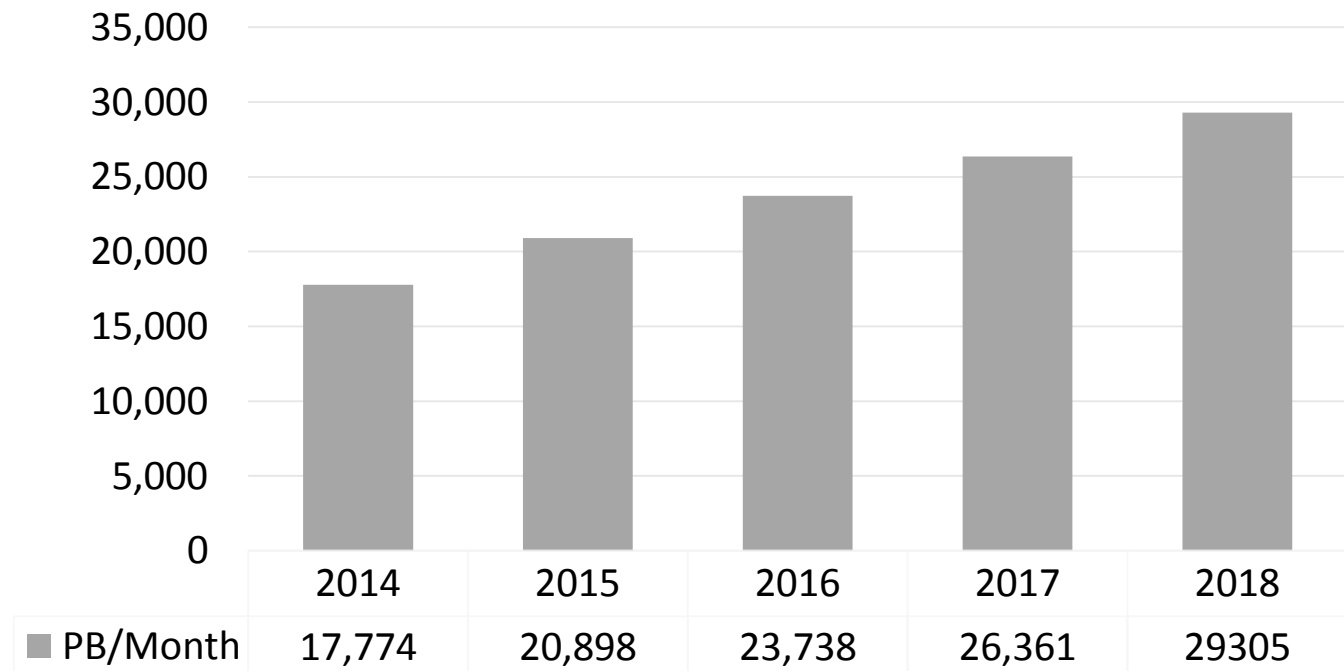
가상화 애플리케이션

SaaS 애플리케이션

비디오 기반 콘텐츠

VoIP 및 컨퍼런스

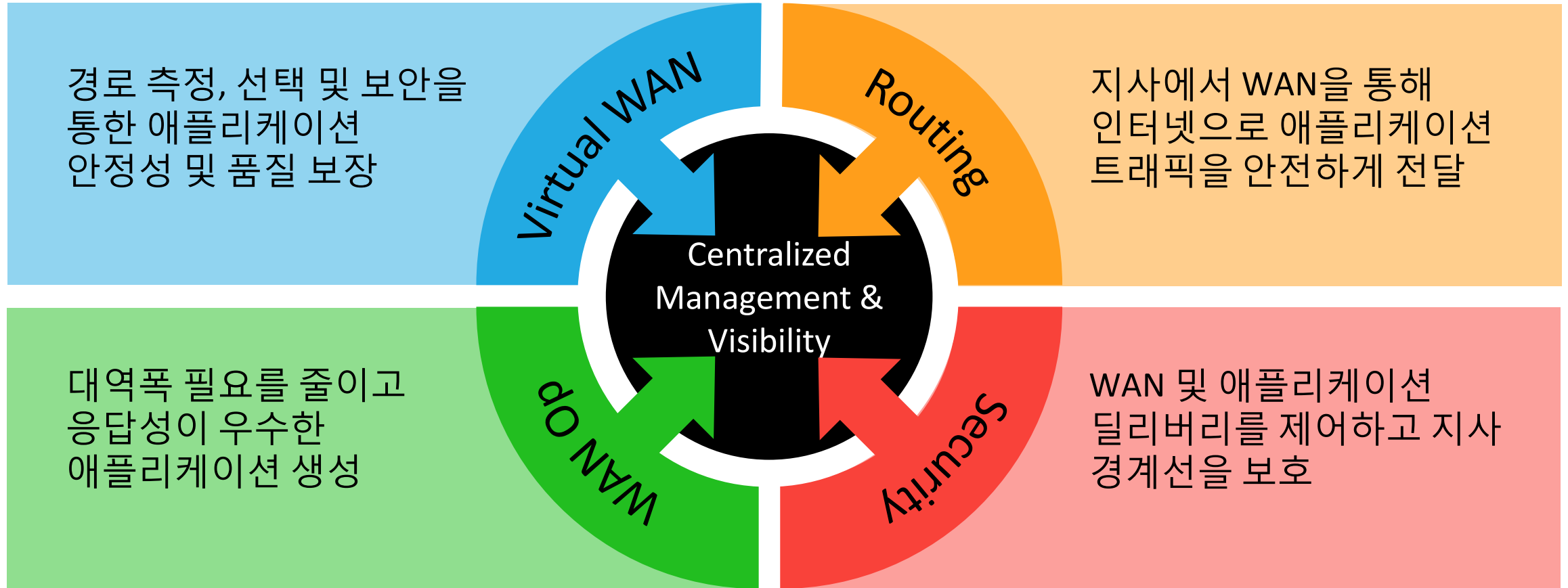
기업 WAN 트래픽



출처: Cisco Visual Networking Index: 예측 및 방법론, 2013 - 2018

시트릭스 SD-WAN: 통합 WAN Edge Platform

필요한 모든 것이 내장되어 있습니다.



