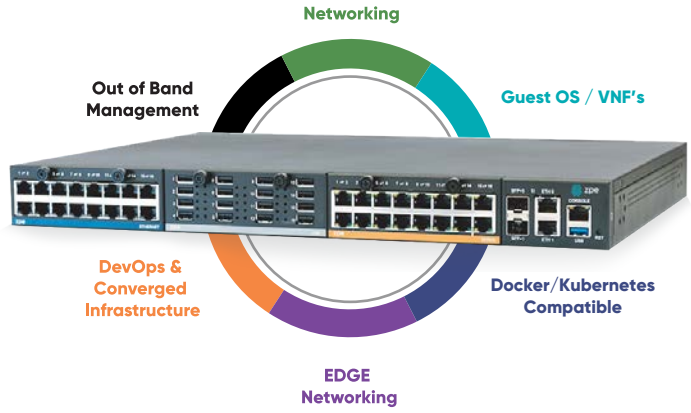
Nodegrid Services Router™

Modular x86 Appliance with Software-Defined Networking (SDN), Network Functiion Virtualization (NFV), and Out-of-Band (OOB) Technologies

Nodegrid Services Router (NSR) is a modular open platform appliance designed for Software-Defined Networking (SDN), Out-of-Band (OOB) management, DevOps, SD-WAN, remote/branch offices, retail locations, and Network Function Virtualization (NFV) capabilities. NSR is optimized to perform various network functions including switching, routing, security, WAN acceleration, provide secure OOB remote access, run Docker applications and control IT devices at the edge of the network, and within converged infrastructure (CI) environments.



Nodegrid Services Router - Features

- Modular open platform appliance with SDN, NFV and Docker capabilities
- Networking with layer 2 switching, layer 3 routing, QoS, MPLS, client/server VPN, multi-site IPSEC
- Vendor-neutral Out-of-Band for Serial & USB consoles / IPMI / Power Management
- An assortment of interface cards
- Firewall – IP packet and security filtering
- Centralized configuration and automation via Zero-Touch-Provisioning (ZTP) for IPv4/IPv6, BGP, OSPF, RIP Routing support
- 4G/LTE cellular modem with dual SIM for failover/on-demand
- Wi-Fi AP (hotspot or client)
- Compute server card for additional processing capabilities
- Fine Grained Security: Policy-based via AD/LDAP
- Data logging (sessions), Environment monitoring, Event notification and Alarms
- Nodegrid Manager software for 360 view, natural search and clustering
- Chassis: 2x SFP+, 2x GE, 2x USB 2.0, USB 3.0, Console, HDMI, Dual AC PSU, Dual hot-swappable fans

Nodegrid Services Router - Benefits

- Software Defined Networking and Network Function Virtualization
- Modular platform for the Edge, Cloud, CI, Data Center, and DevOps
- Quick deployment with ZTP, automation, OpenFlow, RESTful
- Encrypted data transit with SSL and IPSec technologies
- Consistent services and policies with centralized management
- Separation of control-plane and data-plane
- Run multiple functions concurrently on a single device
- Reduce operational costs by keeping configuration current via ZTP automation
- Reduce downtime with alerting, automation and cellular failover

NSR™ has modular services cards for networking, OOB serial & USB, cellular, Wi-Fi, compute and storage. NSR has the latest generation of networking switch backplane for SDN, an assortment of modular services cards, a multi-core Intel CPU for concurrent NFV's and Nodegrid 64-bit Linux OS – a combination that enables flexible interfaces, dependable non-blocking network capabilities, an ever-evolving open platform and lightning-fast response times. Future proof your investment as your business evolves.

NSR Addresses Modern Infrastructure Challenges

Modern network infrastructure needs to be versatile to keep up with the growth of the industry. Scalability, more than ever is at the center of business needs. Is your infrastructure scalable? Enterprises face challenges in their cloud transformation because traditional networks were not built for the Cloud. Networking teams typically spend a long time during evaluation, especially when numerous appliances are required (for Networking, OOB, Failover, Firewall, IPSEC...). Deploying multiple appliances, setting consistent configuration and adding network functions on new branches is time consuming. NSR addresses all these needs.

Technical Specifications

Accessibility
• 2 SFP+ and 2 Gigabit Ethernet ports with Multiple Routing Table and failover to 4G/LTE modem, Wi-Fi hotspot, and console port

Managed Power Devices
• Vendor neutral PDU support

Managed IPMI Devices
• OpenBMC, HP iLO, Dell iDRAC, Supermicro/Quanta IPMI, Cisco CIMC/UCS, IBM IMM, Oracle ILOM, EMC/NetApp Storage IPMI

Networking
• IPv4/IPv6 Support
• Embedded Layer 2 switching, Layer 3 routing, BGP, OSPF, RIP, QoS, MPLS, DHCP (Client & Server)

Port Access
• Direct access by port name, TCP port, device name and IPv4/IPv6
• High performance port login: <1 sec on SSH, <3 sec on Telnet
• 1,000 simultaneous sessions
• Port sharing, port custom field support, port icon configuration, port search
• Device clustering across multiple NodeGrid units
• DeviceURL™ bookmarks, FireTrail™ secure tunnels
• Break-over SSH support
• Power Management Integration within user's session
• HTML5 viewer (No Java) for IPMI SoL and KVM, WEB, Console, Virtual Media support

