Nodegrid Link SR™

## Deliver targeted functionality right where you need it

Nodegrid Link SR™ (LSR) brings versatility in a tiny networking package. With an extremely small footprint, the LSR is your link to agile services at even your most remote locations. **Deploy virtualized network functions, automated provisioning, secure out-of-band (OOB), & more — no matter where you need them.** The LSR gives you a lightweight solution to easily deploy and manage edge networks. Link SR is the only wireless WAN 5G/4G/LTE bridge with fiber interfaces for long distance connectivity in low-signal enviornmetns such as warehouse and datacenters.

Benefits

- **Reduce CAPEX & OPEX expenses** with a consolidated, extensible solution & automated management.

- **Reduce downtime** & trips to remote locations with instant access

- **Minimize MTTR, downtime & expenses** with secure, centralized remote device access & control

- **Increases site reliability** with open industry standard hardware, & easy-to-use software

Features

- **Strong OOB Management Integration**
- **Extensible Applications** with virtualization & containers
- **Zero Touch Provisioning (ZTP)** over the WAN for fast & easy setup in remote locations
- **Integrates with ZPE Cloud & Nodegrid Clustering Feature** for unified, vendor-neutral management solution
- **Modern x86_64bit Linux Kernel** for fast security patching & widespread software availability
- **Extended Automation** based on actionable data
- **Failover to 5G/4G/LTE & Wi-Fi**
- **Gateway & Multi-Routing Table Capability**
- **Encrypted Data Transit** with SSL, & IPSec & Wireguard VPN technologies
- **DHCP Server** Extra IPs for your remote site or replace your current router altogether
- **Built-In Firewall**
- **Secure** Selectable encrypted cryptographic protocols & cypher suite levels, configuration checksum™
- **Power Control & Monitoring** Get alerts on IT device health & solve problem automatically
- **Orchestration** Puppet, Chef, Ansible, RESTful API's

Remote Office / Branch Location **Remote User**
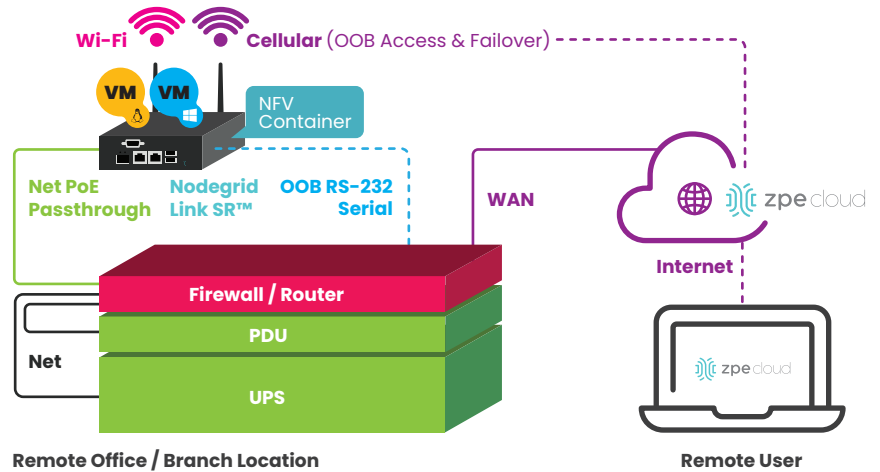
Nodegrid® OS comes standard with the LSR, allowing you to virtualize with guest OS, third-party and custom applications, and Docker, Kubernetes, and LXC containers. Power your LSR via PoE, and connect multiple end devices to deliver critical functionality.

LSR can be powered by PoE and combines routing capabilities via Cellular & Wi-Fi Access Point (AP), "linking" your branch server room or closets to the Internet. Lacking cellular signal where your devices are? No problem! Simply run a network cable and use Link SR as your cellular gateway.

LSR serves as a perfect solution to keeping remote branch locations functioning properly. With ZPE Cloud™, deploying and provisioning your remote devices is fast, consistent and secure. LSR allows for 24/7 remote presence at the edge of the network. With the ability to add Wi-Fi connectivity and 5G/4G/LTE failover, locations without IT personnel on staff are just a simple session away from resolution.

