

# IOLAN STS Rack

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 [perle.com/products/iolan-sts-terminal-server.shtml](http://perle.com/products/iolan-sts-terminal-server.shtml)

## Serial to Ethernet Terminal Server

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- 4, 8, 16 or 24 serial RS232 on RJ45 Ports
- 10/100/1000 Ethernet
- AC power or 48v DC power models
- Advanced security feature set



Engineers and Project Managers that require a cost effective **serial RS232-to-Ethernet** 1U rack solution that maintains serial device protocol integrity across Ethernet must consider the IOLAN STS Rack. Having the highest performance processor available along with Perle's unique TrueSerial™ technology, the IOLAN STS Rack will provide the most authentic serial connections across Ethernet.

## IOLAN STS Terminal Servers are ideal for

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- Engineers and Project Managers requiring a high performance serial to Ethernet interface for 4 to 24 serial RS232 based devices. Connect to serial based applications over Ethernet
- IT Professionals requiring a cost-effective **terminal server** or serial **console server** for out of band management of IT equipment located in smaller data centers or remote sites

## Why IOLAN STS Terminal Servers are the preferred choice:

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- High performance 400 MHz, 750 MIPS, 32 bit processor with integrated hardware encryption processor for the best throughput
- Next Generation IP support (IPv6) for investment protection and network compatibility
- TrueSerial™ packet technology – the most authentic serial connections across Ethernet ensures serial protocol integrity
- Primary/Backup host functionality enables automatic connections to alternate hosts should the primary TCP connection go down
- EasyPort Web – Access equipment serial console ports by using your java-enabled Internet browser
- TruePort – Perle's com/tty redirector for serial based applications operates on Windows, Vista, Linux, Solaris, SCO and Unix
- Clustering – Provides a single view of all out of band console ports. Ideal for large data centers
- FIPS 140-2 – Cryptographic modules meet US Government NIST compliancy
- Dynamic DNS – Easy console management access from anywhere on the Internet 4, 8, 16 or 24 serial RS232 on RJ45 Ports
- Intelligent Power cycling of equipment with Perle Remote Power Switches
- 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
- Lifetime warranty – best investment protection available

## Software Features - IOLAN STS Terminal Servers

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### Serial Port Access

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Connect directly using Telnet / SSH by port and IP address

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Connect with EasyPort menu by Telnet / SSH

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Use an internet browser to access with HTTP or secure HTTPS via EasyPort Web menu

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

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Ports can be assigned a specific IP address (. aliasing.)

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Multisession capability enables multiple users to access ports simultaneously

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Multihost access enables multiple hosts/servers to share serial ports

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### Accessibility

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

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Dynamic DNS enables users to find a console server from anywhere on the Internet

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Domain name control through DHCP option 81

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IPV6 and IPV4 addressing support

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### Availability

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

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### Security

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SSH v1 and v2

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PCI DSS Compliance: TLS v1.2, TLS v1.1, TLS v1.0, SSL v3.0, SSL v2.0

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SSL Server and SSL client mode capability

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SSL Peer authentication

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IPSec VPN : NAT Traversal, ESP authentication protocol

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SSH ciphers: AES-CTR, AES-GCM and ChaCha20-poly1305

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SSL encryption: AES-GCM, key exchange ECDH-ECDSA, HMAC  
SHA256, SHA384

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

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

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

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X.509 Certificate verification: RSA, DSA

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Certificate authority (CA) list

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Local database

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RADIUS Authentication, Authorization and Accounting

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TACACS+ Authentication, Authorization and Accounting

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LDAP, NIS, Kerberos Authentication

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RSA SecureID-agent or via RADIUS Authentication

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SNMP v3 Authentication and Encryption support

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IP Address filtering

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Disable unused daemons

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Active Directory via LDAP

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## **Terminal Server**

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Telnet

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SSH v1 and v2

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Rlogin

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Auto session login

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LPD, RCP printer

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MOTD - Message of the day

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## **Serial machine to Ethernet**

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Tunnel raw serial data across Ethernet - clear or encrypted

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Raw serial data over TCP/IP

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Raw serial data over UDP

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Serial data control of packetized data

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Share serial ports with multiple hosts/servers

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

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

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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](#)

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TrueSerial packet technology provides the most authentic serial connections across Ethernet ensuring serial protocol integrity

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

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Customizable or fixed serial baud rates

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Plug-ins allow customer or Perle provided plug-ins for special applications

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Software Development Kit ( SDK ) available

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Serial encapsulation of industrial protocols such as ModBus, DNP3 and IEC-870-5-101

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ModBus TCP gateway enables serial Modbus ASCII/RTU device connection to ModBus TCP

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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

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## **Console Management**

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Sun / Oracle Solaris Break Safe

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Local port buffer viewing - 256K bytes per port

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External port buffering via NFS, encrypted NFS and Syslog

