

# NTT Communications Network Solutions for Optimizing use of Office 365 environment

## Office 365 Connection Optimization with Software-Defined Network Service

NTT Communications will contribute to the realization of a better ICT environment and digital transformation for our customers by providing new services and expanding managed services that make use of our technology that utilizing SDx.

Cloud services, such as Office 365, are being actively adopted to increasing corporate productivity and create a speedier business environment, and those of utilization is expected to increase in the future.

Under current situation, many corporate networks are optimized for on-premises use. Concretely, it is optimized for connection to ICT environment that operating in data centers and other locations. We consider that in most cases, regarding on the internet connection, it operated like as the form of a centralized connection on center site point to ensure these of security.

It should be considered that such a corporate network environment is not optimal for the future deployment of cloud services. For example, we recognize market needs that customer are running out of bandwidth on WAN lines to connect to the data center from each location or running out of bandwidth on Internet lines in a central data center.

In addition, the existence of a centralized data center, which serves as an egress to the Internet, between each branch office and the cloud service increases transaction delay, and the user experiences speed decreases due to the security inspection. As a result, several elements cause the possibility that the use of the cloud service, which is very convenient, might to be the obstacle with the degradation of the user experience.

NTT Communications is deploying network solutions, include SD-WAN, Software-Defined Network Services, to address these issues and contribute to improving the business and management environments of its customers.

# Optimization for Office 365 Connection

NTT Communications' network solutions are designed to optimize connectivity to Office 365 and can support increase productivity.

Particularly, by separating communications to Office 365 that ensured its security with advanced security feature from ordinary internet traffic, and by optimizing traffic paths and security feature deployment, it makes minimize the traffic latency and thereby maximizing the user experience. This solution is corresponding to the Microsoft Office 365 Connectivity Principles (<https://aka.ms/pnc/>). The key points of the technology are explained below.