Citrix-Microsoft 파트너쉽

- 데스크톱으로부터 멀티클라우드 진화까지

Microsoft



CITRIX®

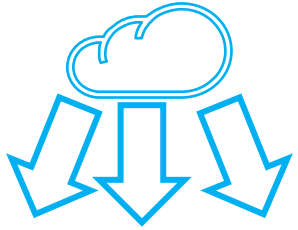
윈도우즈를
위한 가상
데스크톱

Azure
Virtual WAN
을 위한 SD-
WAN

Azure
DNS
를 위한
ADC

Office 365를
위한
SD-WAN

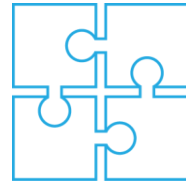
새로운 공동 솔루션 효과 요약



DIY 또는 Managed
SD-WAN



CapEx 비용
절감



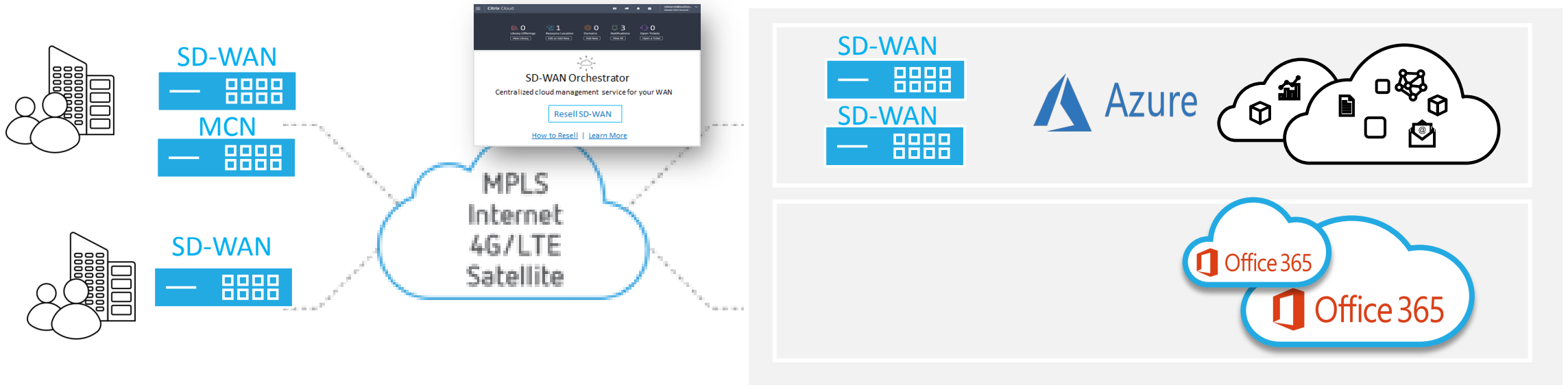
멀티클라우
드 통합



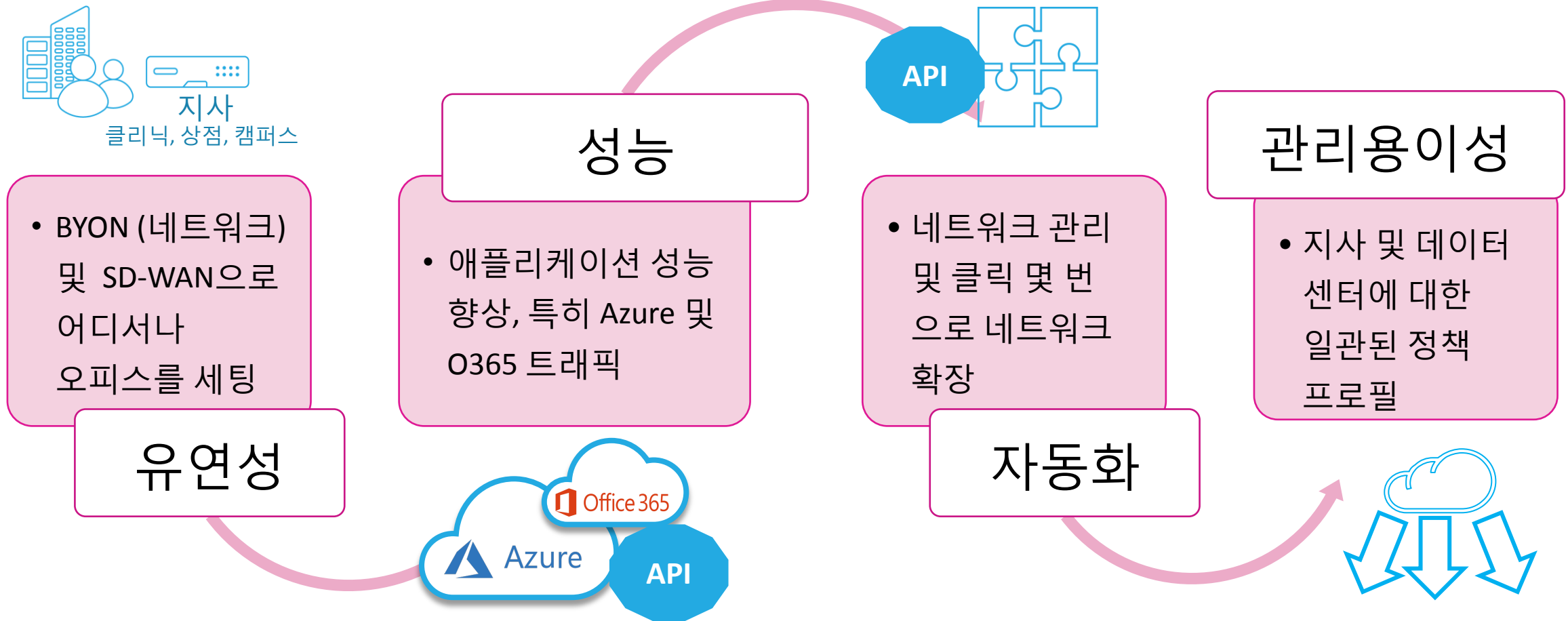
지사-Azure 연결
설정 자동화



애플리케이션
성능 개선

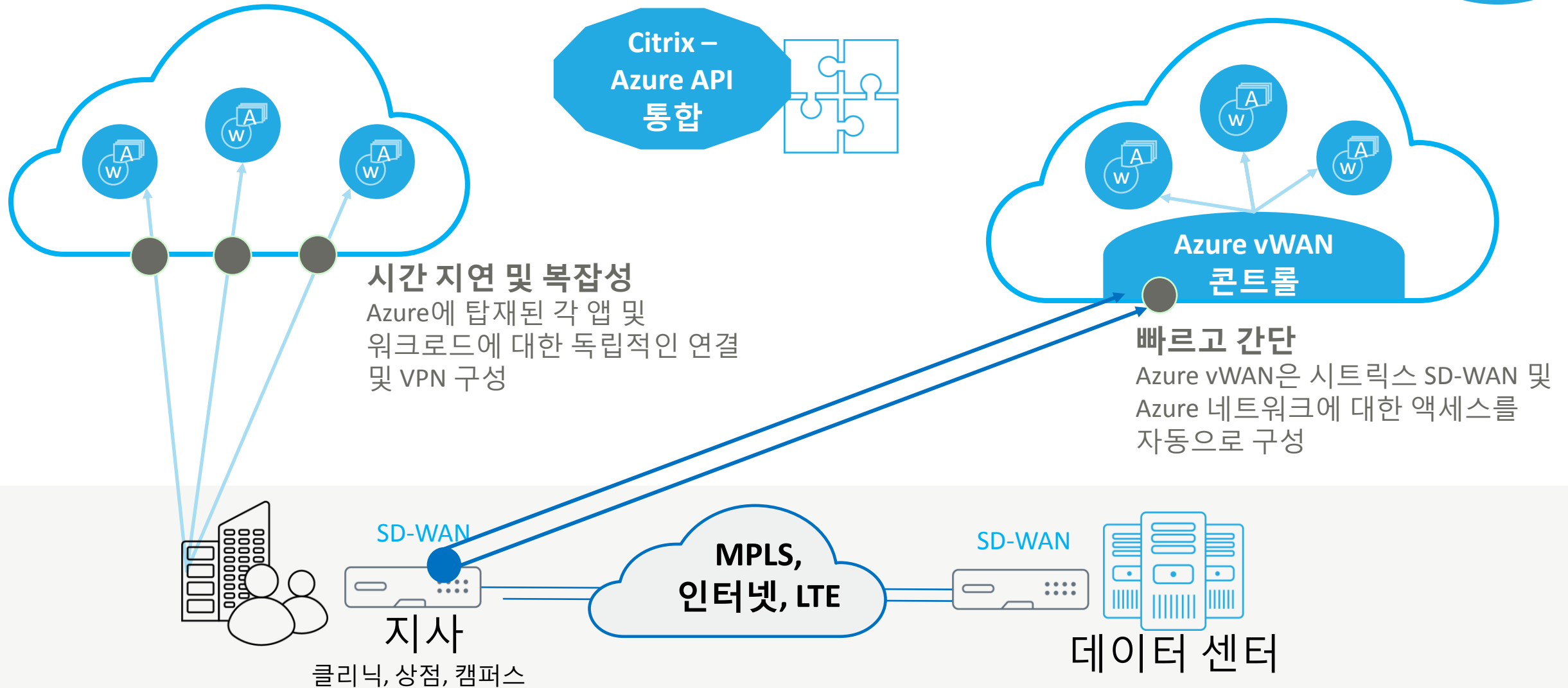


마이크로소프트 클라우드 기능을 극대화



빠른 온보딩 및 Azure 액세스

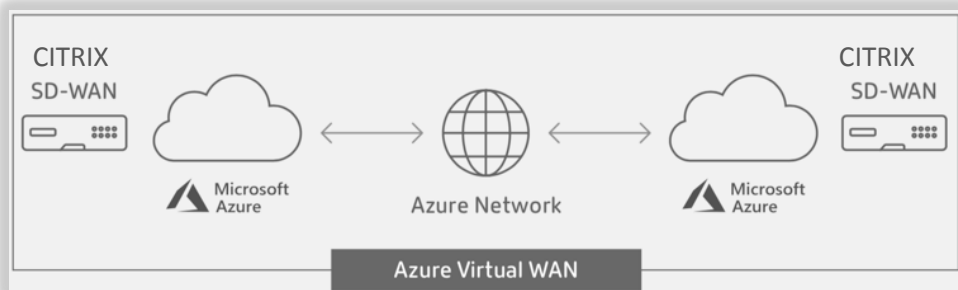
자동화 및
탄력성



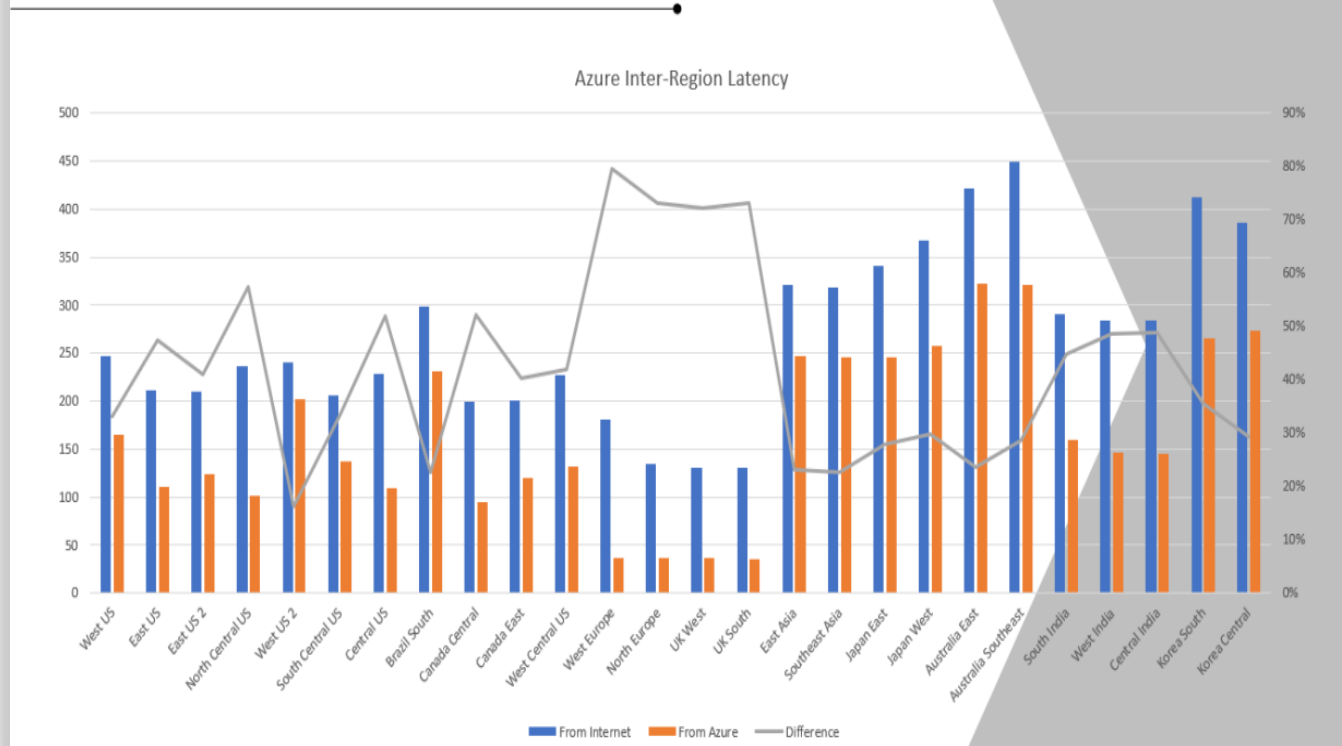
Azure Virtual WAN 시트릭스 SD-WAN은 70%까지 지연을 줄입니다.

성능 향상

- 차트에서 시트릭스 SD-WAN을 이용한 Azure vWAN내에서의 액세스와 레거시 라우터를 이용한 표준 인터넷 비교. 지연 감소가 %로 표시.
- 30% (인터 리전) 및 70% (인트라 리전) 감소



Azure Networking



<https://appdelivery.wordpress.com/2018/09/14/citrix-and-microsoft-azure-virtual-wan/>

매니지드 SD-WAN으로 VDI 및 DaaS 성능 개선

성능 향상

“VDI와 DaaS를 사용하는
고객은 용량과 탄력성을 위해
SD-WAN을 고려해야 합니다.”

가트너

VDI와 DaaS로 인해 엔터프라이즈 아키텍트는 네트워크 아키텍처를 재고해야 하게 되었습니다., 2016

Gartner.

VDI and DaaS Demand That Enterprise Architects Rethink Their Network Architectures

13 June 2016 | ID:G00301201

Analyst(s): Nathan Hill, Neil Rickard

Summary

Networks are foundational to centralized workspace delivery technologies, whether accessed via LAN, WAN or the Internet. Enterprise architects must ensure sufficient network capacity, performance and availability to be able to deliver virtual desktop infrastructures and deploy desktop as a service.

