Scale and Create New Revenue Streams Using a Complete SD-WAN Solution from NEC/Netcracker and Versa Networks

As enterprises and their IT resources become increasingly distributed, businesses are finding it more and more necessary to quickly deliver WAN services with readily accessible cloud applications at a lower cost. Traditional MPLS services, while highly reliable and secure, are complex, costly to manage and cannot meet the growing demand for increased enterprise branch office connectivity. With an SD-WAN service, service providers can augment their MPLS offerings with a more agile and centrally managed offering that leverages internet economics while maintaining enterprise-level reliability, security and performance. The upside for service providers is incredible agility and a foundation for delivering new revenue-generating, value-added IP services that will augment the gradual transition from MPLS. This is one of many use cases available with NEC/Netcracker NaaS.

Solution Overview

NEC/Netcracker has partnered with Versa Networks to deliver a complete, scalable managed SD-WAN solution.

The solution is based on NEC/Netcracker NaaS, an end-to-end environment for quickly creating, deploying and monetizing new services for the B2B market. NaaS brings together hybrid network and service orchestration, enterprise virtual CPE (vCPE), a built-in revenue enablement layer, pre-integrated VNFs and SD-WAN components from Versa as well as security and WAN optimization services—all available from a digital marketplace.

Versa SD-WAN components are fully pre-integrated into NEC/Netcracker NaaS and make up the following core building blocks to improve and secure internet connectivity for branch offices:

> **"Compute-enabled" (x86) CPE:** Physical devices designed to provide both physical CPE functions and general-purpose compute infrastructure into which VNFs can be deployed.

> **Versa FlexVNF:** A broad set of virtualized network and security functions with carrier-grade multitenancy, programmability, service chaining and service elasticity to build a cost-effective SD-WAN solution.

> **Versa SD-WAN Controller:** A function that establishes a secure connection to each site in the network to enable zero-touch provisioning and share routes, security and policy information. It is located in the point of presence or data center.

Versa Analytics, which analyzes logs and events from links, network paths and services, is natively integrated with Netcracker's monitoring services to enable end-to-end data reporting for the entire SD-WAN solution.

NEC/Netcracker's end-to-end service orchestration ties all the pieces together across multiple domains, including existing BSS/OSS, network orchestration, VNFs and SDN controllers, establishing a basis for incrementally phasing out legacy networks and rapidly expanding into new value-added services.

The complete solution enables service providers to expand beyond SD-WAN with a broader set of managed services from the digital marketplace, including a variety of value-added VNFs and XaaS cloud applications that can be bundled together and accessed through a self-service portal.

Key Challenges

Service providers today encounter challenges when they need to:

> Automate configuration and centralize management so new branches can be set up in minutes.

> Scale SD-WAN services and operations without having to replace or add proprietary hardware.

> Build services on top of SD-WAN without any vendor lock-in.

> Provide enterprise-grade reliability, performance and security over any type of transport.

> Reduce the time it takes to launch new services.
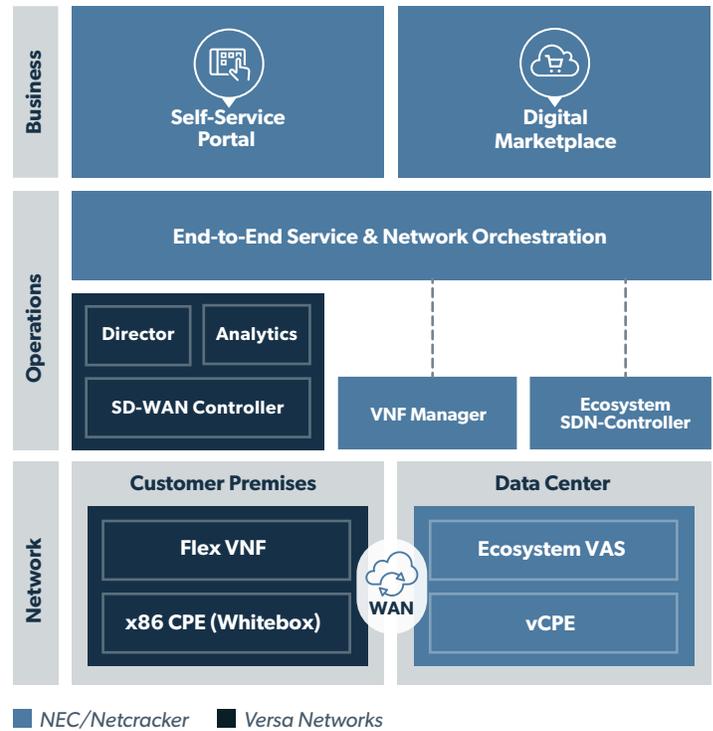
Solution Value

