

IOLAN SDS Rack Serial to Ethernet Device Servers

 perle.com/products/iolan-sds-rack-terminal-server.shtml

- 8 or 16 software selectable RS232/422/485 serial port interfaces
- 10/100/1000 Ethernet
- Advanced security features for data encryption, user authentication and event management



The IOLAN SDS Device Server (also used as a Terminal Server or Console Server) is the most advanced product for serial to Ethernet applications available.

Delivering the highest performance in a 1U form factor, an IOLAN SDS offers robust security, flexibility and next generation IP (IPv6) technology, ideal for applications that require remote serial device communication, data capture or monitoring. Available in 8 and 16 port sizes, the IOLAN SDS series has the right fit for your serial application needs.

Features and Benefits - SDS Serial Device Server

- [TrueSerial®](#) delivers the most authentic serial connections across Ethernet
- Universal, software selectable RS-232/422/485 (EIA-232/422/485) serial ports with RJ45 interface prevents mechanical tampering in the field
- 400Mhz, 750 MIPS, 32 bit processor* with integrated hardware encryption for the best performance on the market
- [FIPS 140-2](#) – Cryptographic modules meet US Government NIST compliancy
- 1U rack form factor with flexible front, rear or DIN Rail mounting
- Indicators for network and serial interfaces for easy troubleshooting
- Plug & Play installation utility eliminates configuration hassles for all IOLAN's on your IP network
- Secure AES(256/192/128), 3DES, Blowfish, CAST128, ARCFOUR or ARCTWO data encryption across the LAN via SSH and SSL
- Advanced user authentication via RADIUS, TACACS+, LDAP, Kerberos, NIS and RSA prevent unauthorized access
- Advanced event management using Port buffering, Syslog, SNMP V3 and email event notification
- Advance management capabilities via a Windows Device Manager, HTTP, HTTPS/SSL/TLS, SSH and Telnet
- TruePort software provides true remote serial ports over an Ethernet LAN
- [Share a serial port with multiple TCP or UDP servers](#)
- ModBus Gateway
- Power over serial cable eliminates costs of a separate power installation
- Next Generation IP support (IPv6) for investment protection and network compatibility
- Routing protocols including PPP, SLIP/CSLIP, CIDR RIPV2, RIPV1
- 15 Kv ESD provides protection against electrostatic discharge and power surges
- Protective solid steel enclosure
- Java-free browser access to remote serial console ports via Telnet and SSH
- [Ping watchdog probes](#) enable customers to power cycle equipment with attached Perle RPS power

switches in the event of an unresponsive networking gear

Secure Serial to Ethernet Connectivity

The IOLAN SDS Device Server enables administrators to securely access remote serial console ports on equipment such as PBX, servers, routers, network storage equipment and security appliances through an IP network. Sensitive data such as credit card holder information is protected through standard encryption tools such as Secure Shell (SSH) and Secure Sockets Layer (SSL). Access by authorized users is assured via authentication schemes such as RADIUS, TACACS+, LDAP, Kerberos, NIS and RSA Security's SecurID tokens.

By using encryption technologies, an IOLAN serial device server protects sensitive and confidential data from a serial device such as a credit card reader before being sent across a corporate Intranet or public Internet. For compatibility with peer encryption devices, all of the major encryption ciphers such as AES, 3DES, RC4, RC2 and CAST128 are fully supported.

Recognized as the most secure method for communicating to remote private networks over the Internet, the IPSec standard provides robust authentication and encryption of IP packets at the network layer of the OSI model. As a standard it is ideal for multi-vendor interoperability within a network, providing flexibility and the ability to match the right solution for a particular application.

IOLAN Plug-ins

Backed with the experience of connecting hundreds of thousands of different devices to Ethernet over the years, using a Perle Device Server you can rest assured that virtually any device with a serial COM port will operate in conjunction with your desired application exactly as it did when you had it directly connected. If the unlikely event occurs that the Perle Device Server does not enable this out of the box, *Perle will make it work*.

Perle IOLAN Device Servers utilize customer installable "Device Plug-ins" to successfully network devices where other solutions have failed.

Perle provides new "Device Plug-ins" for its customers every day. If you have a device that you are struggling to attach to your network, contact Perle immediately. In the rare event that our out-of-box solutions do not meet your unique requirements, we will match you up with an existing Device Plug-in, or tailor one for you.