Overview

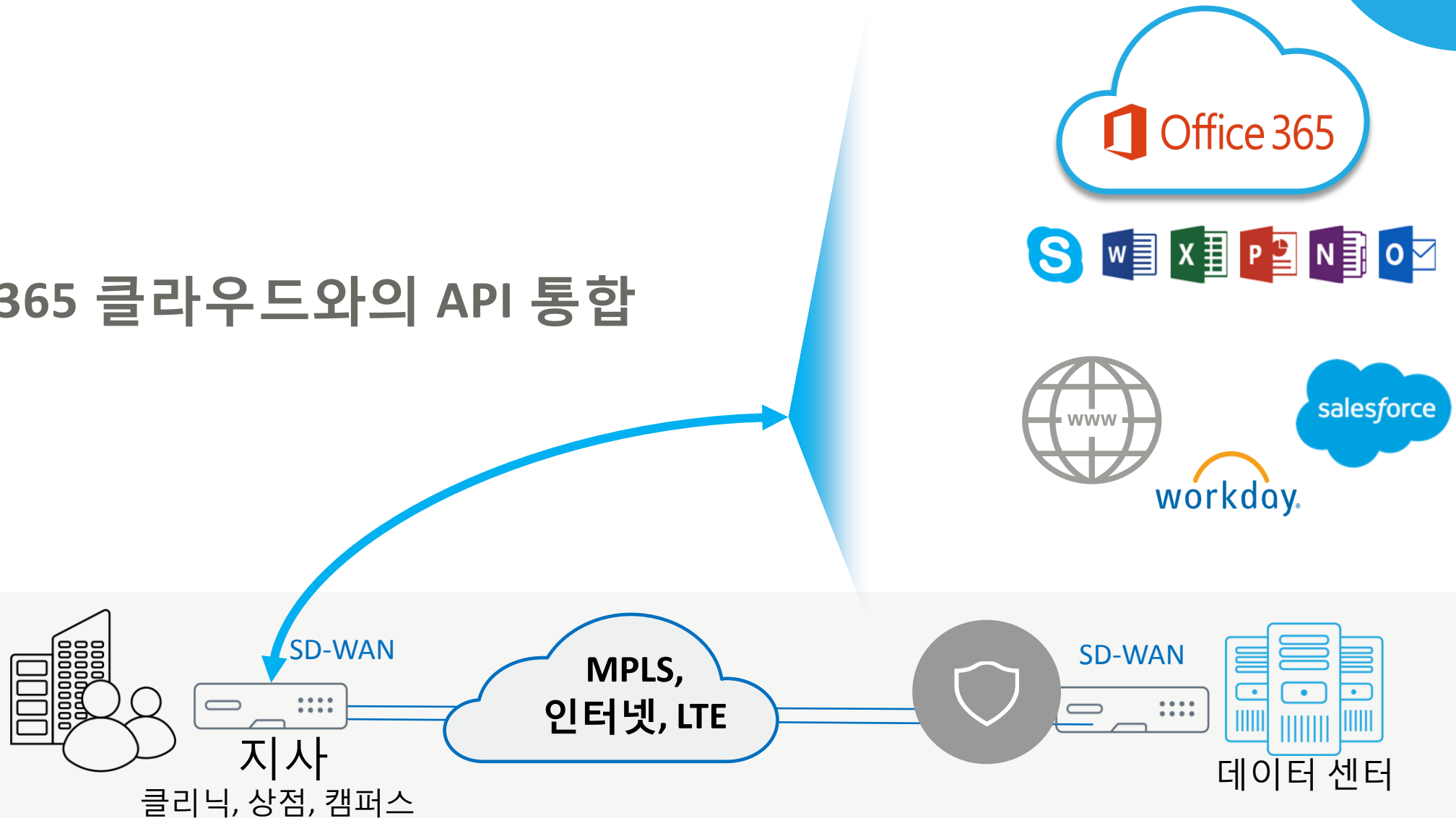
Impacts

- The growth in application richness and the use of multimedia will force enterprise architects to increase network bandwidth and plan for reduced latency tolerance, as organizations move to virtual desktop infrastructures and desktop as a service.
- Workspace centralization compels enterprise architects to increase network resilience, as users depend increasingly on the network for IT functionality.
- Increased consumption of cloud services will push enterprise architects to rethink end-user computing architectures and consider DaaS a better fit.
- Innovation in web-centric, remote display protocols will help enterprise architects keep pace with the delivery of ever-increasing content richness.

