



nodegrid

Nodegrid Hosted VM Firewall Service

Next Generation Virtualized Network Function Firewall with Palo Alto Networks



nodegrid

ZPE Systems' Nodegrid with Hosted VM Firewall Service

ZPE Systems' Nodegrid appliances support a variety of virtualized network functions (VNFs), including next generation firewalls (NGFW). One proven NGFW provider and trusted technology partner is Palo Alto Networks, whose VM series of virtualized NGFWs delivers the dependable security enterprises rely on.

Together, Nodegrid and Palo Alto Networks bring robust networking and security capabilities to even the most remote locations. Nodegrid's open platform with third-party application hosting allows enterprises to consolidate their infrastructure and customize their solution, while passing their networks through the advanced security of Palo Alto's NGFW. The result is powerful connectivity that offers proven protection for in-band and out-of-band paths, using a smaller stack that's simple to deploy and manage.

The Challenge

Traditional WAN architectures fall short in providing branch-friendly solutions for networking and security. Legacy systems call for backhauling traffic to the main enterprise firewall, which leads to bottlenecks and degraded performance. Additionally, implementing proper security measures poses another challenge, as isolated enterprise locations are limited in space and typically lack on-site support.

For each branch, repeat hardware purchases are necessary, especially to achieve high availability and adequate traffic safeguards. But this creates a large, cumbersome stack that becomes difficult to manage, deploy, and scale.

Distributed enterprises require a compact solution that offers comprehensive management tools and high-level security. A powerful and flexible infrastructure is needed for enterprises to protect multiple networks, scale quickly, and take full control from anywhere – even at remote sites.

Nodegrid: Securing Every Network

Nodegrid hardware features powerful x86 64-bit architecture and an open platform for hosting critical VNFs. This allows enterprises to deploy applications directly on Nodegrid devices, for a solution that can be customized to suit unique business needs. Branch locations can benefit from a virtualized environment – hosting applications for SDN, cybersecurity, automation, and NGFW – on a single box. With Nodegrid and Palo Alto, enterprise locations can deploy one device that secures many networks and access pathways.

In one case, a large oil and gas provider required a flexible solution coupled with high-level security. At each site, they successfully deployed Nodegrid Gate SRs with SD-WAN and Palo Alto's NGFW, with each device able to segment and dedicate traffic appropriately. Instead of juggling many security solutions, Nodegrid's virtualized environment provided trunking capabilities to secure many separate networks, including cellular and VSAT backup connections, through a single Palo Alto NGFW.

Nodegrid: Improving Scalability

Nodegrid's all-in-one devices improve scalability due to a smaller hardware footprint that is easier to deploy. In addition, better scaling is made possible by cloud-based provisioning and deployment, as well as automation and modular components.

Enterprises can ship unconfigured devices to their remote sites, and use ZPE Cloud to quickly set up a secure network with zero touch provisioning. Support for Ansible, Puppet, Chef, and other scripting tools provides consistent deployments through automation. Because Nodegrid appliances are also modular, enterprises can integrate add-ons to boost compute power, accommodate additional ethernet and serial connections, and expand connectivity and storage capabilities.

