Global oil corporation reduces networking costs at remote exploration sites with Nuage Networks Software-Defined Wide Area Networking (SD-WAN) solution

One of the customers of Nuage Networks is an independent oil and gas exploration and production company with both global offshore and onshore assets. The company produces oil and natural gas in the United States, Canada and Malaysia and conducts exploration activities worldwide. This case study documents the business drivers and benefits for adopting the Nuage Networks Virtualized Network Services (VNS) solution for SD-WAN.

Business benefits

Dramatically reduced WAN costs across geographically dispersed remote sites

By deploying the Nuage Networks Virtualized Network Services (VNS) solution for SD-WAN, the company expects to reduce WAN networking costs by USD$1 million across the first 40 sites.

Reduced times to bring remote sites online, with lower operational costs and greater business agility

Nuage Networks VNS automates network provisioning and configuration, accelerating the time to connect new sites to corporate applications and data from weeks to a matter of hours.

Improved security and optimized Quality of Service (QoS) with policy-based networking and access controls

Secure access from remote sites to corporate systems is paramount. Nuage Networks VNS dynamically manages appropriate access to each application while selecting the most cost-effective WAN connectivity option, including MPLS, Internet service, or even 3G or LTE cell service for optimal QoS.

The challenge

The company operates exploration and production sites around the world, many in harsh or remote conditions, including offshore. Each location requires immediate and reliable access to corporate Enterprise Resource Planning (ERP) and other business applications. Deploying a reliable, secure global WAN across multiple providers and technologies was proving to be extremely expensive, complex to deploy to new sites and challenging to troubleshoot.

Traditionally, many of the remote sites connected to corporate applications through expensive MPLS WAN infrastructure that provided the necessary QoS and security requirements. They were looking for a hybrid WAN solution that could provide access over less expensive Internet providers where available and leverage local cell access at times, while continuing to rely on MPLS links for the most critical traffic.

Secure access to critical applications and data from each remote site was imperative. Each site would need to access only required business services and be prevented from communicating with unauthorized infrastructure and applications. As access and security policies change, to the company wanted to be able to update the WAN infrastructure controls rapidly and efficiently across multiple WAN links and remote sites.

