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Branch Out-of-Band Management Is Deployed: Now What?

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Once an organization puts ZPE out-of-band management and Nodegrid SR devices to work in a branch or remote office, things get really interesting. Nodegrid SR devices can host all kinds of edge computing capabilities, to support increased security, local data acquisition for IoT, and more.

Organizations are already acquainted with the benefits of out-of-band management (OOBM) from long familiarity in their data center and operations locations. ZPE Systems now brings the same remote access, security, and failover capabilities to the field with its remote office/branch office (ROBO) offerings. But companies need not stop with robust, reliable remote access; improved security; automated configuration; and image test and deployment capabilities.

With ZPE Systems OOBM solutions, organizations can stretch beyond what SD-Branch brings to the table, by digging more deeply into the Nodegrid Services Router (SR) family of products. There they'll find the ability to add support for Secure Access Service Edge (SASE) applications, which bring powerful new local capabilities and edge computing to ROBO locations. In fact, there's much more that organizations can do by putting ZPE tools and technologies to work in the field.

Understanding SD-Branch

The software-defined branch, aka SD-Branch, simplifies WAN and LAN management by consolidating multiple network functions under a single umbrella and a single management console. SD-Branch integrates SD-WAN, routing, firewalls, security, and LAN functions into a single platform for maximum operational agility. For 360-degree visibility, SD-Branch helps monitor and manage all devices within any given branch. This includes not only network, server, and client devices, but also printers, TVs, thermostats, and a full range of IoT devices. Back at HQ or the Network Operations Center (NOC), ZPE's OOBM capabilities make all properly equipped ROBO locations visible and manageable, and ready for automation.

SD-Branch helps organizations benefit from more efficient bandwidth use, improved QoS and security, and granular visibility at the branch level. Figure 1 shows that SD-Branch can be deployed in greenfield situations, and also used to upgrade branch-office boxes in smaller ROBO locations.

SD-BRANCH SUPPORTS FULL-BLOWN EDGE COMPUTING

Note further in **Figure 1** that the ZPE devices also support a guest OS, which can run a broad range of applications and services in the Nodegrid SR device at ROBO locations such as remote offices, or drilling rigs and platforms. This can
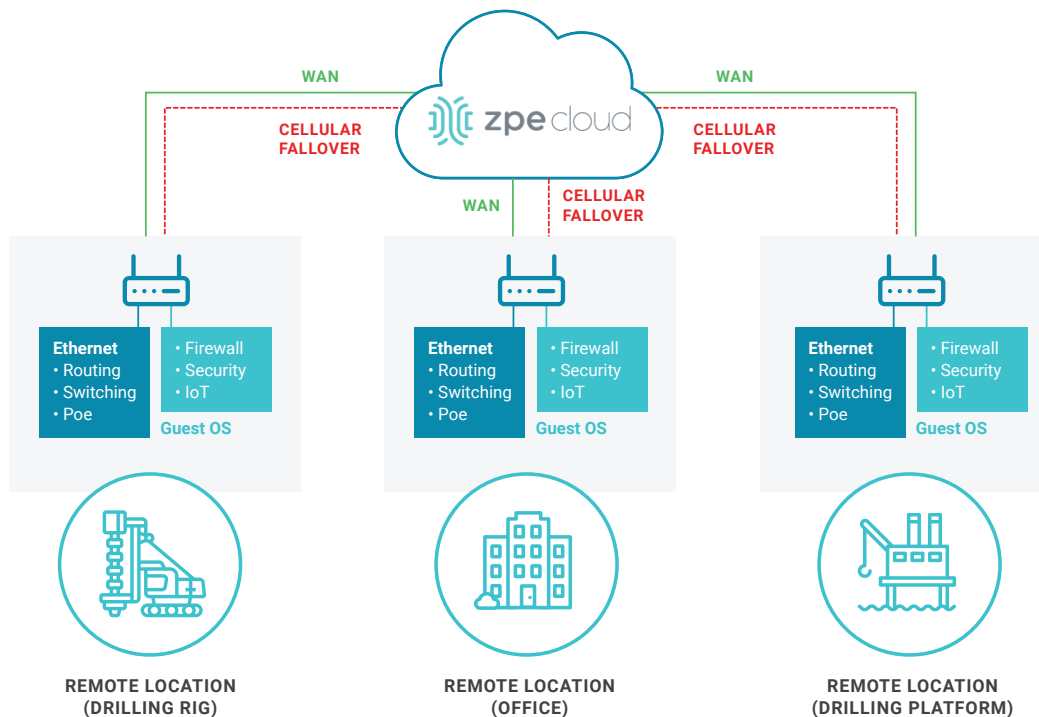