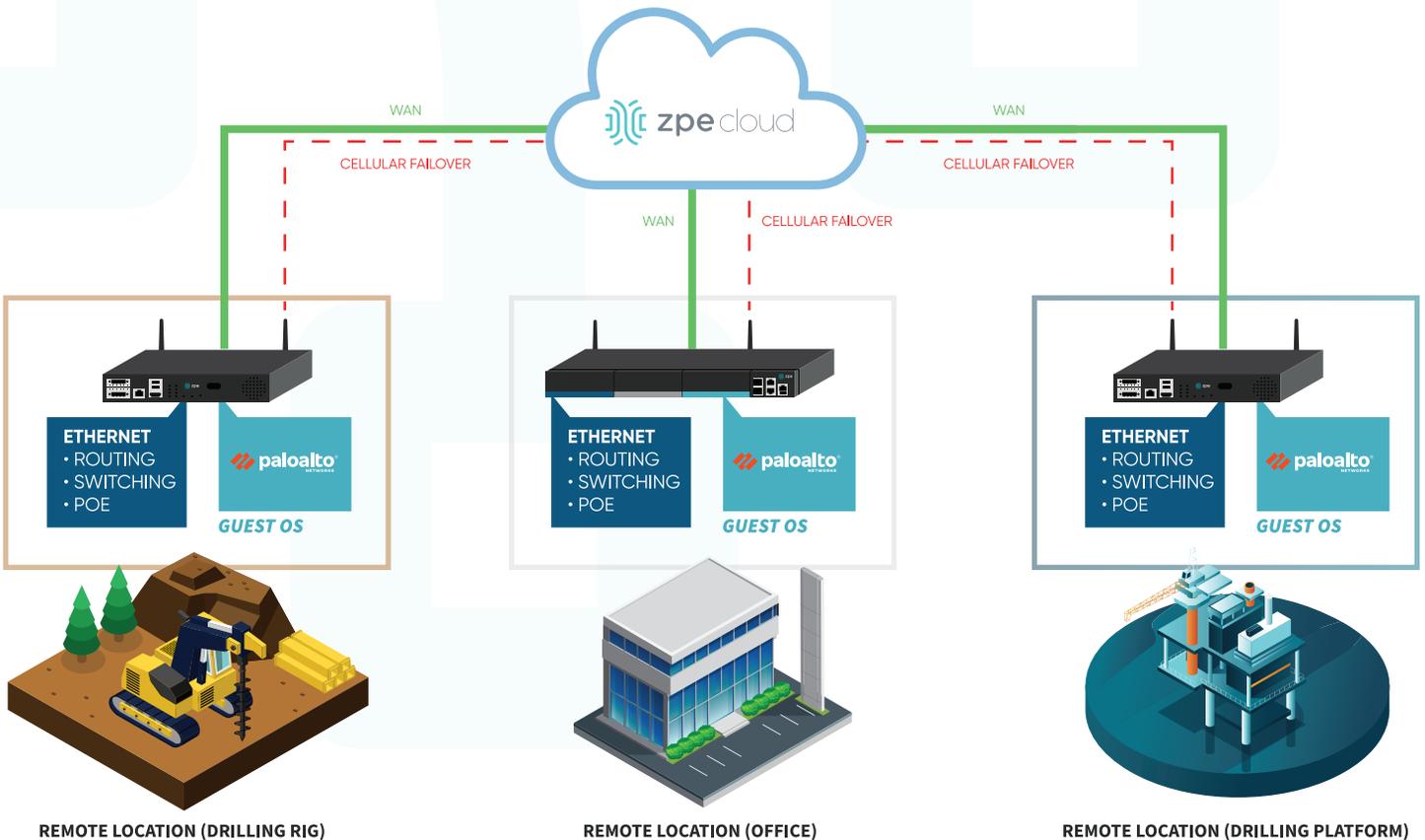
For the oil and gas provider, deploying Gate SR consolidated branch management devices cut their hardware stack in half. Instead of using two of each device – router, firewall, and switch – only two Nodegrid appliances were needed and could communicate via a single switch. Each Gate SR was configured to support SD-WAN and Palo Alto's NGFW, with a KVM Hypervisor layer allowing applications to communicate. On top of this, a dedicated high-availability connection was established for redundancy. The small and efficient stack meant significant space and energy savings at each location.

Nodegrid: Simplifying Management

Enterprises face the challenge of managing many vendor-specific solutions across their networks. This costs large sums of time and money, and pulls IT staff away from other critical business functions.

But with Nodegrid devices and the Nodegrid Manager software, infrastructure management is unified. Enterprises can see their entire network using one tool, and get the ability to manage their devices from anywhere. This extends into remote sites, with comprehensive SD-Branch capabilities that give full visibility and control of network activity inside each location. With Nodegrid, enterprises can manage everything from routers and firewalls, to smartphones, sensors, IoT devices, and other connected devices.