The solution

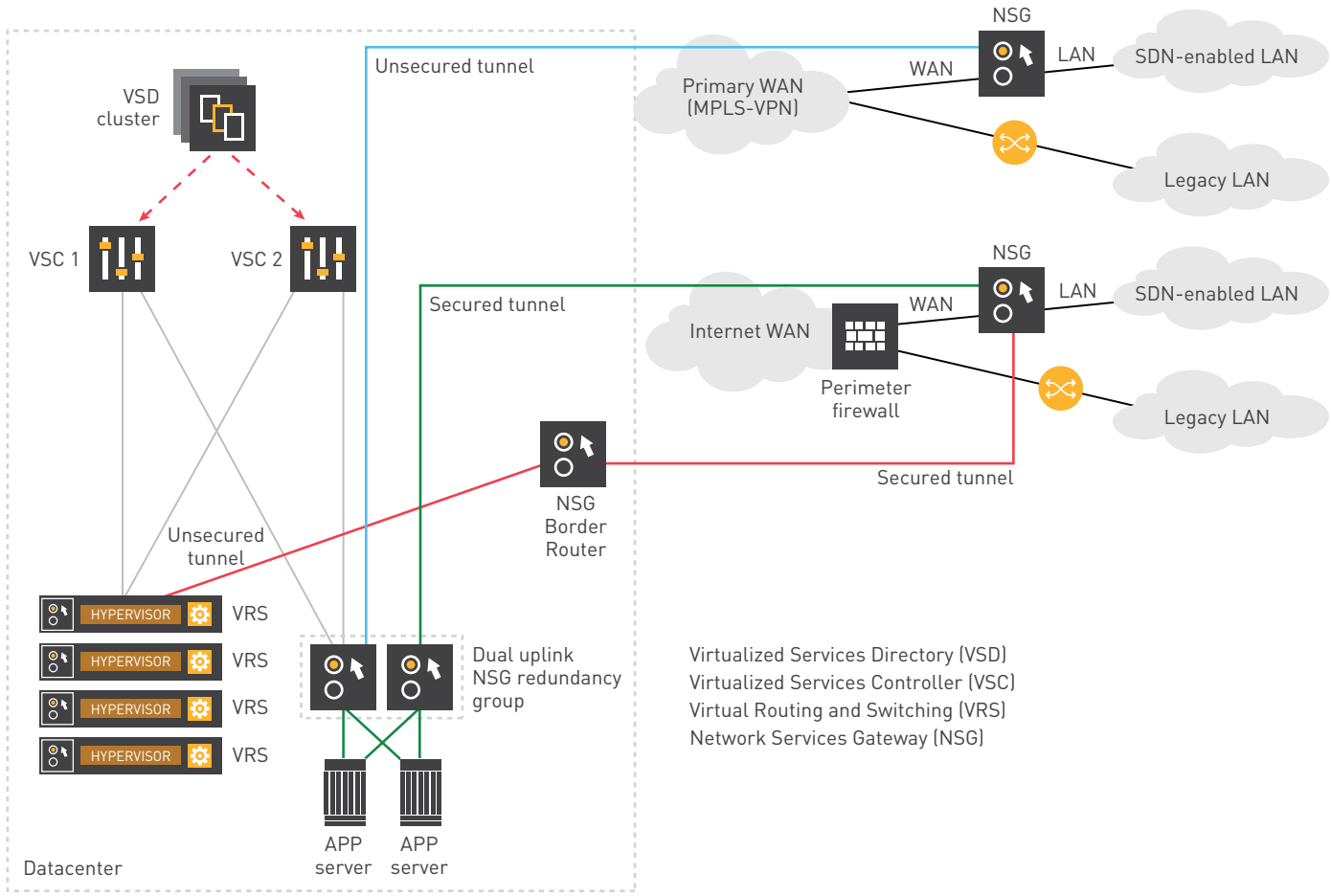
The company chose to deploy the Nuage Networks Virtual Network Services (VNS) SD-WAN solution as part of an integrated solution delivered by Nuage Networks partners HPE and Accenture. Nuage Networks VNS is a policy-based WAN automation solution that provides application-aware routing of traffic. Based on centrally managed policies, VNS identifies the type of application traffic and selects the appropriate WAN link from available options to deliver the most cost-effective connectivity and QoS. With policy-based traffic routing over the most cost-effective link, the customer expects to save 30% during the first year of implementation versus private MPLS costs alone.

The Nuage Networks Virtualized Services Platform (VSP) allows users to easily implement and update network security policies based on business requirements. Policies such as allowing Site A to access ERP applications from the corporate data center and to video conference with other remote sites can be easily defined in the Nuage Networks VSP and pushed out to each WAN location. Security policies are enforced in the VNS gateway at the remote site, which can be a dedicated high-performance appliance or a software gateway on commodity PC hardware, depending on the requirements of the location.

The VNS gateway can be easily configured with the right networking and security services and either drop-shipped pre-configured or configured remotely from the central controller, saving time and operational complexity at the remote site. It used to take several weeks for a service provider to connect a new remote location to the corporate WAN, impacting operations and preventing full operations for the site. With VNS, the remote sites are connected to the corporate VPN as soon as an Internet connection is available from any local provider over any type of technology (e.g. DSL, Cable, LTE).

As shown in Figure 1, a remote WAN site may consist of a combination of LAN subnets and multiple WAN access links, such as a dedicated MPLS-VPN or connections provided by a local Internet provider. The Nuage Networks VNS dynamically routes traffic over the most cost-effective link that matches the desired security and QoS policies for that particular application. This approach can dramatically reduce networking costs and simplifies operational complexity at the remote site since policies are centrally managed by corporate administrators.

FIGURE 1. High-level Nuage Networks VNS Architecture



About Nuage Networks

Nuage Networks (www.nuagenetworks.net) brings a unique combination of groundbreaking technologies and unmatched networking expertise to the enterprise and telecommunications industries. The Silicon Valley-based business has applied radically new thinking to the problem of delivering massively scalable and highly programmable SDN solutions within and across the datacenter and out to the wide area network with the security and availability required by business-critical environments. Nuage Networks, backed by the rapidly growing IP/Optical Networks business of Nokia, has the pedigree to serve the needs of the world's biggest clouds. The cloud has made promises—the mission of Nuage Networks is to help you realize them.