O365 가속화로 다이렉트 브레이크아웃

성능 향상

Office 365 클라우드와의 API 통합



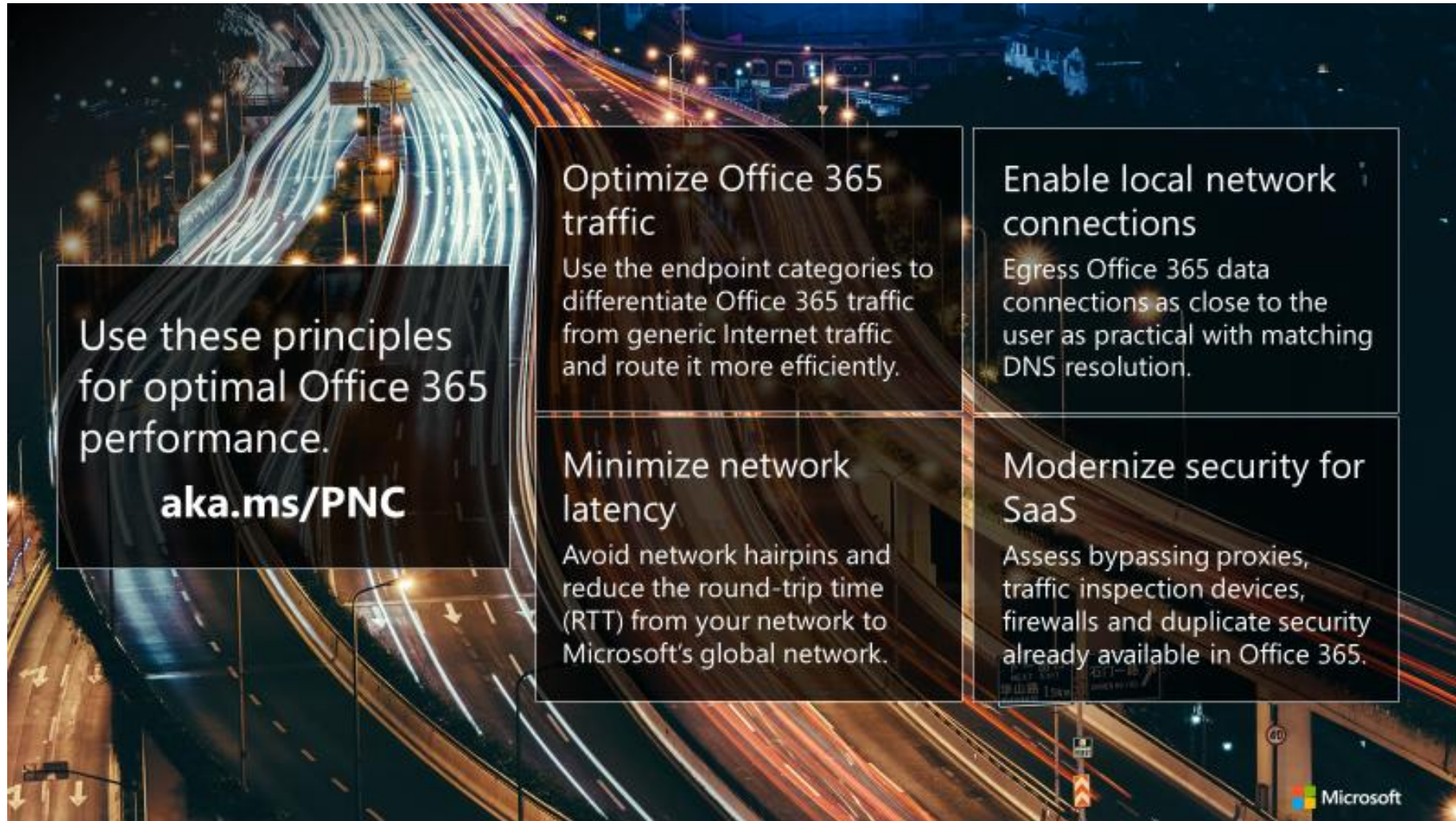


인터넷 트래픽의
불필요한 백홀

마이크로소프트
클라우드와의 통합성
부족

Microsoft's Office 365 연결 원칙

<https://docs.microsoft.com/en-us/office365/enterprise/office-365-network-connectivity-principles>



Use these principles for optimal Office 365 performance.
aka.ms/PNC

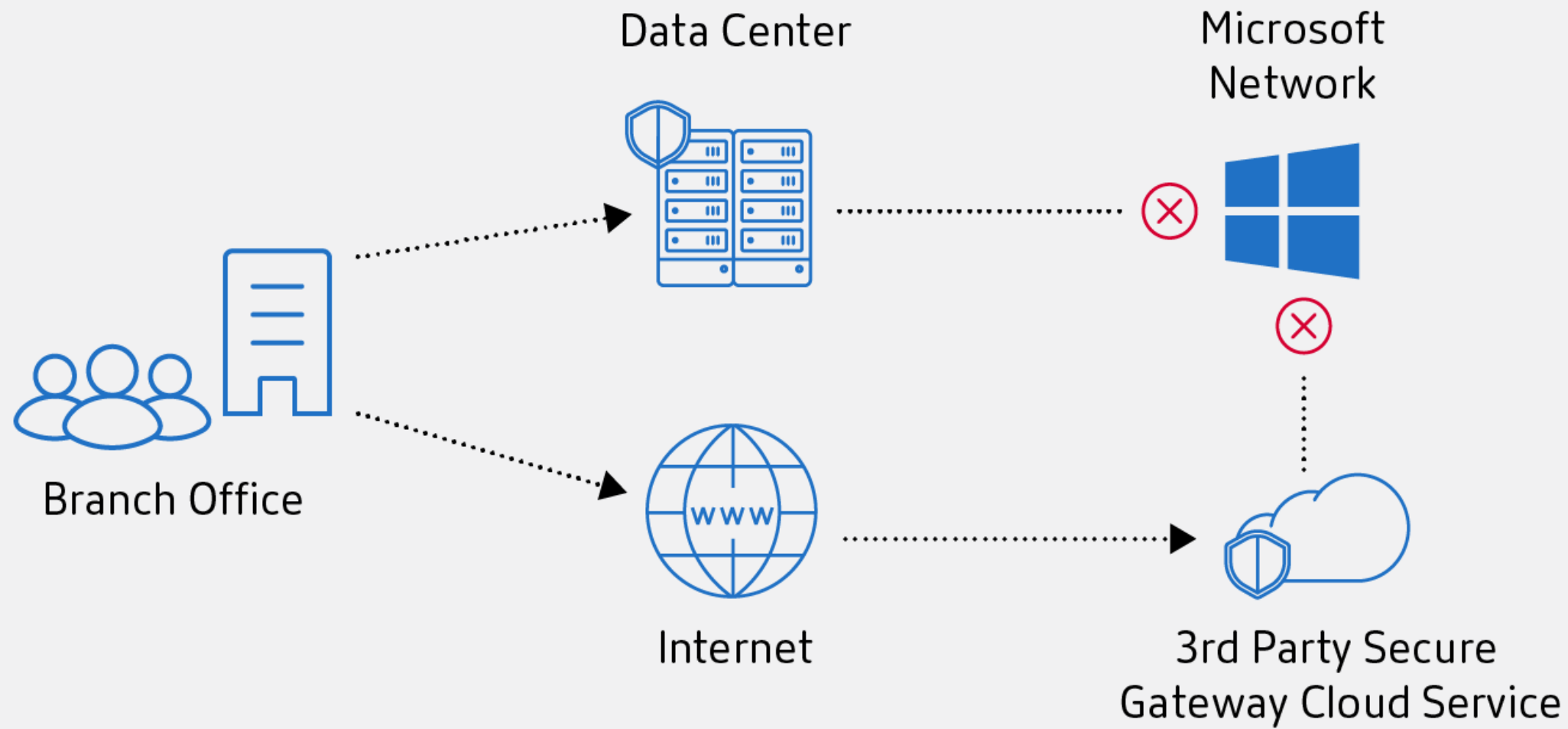
Optimize Office 365 traffic
Use the endpoint categories to differentiate Office 365 traffic from generic Internet traffic and route it more efficiently.

Enable local network connections
Egress Office 365 data connections as close to the user as practical with matching DNS resolution.

Minimize network latency
Avoid network hairpins and reduce the round-trip time (RTT) from your network to Microsoft's global network.

Modernize security for SaaS
Assess bypassing proxies, traffic inspection devices, firewalls and duplicate security already available in Office 365.