The oil and gas provider used Nodegrid Manager to monitor and maintain all of their networks and devices. Using a single platform, they fully controlled SD-WAN and the Palo Alto NGFW, along with automation scripts and various wireless access points.

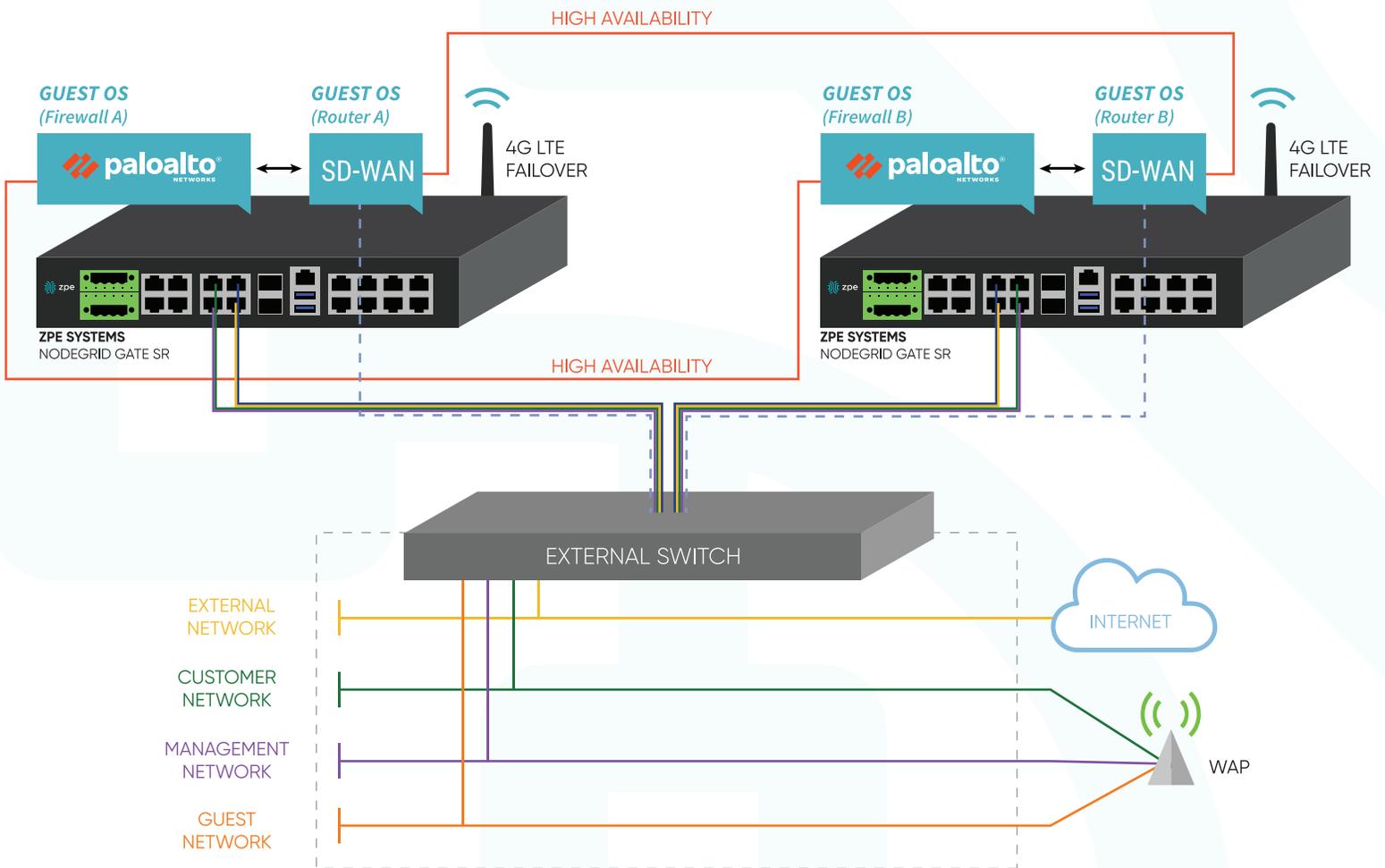


Application Diagram

The Nodegrid Gate SR is hosting (2) NFV's, providing the internal networking components (Layer 2) and physical resources necessary to meet their HA needs. Here ZPE Systems provides the use of an internal switch that allows for segmentation to take place, where routing and forwarding capabilities are all then managed in Palo Alto.