Nodegrid Link SR Interfaces

- 1X **GbE on RJ45**
- 2X **DIO**
- 1X **Wi-Fi**
- 1X **RJ45 Serial Ports**
- 1X **SFP**
- 2X **OUT**
- 1X **Cellular 4G/LTE** with Dual SIM

Technical Specifications

Connectivity
- 1X Gigabit Ethernet Port on RJ45 with Power Input (PoE)
- 1X SFP 1 Gigabit Port
- 2X Digital Out Port
- 1X Wi-Fi (Optional)
- 1X VGA Port
- 2X GPIO
- 2X USB 2.0 Hosts on Type A
- 1X Cellular Slot with Dual SIM (Optional)
- Multiple Routing Table

Managed Power Devices
Vendor-neutral PDU support

Managed IPMI Devices
OpenBMC, HP iLO, Dell iDRAC, Supermicro/Quanta IPMI,
IPMI 2.0 compatible devices, Cisco CIMC/UCS, IBM IMM, Oracle ILOM,
EMC/NetApp Storage IPMI

Sensors
Support for a wide range of USB sensorsManaged Devices
Serial devices, USB devices, Network devices, PDU, & IPMI devices

Networking
- IPv4 / IPv6 Support
- VLAN, Layer 3 Routing, BGP, OSFP, RIP, QoS, DHCP (Client & Server)

Port Access
- Direct access by port name, TCP port, device name & IPv4/IPv6
- High performance port login: <1 sec on SSH, <3 sec on Telnet
- 250+ simultaneous sessions
- Port sharing
- Command Line Interface (CLI)
- Port custom field support, port icon configuration, port search
- Device clustering across multiple Nodegrid units
- Break-over SSH support

Access Protocols
HTTPS, SSHv2; (Optional) HTTP, Telnet & SSHv1

Device View Options
Tree, Table, Geo Map, Node & WEB with search

Power Specifications
- 10-57 VDC power input
- PoE power Input
- Power consumption 20 W typical

Operating System
Built-in x86_64bit Nodegrid OS

Warranty
2-Year Limited Warranty

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

Physical
- DIM Rail & Wall Mountable
- Size (L X W X H): 170 X 130 X 55 mm (6.69 X 5.11 X 2.16 in)
- Weight: 1.04 kg (2.3 lb)
- Shipping Weight: 1.58 kg (3.5 lb)
- Shipping (L X W X H): 228.6 X 342.9 X 88.9 mm (9 X 13.5 X 3.5 in)

Environmental
- Operation: -20 to 60° C (-4 to 140° F), 5-95% RH, non-cond.
- Storage: -20 to 67° C (-4 to 153° F), 10-90% RH, non-cond.

System Management
- Extensible, automated control based on actionable real-time data
- Web GUI management portal, web console, Command Line Interface (CLI)
- Linux root shell, SNMP, RESTful API
- Zero Touch Provisioning (ZTP) via LAN/DHCP, WAN/ZPE Cloud, USB for configuration & firmware updates
- Multiple & customizable user levels of access
- Auto-discovery via network scan & custom probes
- SNMPv1,v2 & SNMPv3-v1 IPv4/IPv6 with MD5, SHA-224, SHA-256, SHA-384, SHA-512, DES, AES-192, AES-256
- Orchestration Integration & Automation: Puppet, Chef, Ansible, RESTful, ZPE Cloud & Nodegrid Clustering Feature
- Manager Orchestration integration & automation: Puppet, Chef, Ansible, RESTful, ZPE Cloud & Nodegrid Manager
- File sharing via FTP, NFS, SSHFS, Windows Sharing, web file browser, ZPE Cloud
- Remote Procedure Call (RPC, gRPC)
- NetFlow, LLDP

Security
- Hardened device with BIOS protection, TPM 2.0, UEFI Secure Boot, Signed OS, Self-Encrypted Disk (SED), Geofencing
- X.509 SSH certificate support, 4096-bit encryption keys
- Selectable cryptographic protocols for SSH & HTTPS (TLSv1.3,TLSv1.2, TLSv1.1, TLSv1)
- Selectable cypher suite levels: high, medium, low, custom
- IPSec, Wireguard, OpenSSL VPN with support for multi sites
- Local, AD/LDAP, RADIUS, TACACS+, Kerberos, authentication
- SAML2 support via DUO, OKTA, Ping Identity, ADFS
- Two-Factor Authentication with RSA & DUO
- Local, backup-user authentication support
- User-access lists per port
- Group/role-based authorization: AD/LDAP, RADIUS, TACACS+
- Fine grain & role-based access control
- Firewall: IP packet & security filtering, IP forwarding support
- MD5 / SHA System Configuration Checksum™
- System event logging to file, syslog, email, ZPE Cloud, Splunk & more
- Custom security settings
- Strong password enforcement