Figure 1: SD-Branch can be deployed in greenfield locations, or used to upgrade branch-office boxes in smaller ROBO locations

be used to provide local firewall, security, and IoT connector/data collection facilities.

In fact, the ZPE Systems Nodegrid SR family of devices has been tested to work with virtualized network-function applications across nine different categories. The company's Prevalidated Virtualized Applications list includes offerings for cybersecurity, SDN, firewalls, OSes, routers, IoT, IP cameras and surveillance, management, and automation. Supported OSes include Fedora, RedHat Linux, Ubuntu, and Microsoft Windows.

Furthermore, guest OSes may run under a standard hypervisor such as Linux KVM, VMware ESX, or Oracle VirtualBox. In addition, packaged applications or services may run containerized in environments such as Docker, GuestOS, or Kubernetes. Such local environments can provide full-fledged virtualization, as well as deployment, disaster recovery, and business continuity capabilities in ROBO locations, with built-in fallback OOBM connectivity and a connection to ZPE Cloud.

> ## Under its single pane of glass, SD-Branch provides organizations with centralized management for all branch locations.

Given the broad range of prevalidated applications, and the ability to run guest OSes or containers with subsidiary applications or services, an organization's ability to offer remote users edge computing capabilities is limited only by their appetite for hardware, memory, and storage in the Nodegrid SR devices they choose for ROBO deployments.

SD-Branch offers centralized and unified network management for all devices, combined as virtual functions in a cloud-like Networking-as-a-Service (NaaS) model. This supports automated management, along with services that can be introduced as needed, and adjusted to adapt to changing business circumstances. SD-Branch helps organizations improve their operational agility because it supports and facilitates rapid deployment and

provisioning; centralized, data-driven management; and reduced overall hardware costs and operating expenses.

Using SD-Branch, IT teams can rapidly deploy and provision network "branch-in-a-box" solutions. They can also remotely identify and remediate application slowdowns. IT staff need no longer travel to branch office premises to provide support (thereby eliminating travel and lodging expenses). To further reduce costs, branch software may be deployed on specialized hardware that consolidates network functions.

> ## Instead of forcing staff to expend extra effort to work remotely, SASE packs everything they need into the cloud.

Under its single pane of glass, SD-Branch provides organizations with centralized management for all branch locations.

Putting SASE to Work

SASE provides much more than secure connectivity and remote access. It also provides add-ons to edge devices that can bring hyperconverged infrastructure (HCI) capabilities to branch offices. Edge computing lifts the lid on local computing capabilities, and can support local data acquisition, filtering, and clean-up before sending data into the cloud or datacenter location for further aggregation and analysis. This is particularly useful for locations where large volumes of data may be collected at the edge (as in the oil drilling rig and platform scenarios shown previously in **Figure 1**, which may include copious data from sensor networks, seismic data collection, or measurement-while-drilling [MWD] equipment).

WHAT CAN SASE DO?

SASE provides networking and security to branch and remote offices via the cloud. SASE is identity-driven and supports all edge locations. Users can identify themselves at the edge, and establish proper credentials and access controls before they access WAN or Internet connections. This helps give users safe, reliable access to the

organization's network no matter where they might be located.

SASE also addresses important needs for more secure, flexible connectivity in the field. Traditional networking is neither designed nor built to accommodate a widely distributed staff base. Nor is it well-adapted to cope with a plethora of BYOD devices (personal computers, laptops, notebooks, tablets, and smartphones), any or all of which may be used to access corporate resources such as email, collaboration tools, tele- or video-conferencing, and so forth. Too often, this puts remote workers at a disadvantage, encumbered with slow, restricted network access with less-than-industrial strength security.

