FRONT
(Fanless Model)

FRONT

BACK

Nodegrid Serial Console – S Series™

Auto-Sensing Secure Remote Access & Control for IT Devices

Nodegrid Serial Console - S Series™ (NSC-S) is the data center's next generation of serial console server, providing built-in auto-switching capabilities and USB connectivity for next-gen IT solutions.
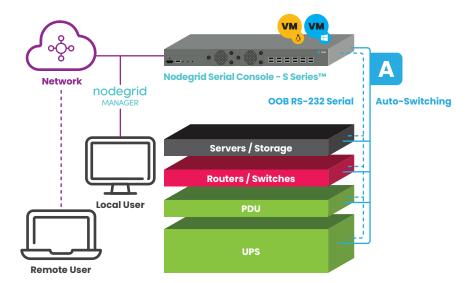NSC-S is available in 16, 32, and 48 port configurations, each including 14 additional USB serial ports. NSC-S detects and reconfigures serial device pin-outs on-the-fly, eliminating the need for expensive dongles and cumbersome adapters.

Benefits

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

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

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

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

Features

- Gen 3 Out-of-Band Management Integration
- **Extensible Applications** with virtualization & containers
- **Centralized Configuration & Automation** via Zero-Touch-Provisioning (ZTP)
- **Integrates with ZPE Cloud & Nodegrid Clustering Feature** for a unified, vendor-neutral management solution
- **Modern x86 _ 64bit Linux Kernel** for fast security patching & widespread software availability
- **Extended Automation** based on actionable data
- **Encrypted Data Transit** with SSL, IPSec, & Wireguard VPN technologies
- **Built-In Firewall**
- **Secure** Selectable encrypted cryptographic protocols & cypher suite levels, configuration checksum™
- **Power Control & Monitoring** Get alerts on IT device health & solve problems automatically
- **Automation & Orchestration** Puppet, Chef, Ansible, RESTful APIs

Doing a serial console refresh? Leave existing cabling intact and simply replace legacy units with the NSC-S. Nodegrid saves setup and configuration time with legacy serial cable support. Nodegrid S Series cuts cabling costs while granting the freedom to access and manage new deployments based on current pin-outs.

Simple & Fast

Intel-based server-like hardware platform. 16, 32, and 48 auto-sensing and auto-switching serial ports. Cisco or legacy pin-out. No adapters or dongles needed. 14X USB ports for serial console, storage, cellular modem, Wi-Fi, or Ethernet.

Reliable & Scalable

Deployed by the biggest tech and financial companies in the world; Designed by award-winning console industry veterans. Built using reliable and open modular industry standard hardware components.

Secure & Sustainable

Blends existing policy-based enterprise AD/LDAP/SAML authentication and authorization with the latest in cryptographic protocols and cypher suite levels, up-to-date SSL and SSH data encryption, IP filtering, secure boot, self-encrypted disk and a system configuration checksum to keep your information secure.

Technical Specifications

Connectivity
• Dual Gigabit Ethernet ports with Multiple Routing Tables

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 sensors

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

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 Cluster Feature
• 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
• SAML 2.0 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+, SAML 2.0
• 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

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

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

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: local, syslog, email, ZPE Cloud, Splunk & more
• Notification: syslog, email, ZPE Cloud, Splunk & more

Power Specifications
• 40V-63 VDC dual power input (redundant)
• Power consumption 45 W typical
• Single or Dual AC: 100-240 VAC, 50/60 Hz

Operating System
Built-in x86_64bit Nodegrid OS

Warranty
2-Year Limited Warranty

CPU & Storage (Upgrades Available)
• Intel x86_64 dual core
• 4GB of DDR3 DRAM
• 32GB FLASH (mSATA SSD)

Interfaces
• 16, 32, 48 RS-232 serial ports on RJ45 @ 230,400 bps max/port
• 14X USB serial ports on USB-A @921,600 bps max/port (ports can be used for other features as well)
• 2X Gigabit (10/100/1000BT) Ethernet interfaces on RJ45 or 2 SFP+ 1/2.5/10GB compatible
• 1X RS-232 serial console port on RJ45
• 1X USB 3.0 Host & 13 USB 2.0 Hosts on Type A connector
• 1X HDMI output port

Physical
• Front-Rear mounting brackets
• Size (L X W X H): 443 X 312 X 43 mm (17.4 X 12.3 X 1.7 in), 1U
• Weight: 4.9 kg (10.8 lb), depending on options
• Shipping Weight: 7.65 kg (17 lb)
• Shipping (L X W X H): 600 X 440 X 210 mm (23.6 X 17.3 X 8.3 in)
• Front-to-Back or Back-to-Front Fans (Swappable)

Environmental
• Operation: 0 to 50° C (32 to 122° F), 5-95% RH, non-cond.
• Storage: -20 to 67° C (-4 to 153° F), 5-95% RH, non-cond.

Safety
UL 62368-1 (USA) CSA C22.2 No. 62368-1(Canada), EN 62368-1:2014 (2nd Edition) (EU), IEC62368-1, 2nd Edition, Rev. February 26, 2014 (International), CB, EAC/Customs Union (CU), KCC, BSMI, CCC

Ordering Information

Channel SKUs	Description
NSC-TxxS-STND-yyy-z	ZPE Nodegrid Serial Console-S Series. NSC-S xx-port unit, yyy-Power Configuration, Switchable Pinouts, 2-Cores, 4GB RAM, 32GB SSD, z-Fan Configuration
NSC-TxxS-STND-yyy-z-SFP	ZPE Nodegrid Serial Console-S Series. NSC-S xx-port unit, yyy-Power Configuration, Switchable Pinouts, 2-Cores, 4GB RAM, 32GB SSD, z-Fan Configuration, Fiber SFP

LEGEND

xx = Port Configuration: 16, 32, 48
yyy = Power Configuration: SAC (Single AC), DAC (Dual AC), DDC (Dual DDC)

z = Fan Option
(B = without Fan)
(F = with Fan)

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