Microsoft



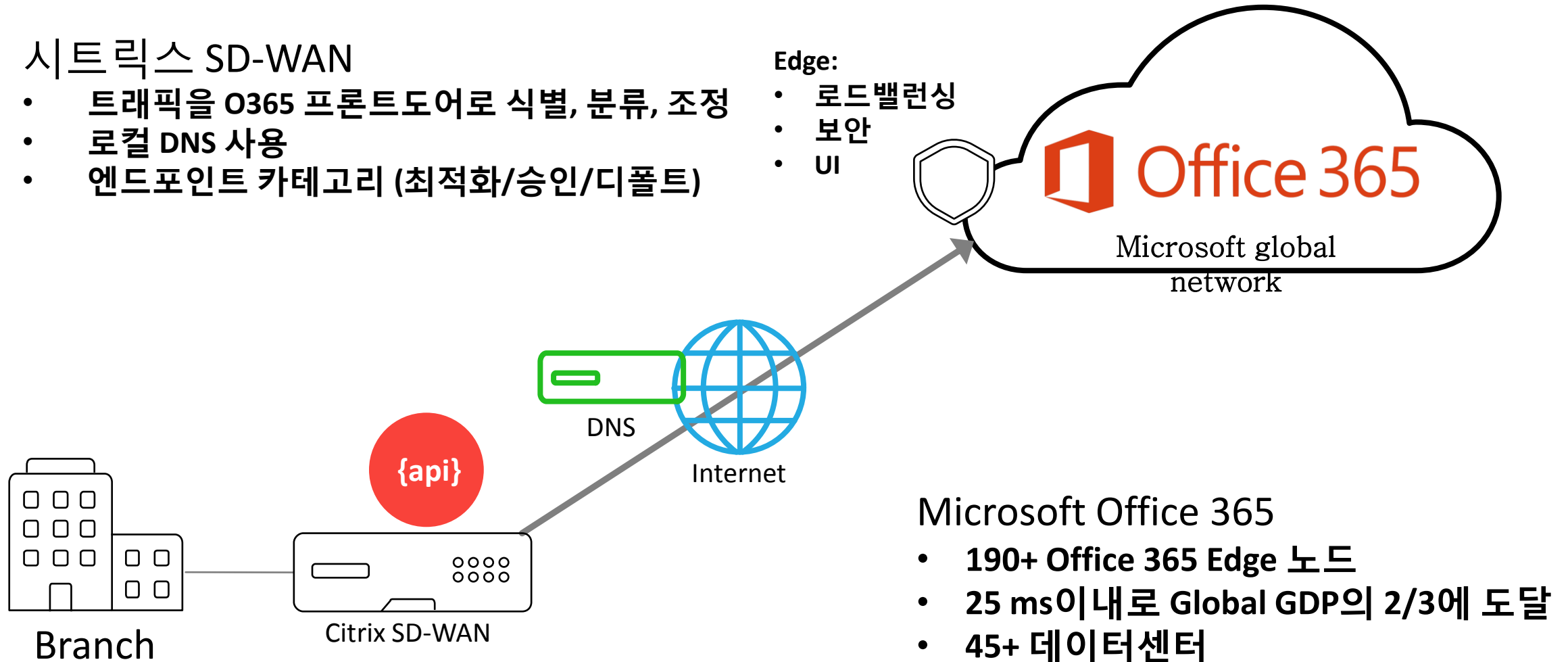
Microsoft API를 사용한 Office 365 트래픽 식별

시트릭스 SD-WAN

- 트래픽을 Office 365 프론트도어로 식별, 분류, 조정
- 로컬 DNS 사용
- 엔드포인트 카테고리 (최적화/승인/디폴트)

Edge:

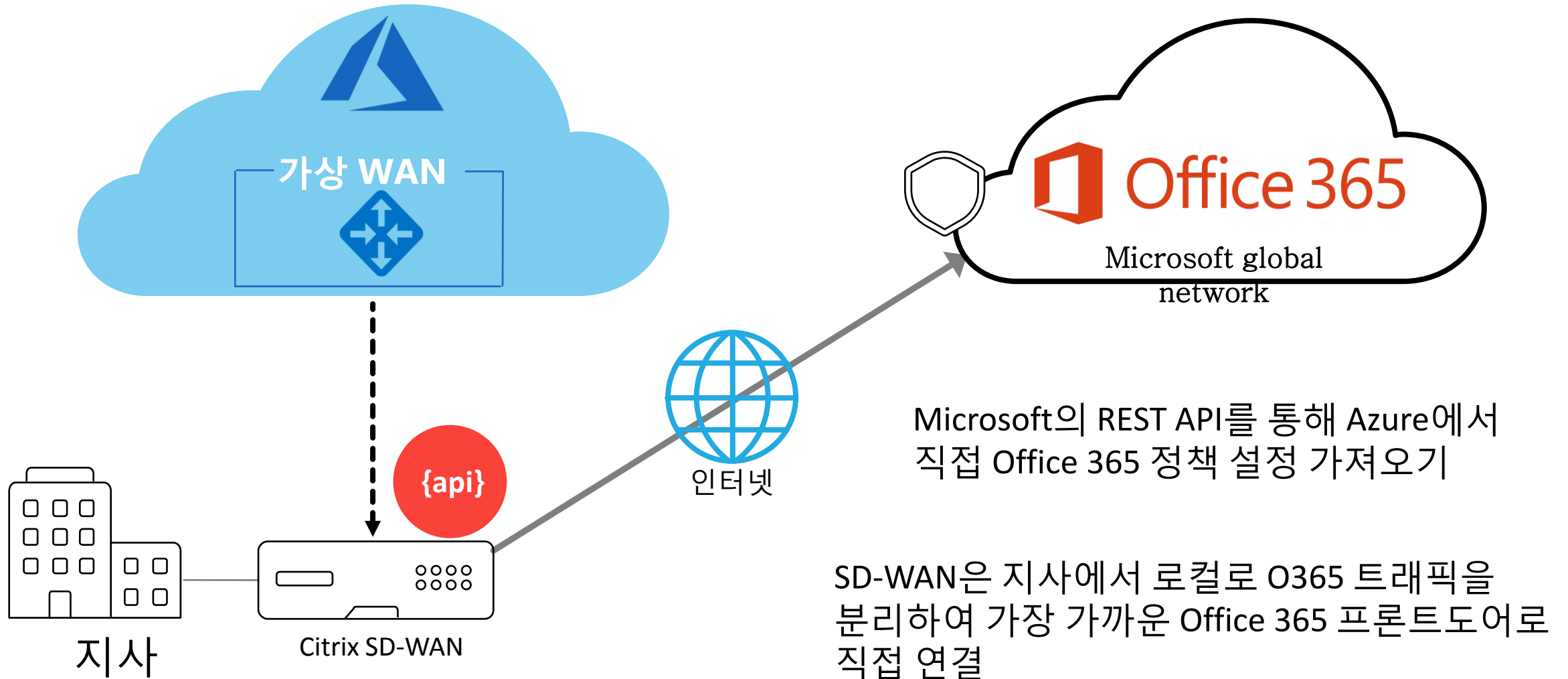
- 로드밸런싱
- 보안
- UI



Microsoft Office 365

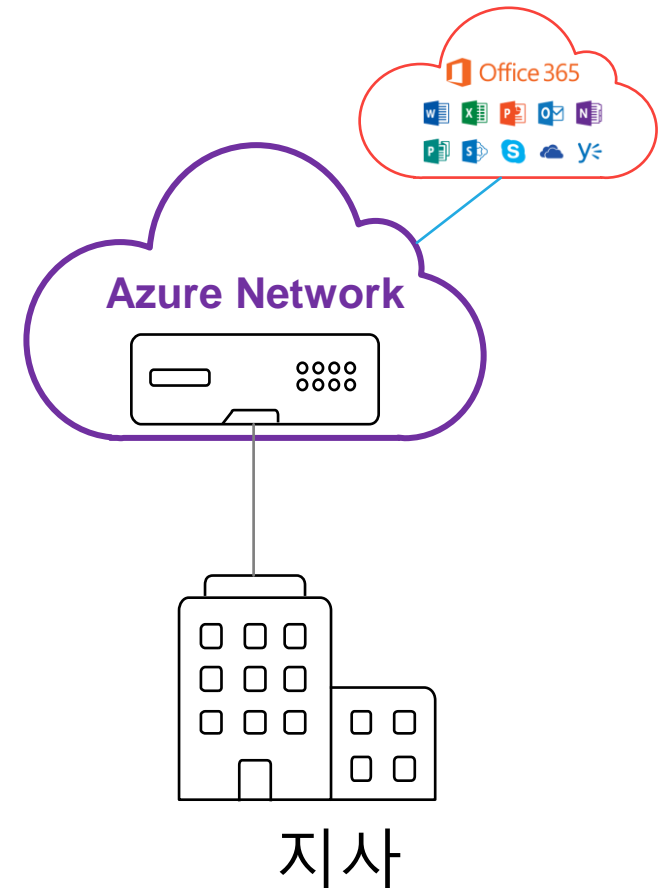
- 190+ Office 365 Edge 노드
- 25 ms 이내로 Global GDP의 2/3에 도달
- 45+ 데이터센터