> SASE offers comprehensive control and flexibility through its converged software stack for everything from SD-WAN and traffic management, to firewall and security.

Without SASE, organizations must backhaul traffic through their main network's firewall. This creates a bottleneck that bogs down productivity with reduced speeds, frequent delays, and occasional interruptions of service. Remote connections may be more open to threats, owing to thinner, less comprehensive security measures.

Simply put, legacy solutions limit networks to specific locations and devices. Until recently, adding agility or extra capability meant adding to an already complex stack of applications and devices. In stark contrast, SASE beats legacy solutions because it lets employees connect from anywhere. It also protects those employees (and your organization) through its robust security capabilities delivered via the cloud.

Instead of forcing staff to expend extra effort to work remotely, SASE packs everything they need into the cloud. Because the cloud is accessible anywhere there's an Internet link, workers need not remain tethered to a specific workstation or a custom-configured laptop. Instead, they can use any device to enjoy secure access to the physical and cloud resources that SASE provides.

Whereas remote legacy solutions require a lot of setup, such as installing proper laptop software, adjusting network settings, establishing reliable VPN links, and more, SASE lets staff authenticate locally and seamlessly pick up the software, services, and configurations they need.

SASE MAKES MANAGEMENT SIMPLE

SASE offers comprehensive control and flexibility through its converged software stack for everything from SD-WAN and traffic management, to firewall and security. It also eliminates any need for discrete or loosely coupled point solutions that take extra time and money to learn, buy, and maintain. Instead, SASE lets organizations control all networking and security functions through a single, consistent console. Also, access is no longer bound to specific locations, so IT staff can manage the entire network from wherever they happen to be—even across the globe.

SASE DELIVERS COMPLETE HCI CAPABILITY

ZPE Nodegrid supports a comprehensive SASE platform you can deploy to the network edge, for more flexibility and edge computing power. Nodegrid's patented 64-bit architecture supports guest OS runtime environments. In turn, those guest OSes support virtualized applications, so that organizations can deploy them directly on Nodegrid SR devices.

> Nodegrid's modularity means that organizations can customize solutions for specific branch or remote office requirements with very little added effort and expense.

Thus, organizations can craft and tailor network security solutions by deploying WAN accelerators (which have both central office and branch office components), additional firewalls, anti-malware and content filtering solutions, and more. In addition, Nodegrid's modularity means that organizations can customize solutions for specific branch

or remote office requirements with very little added effort and expense.

> ZPE Nodegrid is an innovative SASE platform that lets organizations take advantage of flexible, secure branch and remote office connectivity and capability.

Nodegrid's guest OS capability supports various hypervisors and containers, so that organizations can also provide virtualized compute, storage, and networking at branch or remote locations. This permits, for example, local data analysis and reduction to occur when collecting and aggregating sensor or device data (think IoT applications) before moving cleaned-up data sets across the WAN to a data center somewhere. It also lets organizations position specific applications and services at the branch where and when that might be helpful. Visit the aforementioned list of prevalidated applications to find the known, good virtualized environments suitable for ROBO deployment on ZPE equipment.

Nodegrid Delivers a Ready-to-Run SASE Platform

ZPE Nodegrid is an innovative SASE platform that lets organizations take advantage of flexible, secure branch and remote office connectivity and capability. Organizations can add applications and services to properly equipped Nodegrid SR devices in the branch to support IoT, data acquisition and analysis, local services and applications, enhanced security, and more. Nodegrid's built-in automation also helps to streamline deployment and scaling. This makes SASE easy to set up and use across an entire organization, including HQ, data center, and branch or remote office locations. With its 4G/LTE failover (5G solutions are on the way) and OOBM, organizations gain in-depth control over SD-WAN, security, and third-party applications and services. Nodegrid offers complete flexibility to your organization's network.

Seeing is believing. Visit the ZPE [SASE](#) and [SD-Branch](#) pages, and get in touch to schedule a demo.