[Request a free engineering consultation now.](#)

Device Plug-in Features

- Perle maintains a growing library of Device Plug-ins or we can quickly tailor one for you – all at no charge**
- Customer installable Device Plug-ins are simple to download into a Perle IOLAN Device Server
- Device Plug-ins are designed to match your specific device for complete compatibility
- Device Plug-ins are fully supported on the firmware release under which they are delivered

Advanced IP Technology

With support for Next Generation IP (IPv6) the IOLAN range provides organizations with investment protection to meet this rapidly growing standard.

Demand for IPv6, which is compatible with IPv4 addressing schemes, is driven by the need for more IP address. With the implementation and rollout of advanced cellular networks, a robust method is needed to handle the huge influx of new IP addressable devices on the Internet. In fact, the US Department of Defense has mandated that all equipment purchased be IPv6 compatible. In addition, all major Operating Systems such as Windows, Linux, Unix and Solaris, as well as routers, have built-in support for IPv6.

It is therefore important for end users and integrators to select networking equipment that incorporates the IPv6 standard. The IOLAN line with support for IPv6 already built in, is the best choice in serial to Ethernet technology.

Flexible and Reliable Serial Connections

An IOLAN SDS is capable of pseudo connections to servers via Telnet, Rlogin, UDP or TCP socket based applications to remote devices. Where a server's application needs to access a fixed TTY or COM ports, Perle's [TruePort](#) software supplied with each device server performs COM port redirection across IP networks to remote Perle device servers either in encrypted or clear text modes.

Centralized control and management of multiple deployments is maintained through Perle's Device Manager software resulting in maximum uptime for your remote equipment.

Protection against electrostatic discharges and power surges is provided on all IOLAN SDS models with its robust 15Kv ESD protection circuitry enabling organizations to utilize this solution in the field with confidence.

Lifetime Warranty

Perle IOLAN SDS secure device servers are backed by the best service and support in the industry including Perle's unique lifetime warranty. Since 1976 Perle has been providing its customers with networking products that have the highest levels of performance, flexibility and quality.

Click diagram for larger picture

Serial Port Access

Connect directly using Telnet / SSH by port and IP address

[Connect with EasyPort menu by Telnet / SSH](#)

[Use an internet browser to access with HTTP or secure HTTPS via EasyPort Web menu](#)

Java-free browser access to remote serial console ports via Telnet and SSH

[Ports can be assigned a specific IP address \(aliasing \)](#)

Multisession capability enables multiple users to access ports simultaneously *

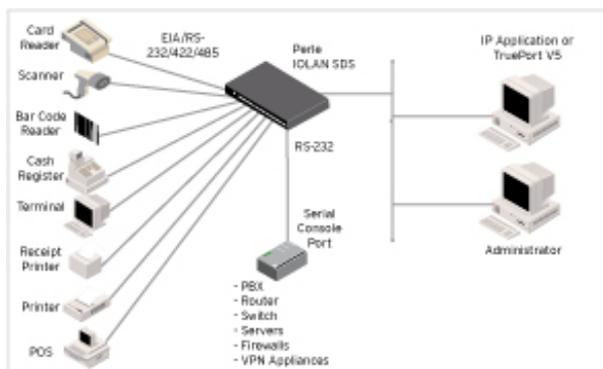
[Multihost access enables multiple hosts/servers to share serial ports](#)

Accessibility

In-band (Ethernet) and out-of-band (dial-up modem) support

[Dynamic DNS enables users to find a console server from anywhere on the Internet](#)

[Domain name control through DHCP option 81](#)



IPV6 and IPV4 addressing support

Availability

Primary/Backup host functionality enables automatic connections to alternate host(s)

Security

SSH v1 and v2

SSL V3.0/TLS V1.0, SSL V2.0

SSL Server and SSL client mode capability

SSL Peer authentication

[IPSec VPN : NAT Traversal, ESP authentication protocol](#)

Encryption: AES (256/192/128), 3DES, DES, Blowfish, CAST128, ARCFOUR(RC4), ARCTWO(RC2)

Hashing Algorithms: MD5, SHA-1, RIPEMD160, SHA1-96, and MD5-96

Key exchange: RSA, EDH-RSA, EDH-DSS, ADH

X.509 Certificate verification: RSA, DSA

Certificate authority (CA) list

Local database

RADIUS Authentication, Authorization and Accounting

TACACS+ Authentication, Authorization and Accounting

LDAP, NIS, Kerberos Authentication

RSA SecureID-agent or via RADIUS Authentication

SNMP v3 Authentication and Encryption support

IP Address filtering

Disable unused daemons

Active Directory via LDAP

Terminal Server

Telnet

SSH v1 and v2

Rlogin

Auto session login

LPD, RCP printer

MOTD - Message of the day

Serial machine to Ethernet

[Tunnel raw serial data across Ethernet - clear or encrypted](#)