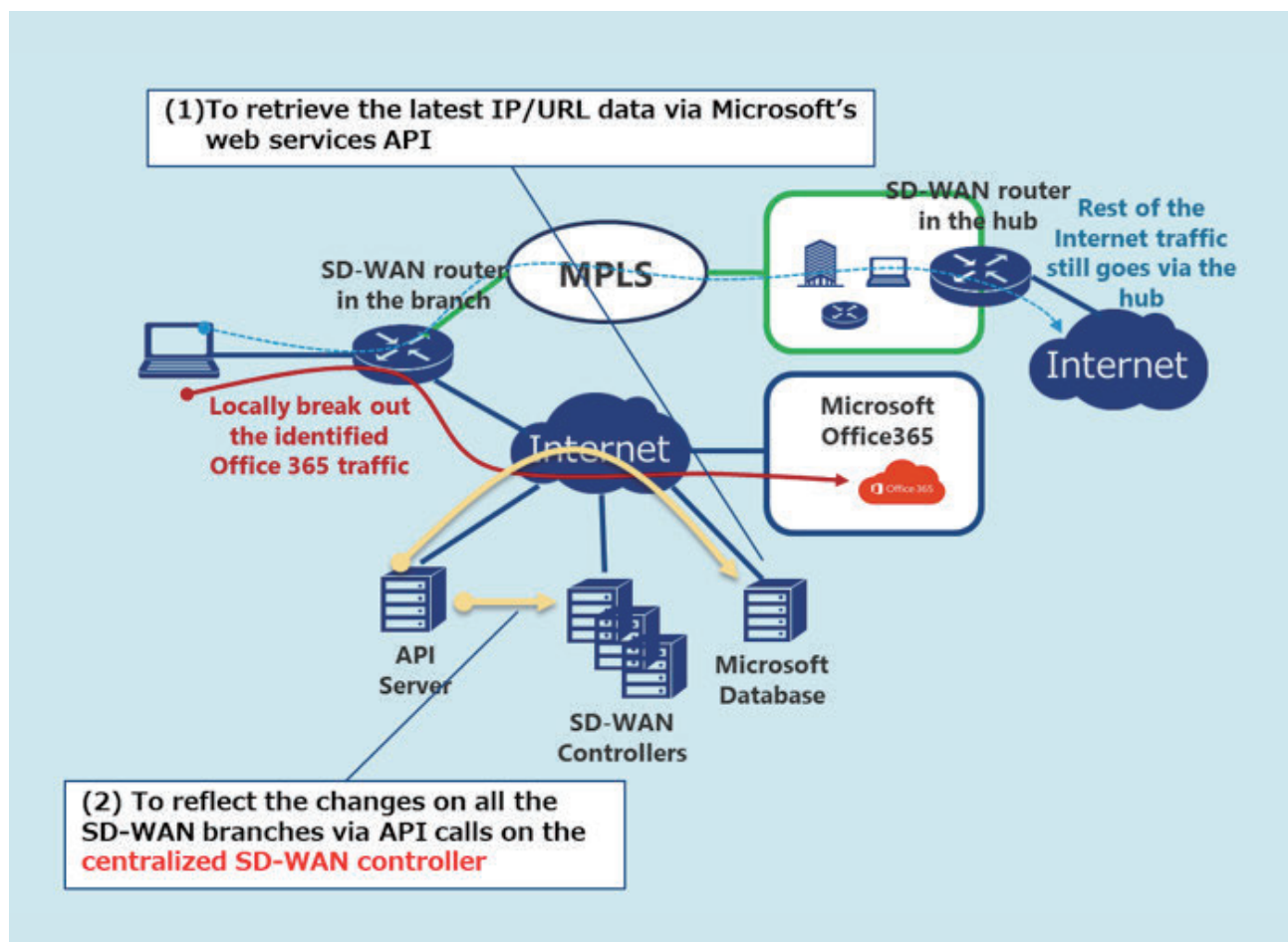
## Solution Technology

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## Identification and separation of Office 365 traffic

To handle the Office 365 traffic independently, catch the latest updated URL and IP addresses published by Microsoft Office 365 Web Services to properly identify and isolate Office 365 traffic from the high volume of traffic. The below figure shows as the result of handling, the Office 365 connection being connected directly from the branch site to the Internet.

Figure 1 | identification of Office 365 traffic



In case of the user hope to access Office 365, our SD-NS service control the DNS connection root on each of site for connection to the geographically most advantageous office 365 location with referring the URL that published by Microsoft Office 365 web services.