There is an external facing SD-WAN NFV solution forwarding all incoming traffic to the Palo Alto VM. Palo Alto then manages all of the incoming traffic and forwards them accordingly to how all of the VLANs are setup. Out-of-Band is configured on both Nodegrid units to ensure that the systems can be easily managed, when console access is needed.

This configuration not only supports the needs of an HA environment, but also a way to perform administration to systems without the need of a service disruption.



Nodegrid with Palo Alto NGFW Solution Benefits:



Right-fit Functions

Because operational agility requires the right mix of solutions, Nodegrid allows enterprises to deploy VNF applications that suit their unique needs – from cyber security, to SDN, IoT, & more.



High Availability

With the robust capabilities of an open platform, Nodegrid devices provide a virtualized environment capable of segmenting traffic, enforcing security, and accommodating high-availability interfaces.



Best of Breed Security

Palo Alto's VM series of NGFWs can be hosted directly on Nodegrid devices, to offer flexible and comprehensive network security where enterprises need it most.



Power & Space Savings

Consolidated hardware reduces the stack at each location. Scaling is easier and less costly, delivering much needed power and space savings.



Simplified Management

Nodegrid's plug-n-play devices can be easily deployed across remote sites, while the Nodegrid Manager software provides total network control, even at the branch level.

Designed with Branch in Mind:

- Multi Vendor-Neutral Virtualized Guest OS, Applications and Services Integrated for **SASE** and **SD-Branch**
- Modern OS with built-in Networking & Virtualization Support, **OOB Access & Control** and **Cloud Management**
- Support for **Multiple Interfaces**, add-on Compute, Storage, **Cellular Failover**, Wi-Fi, Sensors on a patented **x86-64bit Hardware** Architecture

Nodegrid SR Family Architecture

Guest OS / Apps

Partner Solutions



SD-WAN, Firewall, Cyber Security, etc.

SASE & SD-Branch

Software

Nodegrid OS



Management

Hardware

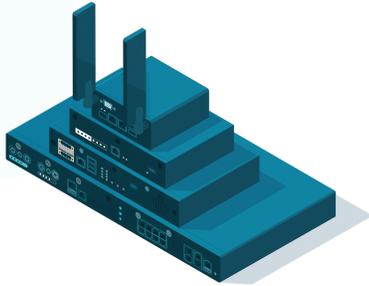
Nodegrid Appliances





Solution Components

Nodegrid Branch Solutions Consist of the Following Components:



Nodegrid all-in-one Devices

- Nodegrid Link SR
- Nodegrid Bold SR
- Nodegrid Gate SR
- Nodegrid Services Router



Palo Alto Networks VM Series NGFW

With the robust capabilities of an open platform, Nodegrid devices provide a virtualized environment capable of segmenting traffic, enforcing security, and accommodating high-availability interfaces.



Nodegrid Network Function Virtualization

Nodegrid's all-in-one devices run Linux OS, which supports KVM Hypervisor crucial to network function virtualization.



ZPE Cloud

Deploying, scaling, and managing can be done via the cloud, with zero touch provisioning that helps set up remote sites in minutes.



Nodegrid Manager

Nodegrid's open infrastructure works with any vendor, and the Nodegrid Manager software offers a 360-degree network view. Normalized controls help bridge feature gaps and provide total management capabilities.



About ZPE Systems:

ZPE Systems brings more than 100 years of combined network engineering experience in data center and branch networking. Using their innovative Nodegrid platform – the industry's first open infrastructure management solution – ZPE transforms the enterprise network into a business value creator. The world's most recognizable companies trust Nodegrid for in-depth out-of-band capabilities, Secure Access Service Edge (SASE), and SD-Branch networking.



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