Azure와의 정책 통합



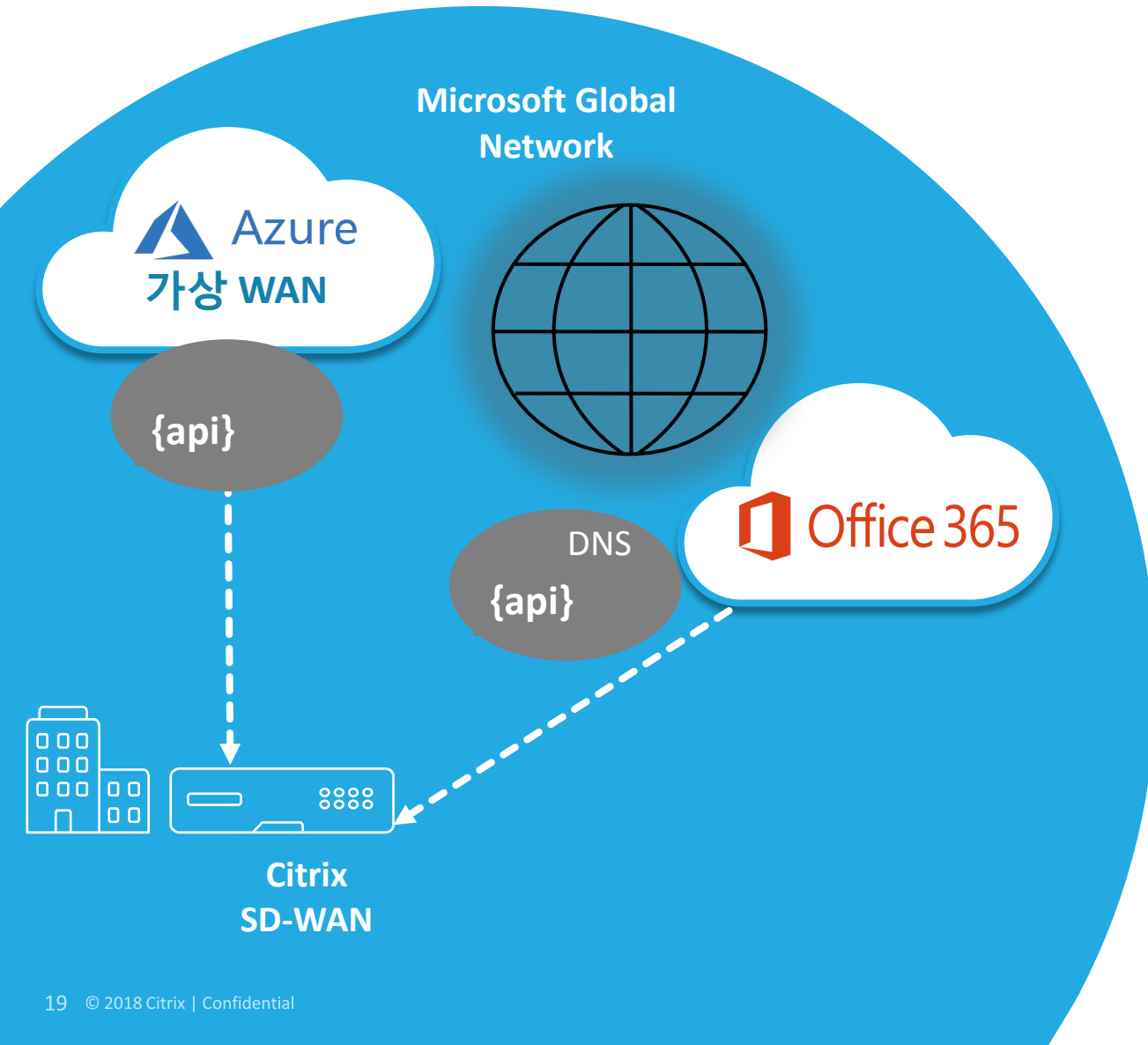
Office 365 온램프로서의 Azure

- 지연 패널티가 작으면, 때로 Azure를 Office의 온램프로 사용하는 것이 바람직 할 수 있습니다
- 그 이유는? Azure에서의 SD-WAN VPX 링크 성능 저하 처리 ("브라운아웃")
- 언제? 지사에 가장 가까운 O365 프론트도어 근처에 Azure 데이터 센터가 있는 경우



요약

퍼블릭 클라우드 통합에서의 리더십



VPX 인스턴스 상의 Citrix SD-WAN은 Azure 및 AWS 마켓 플레이스에서 찾을 수 있습니다.



매니지드 SD-WAN의 최종 사용자의 혜택

신속한 적용 및 자동화

- 제로 터치 지사 설정
- 빠른 네트워크 확장을 위한 템플릿 기반 복제

SD-WAN으로의 단계적 마이그레이션

- MPLS와의 링크 본딩으로 원활한 상호 운용성 제공
- SD-WAN을 기존 MPLS의 Cap 및 성장 전략으로 사용

유연성 및 보다 낮은 TCO

- WAN 용량이 더 필요할 때 MPLS를 보완하기 위한 SD-WAN
- 지사는 SD-WAN을 활용하여 임대 회선을 대체 가능

관리 효율성

- SD-WAN Orchestrator를 사용하는 글로벌 단일 창
- 서비스 제공업체가 관리하는 턴키 SD-WANaaS

성능 가속화

- 지연 최소화를 위해 Azure와 가장 빠른 O365 클라우드로 트래픽 전달
- 4,000이 넘는 클라우드 네이티브 앱 가속화

공지 사항을 통해 세부 사항을 확인하세요

Azure vWAN을 위한 SD-WAN

Citrix SD-WAN with Microsoft Azure Virtual WAN improves workspace experience and productivity in branch and remote locations.