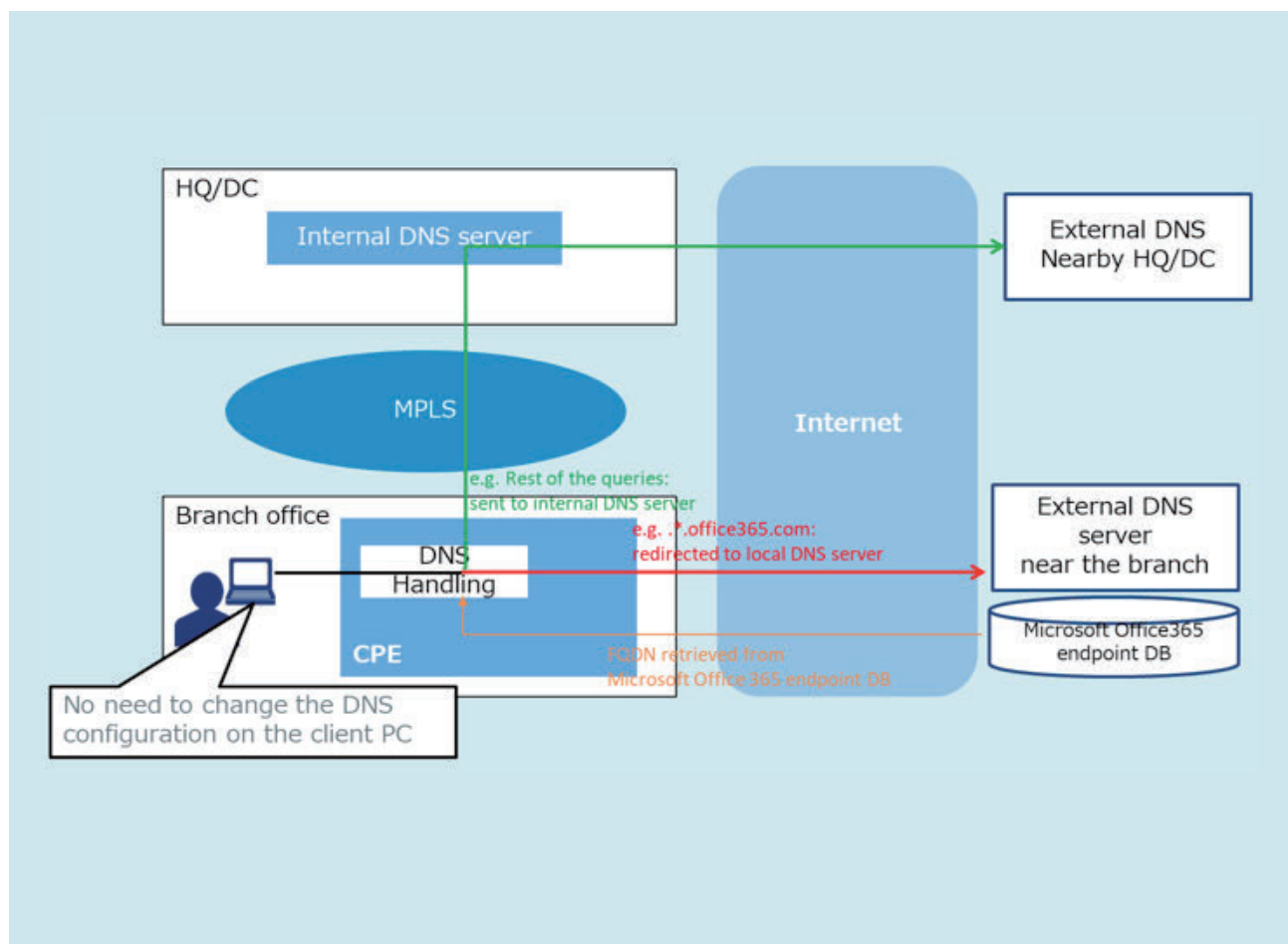
In ordinarily, each of enterprise network site is composed to refer the internal DNS that operated in the datacenter to access the on-premise ICT environment. This is because that access to business systems on the enterprise intranet is required.

However, if this situation is continued, for instance, in case of an internal DNS server is configured in the United States, the network site in Tokyo site have possibility to access Office 365 in US by referring to DNS server in US. Thus, is not a desirable result.

Therefore, as far as Office 365, to refer the Local ISP's DNS that knows Office 365 on the geographically nearest address from its site, referral route of DNS is handled and optimized on each of SD-WAN router.

In addition, this solution can be deployed very efficiently because there is no need to change the DNS references of existing client terminals.