System Management
• Extensible automated control based on actionable real-time data
• Web GUI management portal, command line interface (CLI), Linux root shell, SNMP
• Zero Touch Provisioning for configuration and firmware updates
• Multiple and customizable user levels of access
• Auto-discovery via network scan & hostname of attached serial port
• NTP support, global time zone support
• Network Failover to 4G/LTE or Wi-Fi
• Orchestration - Puppet, Chef, NodeGrid Manager, OpenFlow

Security
• X.509 SSH certificate support, 4096-bit encryption keys
• Selectable cryptographic protocols for SSH and HTTPS (TLSv1.2, TLSv1.1, TLSv1)
• Selectable cypher suite levels: high, medium, low, custom
• Local, AD/LDAP, RADIUS, TACACS+, Kerberos authentication
• Local, backup-user authentication support
• User-access lists per port
• Group/role-based authorization: AD/LDAP, RADIUS, TACACS+
• Fine Grain port access, power access, appliance privilege
• IP packet and security filtering, IP forwarding support
• SSL VPN (Client and Server), IPsec, Firewall
• MD5/SHA System configuration checksum, System event syslog
• System event syslog
• Custom security with secure default settings
• Strong password enforcement
• Network Function Virtualization (NFV)

Access Protocols
• HTTPS, SSHv2; optional HTTP, Telnet and SSHv1

Device View Options
• Tree, Table, Geo Map, Node and WEB with NodeIQ™ search

Data Logging and Notifications
• Local port buffering – 20 MB per port
• Local, NFS, syslog, off-line data logging
• Time stamp and rotation for data logging
• Event destination: email, syslog, local
• Notification: syslog, email

Operating System
• Built-in 64-bit Linux

Power Specifications
• Dual AC 100-240 VAC, 50/60 Hz
• Power Consumption 90W typical

Warranty
• 2 year limited warranty

Hardware Features

CPU & Storage
• Intel x86_64 multi-core
• 8GB of DDR4 DRAM (Upgradeable)
• 32GB FLASH (mSATA SSD) (Upgradeable)

Interfaces
• 2 SFP+ Ethernet, 2 Gigabit Ethernet, 1 Console on RJ45, 1 USB 3.0, 2 x USB 2.0, 1 HDMI

Physical
• Front-Rear mounting brackets
• Size (L x W x H): 438 x 332 x 43mm (17.2 x 13.1 x 1.7 in), 1U
• Weight: 4.9 kg (10.8 lb), depending on options
• Air Exhaust or Air Intake Fans (Swappable)

Environmental
• Operation: 0 to 45° C (32 to 113° F), 5-95% RH, non-cond.
• Storage: -20 to 67° C (-4 to 153° F), 10-90% RH, non-cond.

Ordering Information

NSR-TOP1-DAC - NSR Chassis, Dual AC, Multi-Core Intel CPU, On-board Switch, 5 Slots support, 8GB DDR4, 32GB MSATA, Hot-Swappatble Fans

NSR-BASE-DAC - NSR Chassis, Dual AC, Multi-Core Intel CPU, On-board Switch, 3 Slots support, 8GB DDR4, 32GB MSATA, Hot-Swappatble Fans

NSR-TOP1-SAC - NSR Chassis, Single AC, Multi-Core Intel CPU, On-board Switch, 5 Slots support, 8GB DDR4, 32GB MSATA, Hot-Swappatble Fans

NSR-BASE-SAC - NSR Chassis, Single AC, Multi-Core Intel CPU, On-board Switch, 3 Slots support, 8GB DDR4, 32GB MSATA, Hot-Swappatble Fans

NSR-TOP1-SAC-POE - NSR Chassis, Single AC & POE, Multi-Core Intel CPU, On-board Switch, 5 Slots support, 8GB DDR4, 32GB MSATA, Hot-Swappatble Fans

NSR-BASE-SAC-POE - NSR Chassis, Single AC & POE, Multi-Core Intel CPU, On-board Switch, 3 Slots support, 8GB DDR4, 32GB MSATA, Hot-Swappatble Fans

Expansion Cards and Accessories

NSR-16ETH-EXPN - NSR 16-Port 1GbE – Ethernet Expansion Card

NSR-8ETH-POE-EXPN - NSR 8-Port 1GbE Ethernet with POE+ Expansion Card

NSR-16SRL-EXPN - NSR 16-Port RJ45 Serial Rolled Expansion Card

NSR-16USB-EXPN - NSR 16-Port USB Type A Expansion Card

NSR-8SFP-EXPN - NSR 8-Port 10GbE SFP Expansion Card

NSR-DISK-EXPN - NSR Storage Expansion Card

NSR-COMP-EXPN - NSR Compute 4-core, 8GB DDR4, 32GB SATA Expension Card

NSR-M2-EXPN - NSR M.2 / Sata Expansion Card

NSR-COVER - NSR Cover Plate

NSR-UPG-DDR4 - NSR DDR4 UPGRADE – 16GB

NSR-UPG-MSATA - NSR MSATA UPGRADE – 64GB

NSR-FAN-OUT - NSR Replacement Fan – Exhaust (air out)

NSR-FAN-IN - NSR Replacement Fan – Intake (air in)

M2-CELL-A - M.2 Cellular – Dual SIM, cables and antennas

M2-S064 - M.2 SATA 64GB

M2-S128 - M.2 SATA 128GB

46757 Fremont Blvd. Fremont, CA 94538 zpesystems.com | 844-4ZPE-SYS