Citrix and Microsoft simplify branch office network deployments

Blog categories: CLOUD, NETWORKING, CHANNEL & PARTNERS



Posted on July 12, 2018, 12:00 PT

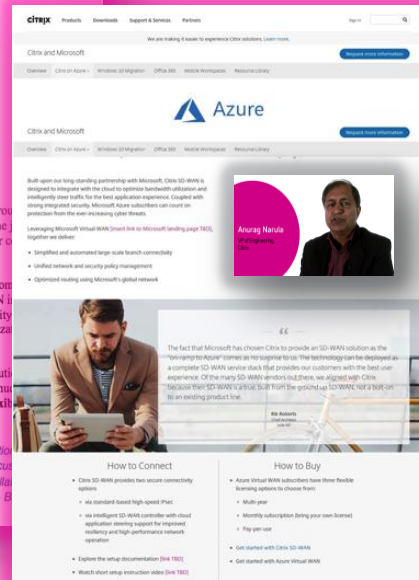
Chalan Aras
VP, Citrix Networking

Today, **Microsoft is announcing the new Azure Virtual WAN service**. Citrix is proud to partner with Microsoft to provide Citrix SD-WAN solution as the on-ramp to Azure. The solution is designed for the WAN edge of Azure to help enhance user experience, deliver productivity and automate the branch-office network deployments.

Citrix SD-WAN provides a comprehensive application-aware access solution from enterprise branch to the Microsoft Azure Virtual WAN Service. Citrix SD-WAN performance, reduces branch and remote connectivity costs, and enhances security network level by combining packet-level, real-time path selection, WAN optimization, routing, and application analytics all in one solution.

Microsoft and Citrix have achieved yet another milestone in delivering joint solution for workspace and application networking. These joint solutions give customers a mix of experience, granular levels of security at an app level and more choice and flexibility to move ahead in their cloud journey.

Citrix Cloud delivered on Microsoft Azure is the latest example of our collaboration which has always been centered on innovation and the success of our mutual customers. Together, we defined the virtual desktop category and now we are collaborating on the new Citrix SD-WAN solution on Azure, which will do the same for the cloud. — **Chalan Aras**, Corporate Vice President, [Azure Networking Webinar Series](#)



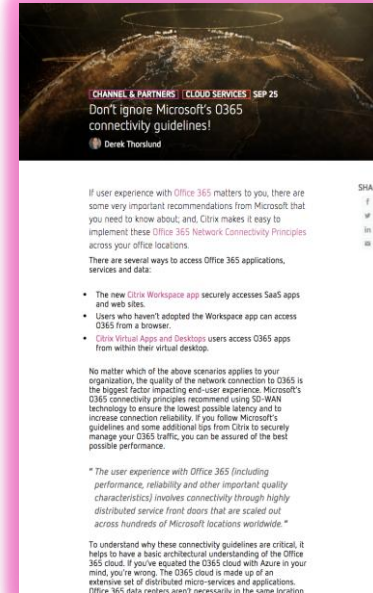
블로그

<https://www.citrix.com/blogs/2018/07/12/citrix-sd-wan-with-microsoft-azure-virtual-wan-improves-workspace-experience-and-productivity-in-branch-and-remote-locations/>

제품 페이지

<https://www.citrix.com/global-partners/microsoft/sd-wan-for-azure-virtual-wan.html>

Office 365를 위한 SD-WAN



If user experience with Office 365 matters to you, there are some very important recommendations from Microsoft that you need to know about, and, Citrix makes it easy to implement these **Office 365 Network Connectivity Principles** across your office locations.

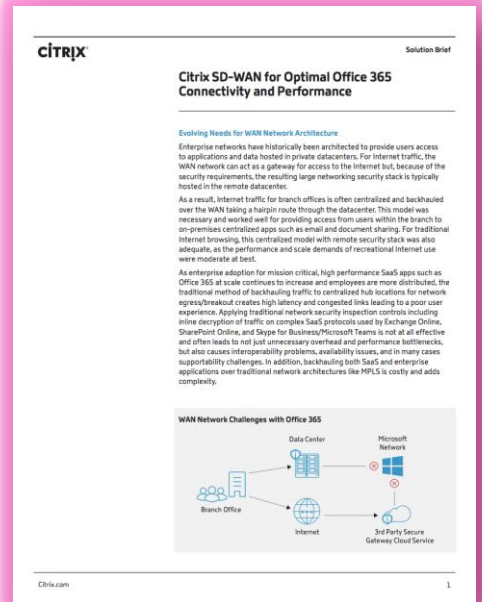
There are several ways to access Office 365 applications, services, and data:

- The new **Citrix Workspace app** securely accesses SaaS apps and web sites.
- Users who haven't adopted the Workspace app can access O365 from a browser.
- **Citrix Virtual Apps and Desktops** users access O365 apps from within their virtual desktop.

No matter which of the above scenarios applies to your organization, the quality of the network connection to O365 is the biggest factor impacting end-user experience. Microsoft's O365 connectivity principles recommend using SD-WAN technology to ensure the lowest possible latency and to increase connection reliability. If you follow Microsoft's guidelines and some additional tips from Citrix to securely manage your O365 traffic, you can be assured of the best possible performance.

"The user experience with Office 365 (including performance, reliability and other important quality characteristics) involves connectivity through highly distributed service front doors that are scaled out across hundreds of Microsoft locations worldwide."

To understand why these connectivity guidelines are critical, it helps to have a basic architectural understanding of the Office 365 cloud. If you've equated the O365 cloud with Azure in your mind, you're wrong. The O365 cloud is made up of an extensive set of distributed micro-services and applications. Office 365 data centers aren't necessarily in the same location



CITRIX

Citrix SD-WAN for Optimal Office 365 Connectivity and Performance

Evolving Needs for WAN Network Architecture

Enterprise networks have historically been architected to provide users access to applications and data hosted in private datacenters. For Internet traffic, the WAN network can act as a gateway for access to the Internet but, because of the security requirements, the resulting large networking security stack is typically hosted in the remote datacenter.

As a result, Internet traffic for branch offices is often centralized and backhauled over the WAN taking a hairpin route through the datacenter. This model was necessary and worked well for providing access from users within the branch to on-premises centralized apps such as email and document sharing. For traditional Internet browsing, this centralized model with remote security stack was also adequate, as the performance and scale demands of recreational Internet use were moderate at best.

As enterprise adoption for mission critical, high performance SaaS apps such as Office 365 at scale continues to increase and employees are more distributed, the traditional method of backhauling traffic to centralized hub locations for network egress/breakout creates high latency and congested links leading to a poor user experience. Applying traditional network security inspection controls including inline decryption of traffic on complex SaaS protocols used by Exchange Online, SharePoint Online, and Skype for Business/Microsoft Teams is not at all effective and often leads to not just unnecessary overhead and performance bottlenecks, but also causes interoperability problems, availability issues, and in many cases supportability challenges. In addition, backhauling both SaaS and enterprise applications over traditional network architectures like MPLS is costly and adds complexity.



Citrix.com

1

블로그

<https://www.citrix.com/blogs/2018/09/25/dont-ignore-microsofts-o365-connectivity-guidelines/>

솔루션 브리프

<https://bit.ly/2puHp2a>

등록하시려면 다음 주소로 구독 ID를 보내주십시오 azurevirtualwan@microsoft.com



SD-WAN에 대해 더 자세히 알기 원하시나요?

- 다양한 SD-WAN 보안 고려 사항 정의
- Citrix SD-WAN Stateful Firewall 평가
- 보안 관리 이해하기



등록: bit.ly/2zKg8il