Figure 2 | DNS Lookup Optimization



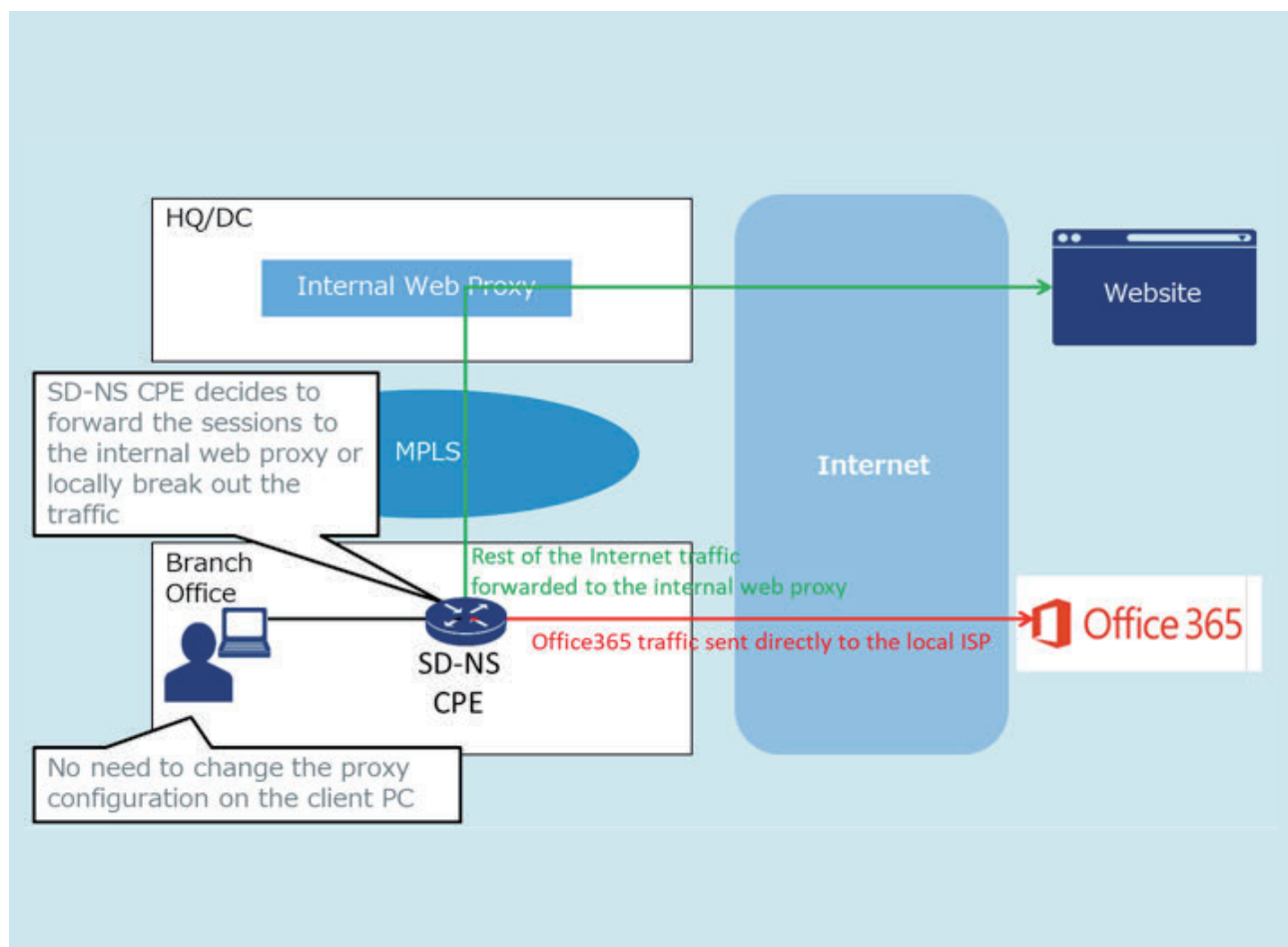
Our SD-NS service optimize actual traffic path after optimized the DNS referral. Office 365 is a secure cloud service and as its native security feature, include advanced security features built into the service itself, such as data loss prevention, tamper-proof and detection, Anti-Virus, multi-factor authentication, Lockbox, and threat protection.

As the result, the transaction from each network site will be routed directly to the local ISP via the CPE provided by this network solution deployed at each site and will be connected through the shortest path to the front doors (egress) of Office 365 services worldwide. Of course, overlapping security features can be bypassed or whitelisted to minimize unnecessary traffic latency and maximize the user experience.

On the other hand, for common Internet traffic that require security checks, routing to central data centers, such as centralized Proxy servers, maintains consistent security policies across the enterprise.

This is a very easy solution to implement as there is no need to change the Proxy settings on client terminals in each location.

Figure 3 | Traffic Path Optimization



## Summary

Through this our network solution, customer can optimize total cost of ownership (TCO), including customer security investments, without unnecessarily increasing the speed of your local or data center WAN links. As a result, we consider that we will be able to advance the business environment by promoting the use of cloud services centered on Office 365.

In addition to the solutions introduced here, NTT Communications has a full worldwide lineup of services, including network infrastructure, cloud services, data centers, operation services and integrated security services for integrated management of cloud services and data centers required for customer ICT environments, and will continue to contribute to customer digital transformation.