Raw serial data over TCP/IP

Raw serial data over UDP

[Serial data control of packetized data](#)

[Share serial ports with multiple hosts/servers](#)

Virtual modem simulates a modem connection - assign IP address by AT phone number

Virtual modem data can be sent over the Ethernet link with or without SSL encryption

[TruePort com/tty redirector](#) for serial based applications on Windows, Linux, Solaris, SCO, HP UX, NCR UNIX and AIX. For a complete list of all the latest drivers click [here](#)

[TrueSerial](#) packet technology provides the most authentic serial connections across Ethernet ensuring serial protocol integrity

RFC 2217 standard for transport of serial data and RS232 control signals

Customizable or fixed serial baud rates

[Plug-ins allow customer or Perle provided plug-ins for special applications](#)

[Software Development Kit \(SDK \) available](#)

[Serial encapsulation of industrial protocols such as ModBus, DNP3 and IEC-870-5-101](#)

[ModBus TCP gateway enables serial Modbus ASCII/RTU device connection to ModBus TCP](#)

[Data logging will store serial data received when no active TCP session and forward to network peer once session re-established - 32K bytes circular per port](#)

Console Management

[Sun / Oracle Solaris Break Safe](#)

Local port buffer viewing - 256K bytes per port

External port buffering via NFS, encrypted NFS and Syslog

Event notification

[Manage AC power of external equipment using Perle RPS power management products](#)

[Clustering - central console server enables access ports across multiple console servers](#)

[Windows Server 2003/2008 EMS - SAC support GUI access to text-based Special Administrative Console](#)

[Ping watchdog probes](#) enable customers to power cycle equipment with attached Perle RPS power switches in the event of an unresponsive networking gear

Remote Access

Dial, direct serial PPP, PAP/CHAP, SLIP

[HTTP tunneling](#) enables firewall-safe access to remote serial devices across the internet

Automatic DNS Update Utilize DHCP Opt 81 to set IOLAN domain name for easy name management and with Dynamic DNS support , users on the Internet can access the device server by name without having to know its IP address. See [Automatic DNS update support](#) for details

[IPSEC VPN client/servers](#) Microsoft L2TP/IPSEC VPN client (native to Windows XP)

Microsoft IPSEC VPN Client (native to Windows Vista)

Cisco routers with IPSEC VPN feature set

Perle IOLAN SDS/STS and SCS models

OA&M (Operations, Administration and Management)

SNMP V3 - read and write, Perle MIB

Syslog

Perle Device Manager - Windows based utility for large scale deployments

Configurable default configuration

[Installation Wizard](#)

Set a Personalized Factory Default for your IOLANs

Protocols

IPv6, IPv4, TCP/IP, Reverse SSH, SSH, SSL, IPSec/IPv4, IPSec/IPv6, L2TP/IPSec, CIDR, RIPv2/MD5, ARP, RARP, UDP, UDP Multicast, ICMP, BOOTP, DHCP, TFTP, SFTP, SNTP, Telnet, raw, reverse Telnet, LPD, RCP, DNS, Dynamic DNS, WINS, HTTP, HTTPS, SMTP, SNMPV3, PPP, PAP/CHAP, SLIP, CSLIP, RFC2217, MSCHAP

* Available on 2 and 4 port models

IOLAN SDS8

IOLAN SDS16

Processor	MPC8349E, 400 Mhz, 750 MIPS	
Memory		
RAM MB	64	64
Flash MB	16	16
Interface Ports		
Number of Serial Ports	8	16
Serial port interface	Software selectable RS232 / RS485 / RS422 DTE on RJ45	
Sun / Solaris	Sun / Oracle 'Solaris' Safe - no "break signal" sent during power cycle causing costly server re-boots or downtime	
Serial port speeds	50bps to 230Kbps with customizable baud rate support	
Data bits	5,6,7,8, 9-bit protocol support	
Parity	Odd, Even, Mark, Space, None	
Flow Control	Hardware, Software, Both, None	
Serial port protection	15Kv Electrostatic Discharge Protection (ESD)	
Local console port	RS232 on RJ45 with DB9 adapter (provided)	
Network	10/100/1000-base TX Ethernet RJ45	
	Software selectable Ethernet speed 10/100/1000, Auto	
	Software selectable Half/Full/Auto duplex	
Ethernet Isolation	1.5Kv Magnetic Isolation	
Power		
Power Supply	USA models - IEC320-C13 to NEMA 5-15P line cord	
	UK models - IEC320-C13 to BS1363 line cord	