CPU & Storage (Upgrades Available)
- Intel x86_64 Dual-Core
- 4-8GB of DDR3 DRAM
- 16GB Self Encrypted Disk (SED)

Interface
- 1X RJ45 Serial ports
- 1X SFP (1G)
- 1X Gigabit (10/100/1000BT) Ethernet interfaces on RJ45 with PoE in
- 2X GPIO Port (Digital I/O TTL level 5.5V max @ 64mA)
- 2X Digital Out Port (Signal MOSFET Digital Output 2.5V to 60V @ 500mA max)
- 2X USB 2.0 Hosts on Type A
- 1X Wi-Fi (Optional)
- 1X 4G/LTE Cellular Modem Slots with Dual SIM (Optional)
- 1X VGA port

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Ordering Information

Channel SKU	Description	CPU	Memory	Power	Special
ZPE-LSR24-Base	ZPE Nodegrid Link SR. 1 RJ45 Serial rolled, 1 ETH (PoE in), 1 SFP, 2 GPIO, 2 OUT, X86_64, 2-Cores, 4GB DDR3, Disk1: 16GB, 1 VGA. Dual DC input. AC Power Adaptor not included. Order ZPE-LSR-PSU separately. Order ZPE Cloud & app subscription. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	2 Cores	4GB	AC, DC, PoE	Base
ZPE-LSR24-W5	ZPE Nodegrid Link SR. 1 RJ45 Serial rolled, 1 ETH (PoE in), 1 SFP, 2 GPIO, 2 OUT, X86_64, 2-Cores, 4GB DDR3, Disk1: 16GB, 1 VGA. With addition of: Wi-Fi 5 (866Mbps 2X2 dual stream 802.11ac). Dual DC input. AC Power Adaptor not included. Order ZPE-LSR-PSU separately. Order ZPE Cloud & app subscription. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	2 Cores	4GB	AC, DC, PoE	Wi-Fi
ZPE-LSR24-4G	ZPE Nodegrid Link SR. 1 RJ45 Serial rolled, 1 ETH (PoE in), 1 SFP, 2 GPIO, 2 OUT, X86_64, 2-Cores, 4GB DDR3, Disk1: 16GB, 1 VGA. With addition of: Antennas & 4G/LTE (CAT12) radio. Dual DC input. AC Power Adaptor not included. Order ZPE-LSR-PSU separately. Order ZPE Cloud & app subscription. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	2 Cores	4GB	AC, DC, PoE	4G
ZPE-LSR24-4G-W5	ZPE Nodegrid Link SR. 1 RJ45 Serial rolled, 1 ETH (PoE in), 1 SFP, 2 GPIO, 2 OUT, X86_64, 2-Cores, 4GB DDR3, Disk1: 16GB, 1 VGA. With addition of: Wi-Fi 5 (866Mbps 2X2 dual stream 802.11ac) & antennas & 4G/LTE (CAT12) radio with dual-SIM. Dual DC input. AC Power Adaptor not included. Order ZPE-LSR-PSU separately. Order ZPE Cloud & app subscription. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	2 Cores	4GB	AC, DC, PoE	4G Wi-Fi
ZPE-LSR24-4G-W5-D128G	ZPE Nodegrid Link SR. 1 RJ45 Serial rolled, 1 ETH (PoE in), 1 SFP, 2 GPIO, 2 OUT, X86_64, 2-Cores, 4GB DDR3, Disk1: 16GB, 1 VGA. With addition of: Wi-Fi 5 (866Mbps 2X2 dual stream 802.11ac) & antennas & 4G/LTE (CAT12) radio with dual-SIM & dedicated 128GB Disk2 for VM/Docker applications. Dual DC input. AC Power Adaptor not included. Order ZPE-LSR-PSU separately. Order ZPE Cloud & app subscription. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	2 Cores	4GB	AC, DC, PoE	4G Wi-Fi Second Storage
ZPE-LSR48-Base	ZPE Nodegrid Link SR. 1 RJ45 Serial rolled, 1 ETH (PoE in), 1 SFP, 2 GPIO, 2 OUT, X86_64, 4-Cores, 8GB DDR3, Disk1: 16GB, 1 VGA. Dual DC input. AC Power Adaptor not included. Order ZPE-LSR-PSU separately. Order ZPE Cloud & app subscription. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	4 Cores	8GB	AC, DC, PoE	Base
ZPE-LSR48-W5	ZPE Nodegrid Link SR. 1 RJ45 Serial rolled, 1 ETH (PoE in), 1 SFP, 2 GPIO, 2 OUT, X86_64, 4-Cores, 8GB DDR3, Disk1: 16GB, 1 VGA. With addition of: Wi-Fi 5 (866Mbps 2X2 dual stream 802.11ac). Dual DC input. AC Power Adaptor not included. Order ZPE-LSR-PSU separately. Order ZPE Cloud & app subscription. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	4 Cores	8GB	AC, DC, PoE	Wi-Fi