The SD-WAN solution from NEC/Netcracker and Versa enables service providers to:

> Reduce time-to-market by up to 80%.

> Seamlessly integrate internet connectivity from various networks.

> Easily scale service offerings to meet demands during peak traffic.

> Generate revenue by leveraging a portfolio of value-added virtualized services that are ready to be monetized.

Solution Benefits

› **Create a positive business case.**
Generate new B2B revenue by delivering additional offerings alongside the SD-WAN solution through the use of a diverse digital marketplace stocked with pre-integrated value-added services.

› **Reduce time to market by up to 80%.**
Accelerate time-to-market by up to 80 percent with a complete, ready-to-deploy solution with full pre-service validation. New branch offices can be activated through zero-touch provisioning and centralized management via a self-service portal

› **Scale your SD-WAN services.**
Leverage an operations environment that can scale across both physical and virtualized networks and solve critical issues, including those associated with license management and real-time charging.

› **Re-use service creation frameworks.**
Enable continuous service innovation and evolve service portfolios with new revenue-generating, on-demand VNF-based services. Any third-party VNFs can be easily integrated into the service chain.

Business
| Self-Service Portal | Digital Marketplace |

Operations
End-to-End Service & Network Orchestration

| Director | Analytics |
| SD-WAN Controller | VNF Manager | Ecosystem SDN-Controller |

Network
Customer Premises	Data Center
Flex VNF	WAN	Ecosystem VAS
x86 CPE (Whitebox)		vCPE

■ *NEC/Netcracker*   ■ *Versa Networks*

Summary

NEC/Netcracker offers a unique solution that works across physical, virtual, transport and cloud domains. SD-WAN is one of many use cases available from NEC/Netcracker NaaS. From the same solution, service providers can easily grow by adding new services and targeting different markets. Enterprise or residential vCPE with security value-added services, WAN optimization services and cloud applications can all be delivered from the same platform that leverages NEC/Netcracker's large ecosystem of partners. After delivering the first service, implementing additional offerings is even faster with our agile service design processes. Discover more at www.netcracker.com/naas/

About Versa Networks

Founded by network industry veterans, Versa Networks is an innovative vendor of software-defined WAN (SD-WAN) and security (SD-Security). Versa provides a unique and carrier-grade SD-WAN and SD-Security solution that is purely software- and NFV-based, and fully multi-tenant. The solution provides a wide range of virtualized networking and security functions that can be used to create highly scalable and high-value managed services that run on low-cost white box and x86 hardware. Versa SD-WAN and SD-Security are deployed by Tier 1 and 2 providers around the world, as well as several large enterprises. The company is backed by premier venture investors Sequoia, Mayfield, and Verizon Ventures. For more information, visit http://www.versa-networks.com.

About NEC/Netcracker

NEC/Netcracker SDN/NFV Solutions is the joint initiative between NEC Corporation and Netcracker Technology to address the opportunities associated with software-defined networking (SDN) and network functions virtualization (NFV) for service providers of all sizes around the world. The combined NEC/Netcracker entity brings together the best of NEC's network innovation with Netcracker's IT leadership and telecom expertise to deliver comprehensive, end-to-end cloud and virtualization solutions in multidomain environments www.netracker.com

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