EU models - IEC320-C13 to CEE 7/7 Schuko

South Africa Models - IEC320-C13 to BS546 line cord

Australia models - IEC320-C13 to AS3112 line cord

Nominal Input Voltage 110/230v AC

Input Voltage Range 100-240v AC

AC Input Frequency 47-63Hz

Current Consumption @ 100v (Amps) 0.12 0.13

Current Consumption @ 240v (Amps) 0.06 0.06

Typical Power Consumption (Watts) 12 13

Power Line Protection Fast transients: 1 KV (EN61000-4-4 Criteria B)
Surge: 2KV (EN61000-4-5 common mode),
1KV (EN61000-4-5 differential and common modes)

Indicators

LEDs Power
System Ready
Network Link activity
Serial: Transmit and Receive data per port

Environmental Specifications

Heat Output (BTU/HR) 42 45

MTBF(hours)* 140,740 110,300

Operating Temperature 0C to 55C, 32F to 131F

Storage Temperature -40C to 85C, -40F to 185F

Humidity 5 to 95% (non condensing) for both storage and operation.

Case SECC Zinc plated sheet metal (1 mm)

Ingress Protection rating IP30

Mounting 1U - 19" rack, front and rear mounting hardware included

Product Weight and Dimensions

Weight	3 kg	3.1 kg
Dimensions	1U Rack form factor - 26.4 x 43.4 x 4.4 (cm), 10.38 x 17.1 x 1.75 (in)	
Packaging		
Shipping Dimensions	59 x 36 x 9cm	
Shipping Weight	3.98 kg	4.0 kg
Regulatory Approvals		
Emissions	FCC Part 15, Subpart B, Class A CFR47:2003, Chapter 1, Part 15 Subpart B,(USA) Class A ICES-003, Issue 4, February 2004 (Canada) CISPR 32:2015/EN 55032:2015 (Class A) EN61000-3-2 : 2010, Limits for Harmonic Current Emissions EN61000-3-3 : 2010, Limits of Voltage Fluctuations and Flicker	
Immunity	CISPR 24:2010/EN 55024:2010 EN61000-4-2: Electrostatic Discharge EN61000-4-3: RF Electromagnetic Field Modulated EN61000-4-4: Fast Transients EN61000-4-5: Surge EN61000-4-6: RF Continuous Conducted EN61000-4-8: Power-Frequency Magnetic Field EN61000-4-11: Voltage Dips and Voltage Interruptions	
Safety	IEC 60950-1(ed 2); am1, am2 and EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013 CAN/CSA-C22.2 No. 60950-1-03 and ANSI/UL 60950-1, First Edition April 1st 2003 (Recognized Component)	
Other	Reach, RoHS and WEEE Compliant Directive 2011/65/EU restriction of the use of certain hazardous substances in electrical and electronic equipment and meets the following standard:: EN 50581:2012 CCATS - G168387 ECCN - 5A992 HTSUS Number: 8471.80.1000 Perle Limited Lifetime Warranty	

IOLAN DTE

RJ45 Socket	IOLAN RJ45 Socket	Direction	RS232		RS485 Full Duplex	RS485 Half Duplex	RS422
	1	←	DCD				
	2	→	RTS	TxD+	DATA+	TxD+	
	3	←	DSR				
	4	→	TXD	TxD-	DATA-	TxD-	
	5	←	RXD	RxD+		RxD+	
	6	—	GND	GND	GND	GND	GND
	7	←	CTS	RxD-		RxD-	
	8	→	DTR				

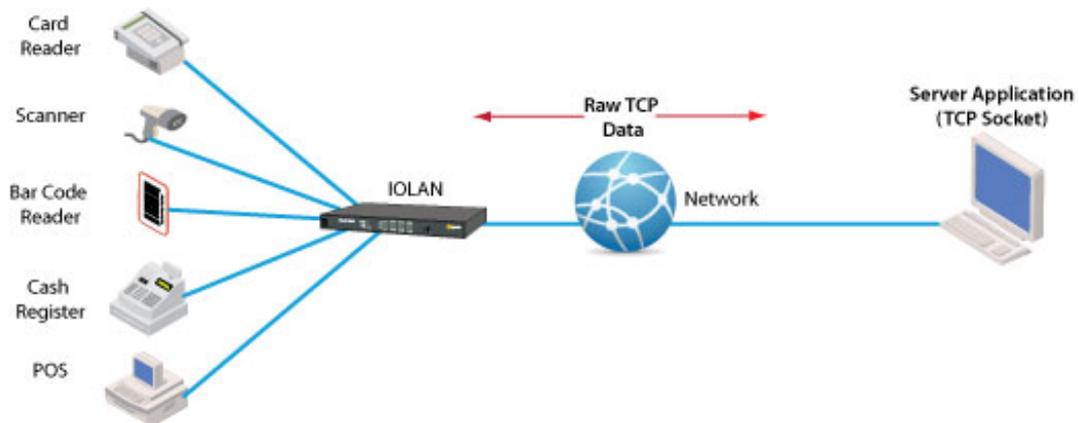
Optional Perle adapters for use with straight thru CAT5 cabling

