

Orchestrating a brighter world

NEC

Software Defined Networking Enabled Unified Communications



Software Defined Networking enabled UC automates and simplifies a Smart Enterprise's network administration to achieve greater business agility.



At a Glance

- Enables faster, easier deployment and management of Unified Communications (UC) networks
- Delivers simplified provisioning and dynamic, on demand, allocation of critical network resources
- Drives efficiencies in provisioning, emergency communications and disaster recovery/resiliency
- Manages real-time traffic requirements for improved user Quality of Experience (QoE)
- Centralizes urgent communications control while establishing end-to-end Software Defined Networking (SDN) traffic prioritization
- Results in significant CAPEX and OPEX cost reductions

Overview

Businesses face many IT challenges today that can greatly affect their bottom line. Increasing costs for current infrastructure, the continual addition of new applications and services, complex network environments that require specialized skills, the demand for adaptability and agility, plus heightened security risks are just some of the key challenges faced by IT professionals. Plus the projected network complexity continues to grow with no end in sight.

With NEC's Smart Enterprise vision and direction, Unified Communications (UC) enabled with Software Defined Networking (SDN) can have great benefits for organizations and businesses. NEC's UC-SDN solution can help businesses overcome these challenges and future-proof their network and communications environments. This is accomplished by integrating the management of UC, networking and IT security to improve performance, security, manageability and quality of user experience while reducing the cost and complexity of delivering mission critical real-time applications.

Solution

Award Winning Open Network Architecture

NEC's ProgrammableFlow SDN is at the core of the UC-SDN solution and it was the first commercially available Software-Defined Network solution to leverage the OpenFlow protocol. Network administrators leverage NEC's SDN technology to achieve greater service agility through network automation and are able to control costs by consolidating network equipment. NEC's ProgrammableFlow SDN solutions simplify network operation and increase network visibility, improving service levels by fine-grained control and visibility of network traffic. Since Unified Communications is enormously dependent on the underlying network, ProgrammableFlow SDN is the perfect high-performance architecture that can sustain traffic peaks with low latency, jitter and packet loss, and support real-time interactive communications.

By automating and simplifying network administration, a Smart Enterprise can achieve greater business agility and unify the deployment and management of network services and applications through one programmable interface.



UC on an SDN Network - Why?

There are many benefits to having an integrated UC-SDN solution starting with the ease of deployment and management of UC, voice, video and any other real-time applications. Other benefits include:

- Easy integration with ProgrammableFlow network while maximizing network utilization of resources
- Quality of Service (QoS) provisioning and support is managed by the ProgrammableFlow Controller – not each individual network device/switch/router
- Manage video, voice and data traffic with ease through network auto-provisioning and prioritization
- Easy monitoring of VoIP traffic
- Better QoS from auto-reallocation of traffic and priorities
- On-demand UC Big Data analysis of users' activities on various communications mediums
- Secure and safe data transactions
- Dynamic notifications of UC apps/network/telephony events
- Automatic resource allocation in Disaster Recovery/failover situations pushes bandwidth reallocation policies to the network infrastructure to handle down time
- Secure Multi-Tenant Isolated Networks Capabilities with NEC's ProgrammableFlow Virtual Tenant Network (VTN) technology

NEC's SDN CAPEX and OPEX Savings

Implementing NEC's UC-SDN solution offers tremendous and significant Capital Expenditures (CAPEX) savings. The significant savings are achieved via NEC's ProgrammableFlow virtualization and abstraction capabilities.

With its resilient architecture, NEC's UC-SDN solution also offers improved Operating Expenses. By virtualizing the network using NEC's SDN, the network administrators no longer need to spend time and money to handle extremely complex infrastructure. Unlike traditional networks, the additions, movements or changes of UC endpoints in the network can be easily managed by the centralized controllers with minimal manual interventions. This leads to a reduction in network outages due to configuration errors, strengthened security with quicker

and more targeted policy provisioning plus application adaptability via APIs that reduce deployment times and enable faster reactions to application requirements and events.