Ordering Information

Channel SKU	Description	CPU	Memory	Power	Special
ZPE-LSR48-4G	ZPE Nodegrid Link SR. 1 RJ45 Serial rolled, 1 ETH (PoE in), 1 SFP, 2 GPIO, 2 OUT, X86_64, 4-Cores, 8GB DDR3, Disk1: 16GB, 1 VGA. With addition of: Antennas & 4G/LTE (CAT12) radio. Dual DC input. AC Power Adaptor not included. Order ZPE-LSR-PSU separately. Order ZPE Cloud & app subscription. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	4 Cores	8GB	AC, DC, PoE	4G
ZPE-LSR48-4G-W5	ZPE Nodegrid Link SR. 1 RJ45 Serial rolled, 1 ETH (PoE in), 1 SFP, 2 GPIO, 2 OUT, X86_64, 4-Cores, 8GB DDR3, Disk1: 16GB, 1 VGA. With addition of: Wi-Fi 5 (866Mbps 2X2 dual stream 802.11ac) & antennas & 4G/LTE (CAT12) radio with dual-SIM. Dual DC input. AC Power Adaptor not included. Order ZPE-LSR-PSU separately. Order ZPE Cloud & app subscription. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	4 Cores	8GB	AC, DC, PoE	4G Wi-Fi
ZPE-LSR48-4G-W5-D128G	ZPE Nodegrid Link SR. 1 RJ45 Serial rolled, 1 ETH (PoE in), 1 SFP, 2 GPIO, 2 OUT, X86_64, 4-Cores, 8GB DDR3, Disk1: 16GB, 1 VGA. With addition of: Wi-Fi 5 (866Mbps 2X2 dual stream 802.11ac) & antennas & 4G/LTE (CAT12) radio with dual-SIM & dedicated 128GB Disk2 for VM/Docker applications. Dual DC input. AC Power Adaptor not included. Order ZPE-LSR-PSU separately. Order ZPE Cloud & app subscription. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	4 Cores	8GB	AC, DC, PoE	4G Wi-Fi Second Storage

Accessories

ZPE-LSR-PSU	ZPE Nodegrid Link SR. Power Supply (Primary & Secondary)

Support

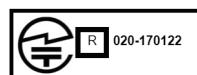| ZPE-LSR-TX-BASE-ALL-EW1G	ZPE Nodegrid Link SR. 1Y 24X7 Gold Upgrade Support
ZPE-LSR-TX-BASE-ALL-EW2G	ZPE Nodegrid Link SR. 2Y 24X7 Gold Upgrade Support
ZPE-LSR-TX-BASE-ALL-EW3G	ZPE Nodegrid Link SR. 3Y 24X7 Gold Upgrade Support

NOTE: If you need more storage or other combinations please contact ZPE Sales: sales@zpesystems.com

ICES-003 (A)
NMB-003(A)

RoHS Compliant

Anatel: 01127-22-14117

| R | 003-170295 | FCC ID: 2ARCQ-EM7565 |
| T | D170171003 | IC: 24339-EM7565 |

| R | 003-200132 | FCC ID: N7NEM91 |
| T | D200112003 | IC: 2417C-EM91 |

| R | 020-170122 | FCC ID: RYK-261ACNBT |
| | | IC: 6158A-261ACNBT |

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