*Calculation model based on MIL-HDBK-217-FN2 @ 30 °C

TCP

Using RAW TCP Sockets

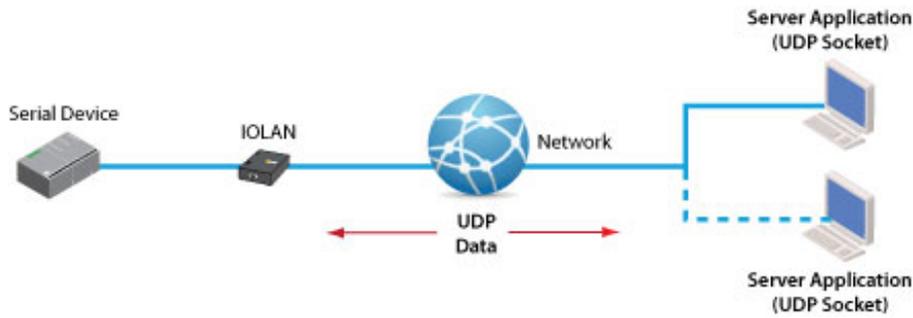
A raw TCP socket connection which can be initiated from the serial-Ethernet device or from the remote host/server. This can either be on a point to point or shared basis where a serial device can be shared amongst multiple devices. TCP sessions can be initiated either from the TCP server application or from the Perle IOLAN **serial-Ethernet** adapter.



UDP

Using Raw UDP Sockets

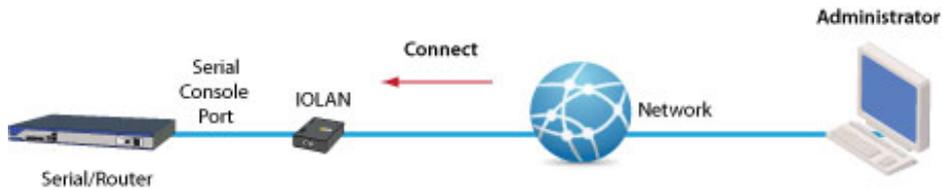
For use with UDP based applications, Perle IOLANs can convert serial equipment data for transport across UDP packets either on a point to point basis or shared across multiple devices.



Console Server

Console Management

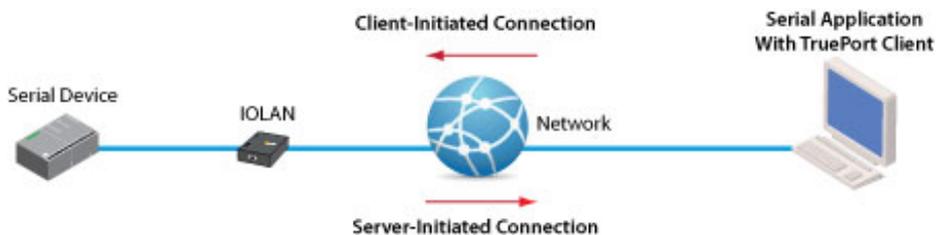
For access to remote console ports on routers, switches, etc., Perle IOLAN's enable administrators secure access to these RS232 ports via inband Reverse Telnet / SSH or out of band with dial-up modems. Perle IOLAN models with integrated modems are available.



COM/TTY

Connect Serial-based Applications with a COM/TTY Port Driver

Serial ports can be connected to network servers or workstations running Perle's TruePort software operating as a virtual COM port. Sessions can be initiated either from the Perle IOLAN or from TruePort.



Tunneling

Serial Tunneling between two Serial Devices

Serial Tunneling enables you to establish a link across Ethernet to a serial port on another IOLAN. Both IOLAN serial ports must be configured for Serial Tunneling (typically one serial port is configured as a Tunnel Server and the other serial port as a Tunnel Client).



Virtual Modem

Virtual Modem

Enables the serial-Ethernet adapter to simulate a modem connection. When connected to the IOLAN and initiates a modem connection, the IOLAN starts up a TCP connection to another IOLAN serial-Ethernet adapter configured with a Virtual Modem serial port or to a host running a TCP application.