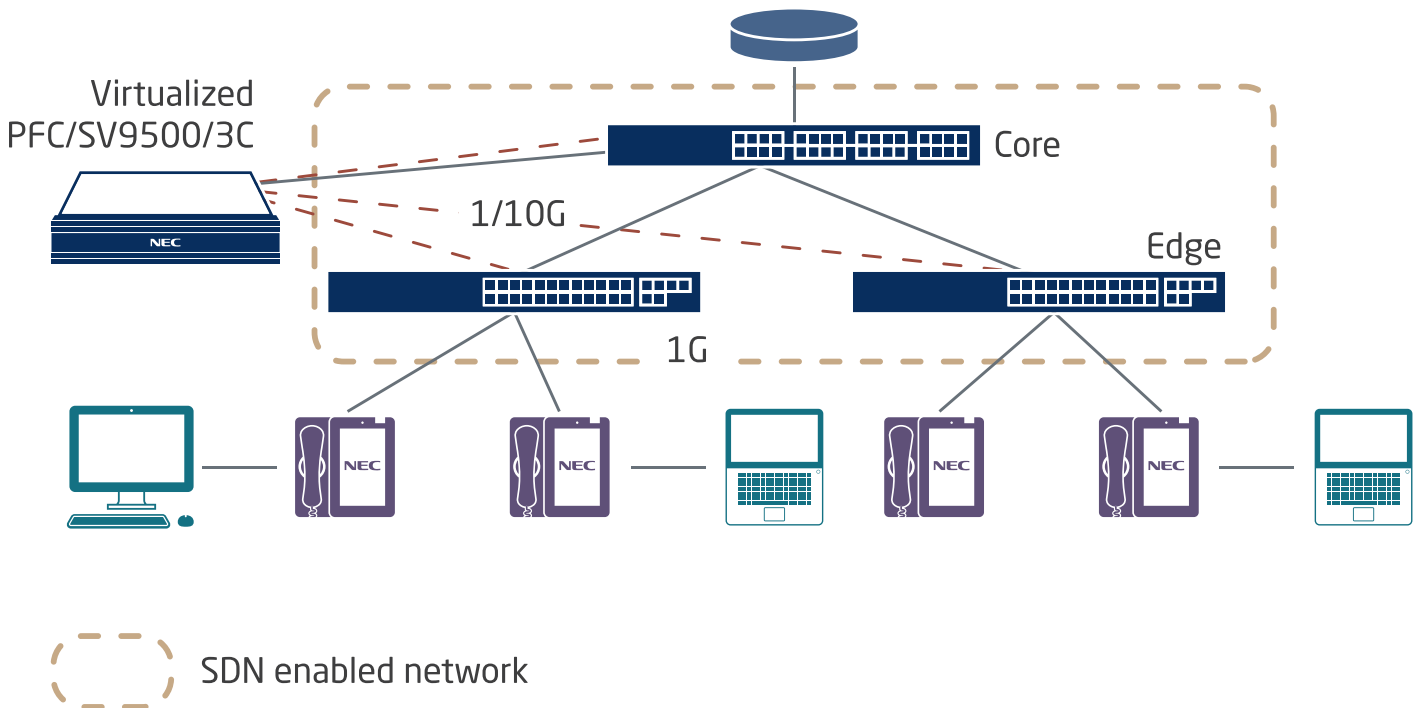
Case Study Example of NEC's ProgrammableFlow (SDN) Customer Benefits:

SDN Advantage	Customer Experience from Deploying ProgrammableFlow SDN
Operational Efficiencies	<ul style="list-style-type: none"> •80% reduction in operational expense •72% reduction in the labor to do configuration changes •Make adds, moves, and changes in minutes, not hours or days
Consolidation of IT Resources	<ul style="list-style-type: none"> •80% reduction in the number of switches •65% reduction in the number of server racks •80% reduction in power consumption •Consolidate and virtualize firewall and other network devices up by 90%
Business Agility	<ul style="list-style-type: none"> •Deploy new business services more rapidly •React to cyberattacks
Increased Network Availability and Performance	<ul style="list-style-type: none"> •Reduce recovery time from minutes to seconds
Enhanced Management and Visibility	<ul style="list-style-type: none"> •Visualization of the entire network •Equipment and virtual networks can be added via a GUI

SDN Standards-Based Eco-System

OpenFlow is a switch control protocol and the industry standard to achieve SDN. In conventional networks, each network device has route control functions and packet transfer functions. In an OpenFlow network, the route control function is decoupled from the packet transfer function enabling centralized control of networking. ProgrammableFlow is a network technology family, based on the OpenFlow protocol that enhances the basic functionalities of OpenFlow with technologies commercialized by NEC. Controllers and switches in the ProgrammableFlow Networking Suite provide an optimum SDN environment for many types of networks. In addition, many companies now support the OpenFlow protocol, allowing multi-vendor interoperability.

NEC's UC-SDN Architecture



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