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Event notification

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Manage AC power of external equipment using Perle RPS power management products

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Clustering - central console server enables access ports across multiple console servers

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Windows Server 2003/2008 EMS - SAC support GUI access to text-based Special Administrative Console

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

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### **Remote Access**

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Dial, direct serial      PPP, PAP/CHAP, SLIP

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HTTP tunneling enables firewall-safe access to remote serial devices across the internet

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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

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

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Microsoft IPSEC VPN Client ( native to Windows Vista )

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Cisco routers with IPSEC VPN feature set

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Perle IOLAN SDS/STS and SCS models

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### **OA&M ( Operations, Administration and Management )**

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SNMP V3 - read and write, Perle MIB

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Syslog

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Perle Device Manager - Windows based utility for large scale deployments

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Configurable default configuration

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Installation Wizard

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Set a Personalized Factory Default for your IOLANs

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### **Protocols**

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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, SNMP, Telnet, raw, reverse Telnet, LPD, RCP, DNS, Dynamic DNS, WINS, HTTP, HTTPS, SMTP, SNMPV3, PPP, PAP/CHAP, SLIP, CSLIP, RFC2217, MSCHAP

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## **Hardware Specifications - IOLAN STS Serial Terminal Server**

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	<b>IOLAN STS4</b>	<b>IOLAN STS8</b>	<b>IOLAN STS16</b>	<b>IOLAN STS24</b>
<b>Processor</b>	<b>MPC8349E, 400 Mhz, 750 MIPS</b>			
<b>Memory</b>				
<b>RAM MB</b>	32	64	64	128
<b>Flash MB</b>	16	16	16	16
<b>Interface Ports</b>				
<b>Number of Serial Ports</b>	4	8	16	24
<b>Serial Port Interfase</b>	<b>RS232 DTE on RJ45</b>			
<b>Sun / Solaris</b>	<b>Sun / Oracle 'Solaris' Safe - no "break signal" sent during power cycle causing costly server re-boots or downtime</b>			
<b>Serial Port Speeds</b>	<b>50bps to 230Kbps with customizable baud rate support</b>			
<b>Data Bits</b>	<b>Configurable for 5,6,7 or 8-bit protocol support Use TruePort to transparently pass 9-bit serial data</b>			
<b>Parity</b>	<b>Odd, Even, Mark, Space, None</b>			
<b>Flow Control</b>	<b>Hardware, Software, Both, None</b>			
<b>Serial Port Protection</b>	<b>15Kv Electrostatic Discharge Protection (ESD)</b>			
<b>Local Console Port</b>	<b>RS232 on RJ45 with DB9 adapter (provided )</b>			
	<b>10/100/1000-base TX Ethernet RJ45</b>			
	<b>Software selectable Ethernet speed 10/100/1000, Auto</b>			
<b>Network</b>	<b>Software selectable Half/Full/Auto duplex</b>			
<b>Ethernet Isolation</b>	<b>1.5Kv Magnetic Isolation</b>			
<b>Power</b>				

<b>Power Supply</b>	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		
<b>Nominal Input Voltage</b>	<b>110/230v AC</b>			
<b>Input Voltage Range</b>	<b>100-240v AC</b>			
<b>AC Input Frequency</b>	<b>47-63Hz</b>			
<b>Current Consumption @ 100v (Amps)</b>	0.11	0.11	0.12	0.12
<b>Current Consumption @ 240v (Amps)</b>	0.05	0.05	0.06	0.06
<b>Typical Power Consumption (Watts)</b>	11	11	12	12
<b>Power Line Protection</b>	<b>Fast transients: 1 KV (EN61000-4-4 Criteria B)</b>			
	<b>Surge: 2KV (EN61000-4-5 common mode), 1KV (EN61000-4-5 differential and common modes)</b>			
<b>Indicators</b>				
<b>LEDs</b>	<b>Power</b>			
	<b>System Ready</b>			
	<b>Network Link activity</b>			
	<b>Serial: Transmit and Receive data per port</b>			
<b>Environmental Specifications</b>				
<b>Heat Output (BTU/HR)</b>	38	38	42	42
<b>MTBF (Hours)</b>	179425	174418	160992	130470

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

<b>Operating Temperature</b>	<b>0C to 55C, 32F to 131F</b>
<b>Storage Temperature</b>	<b>-40C to 85C, -40F to 185F</b>
<b>Humidity</b>	<b>5 to 95% (non condensing) for both storage and operation.</b>
<b>Ingress Protection Rating</b>	<b>IP30</b>
<b>Mounting</b>	<b>1U - 19" rack, front and rear mounting hardware included</b>

#### **Product Weight and Dimensions**

<b>Weight</b>	<b>2.8 kg</b>	<b>3 kg</b>	<b>3.1 kg</b>	<b>3.1 kg</b>
<b>Dimensions</b>	<b>1U Rack form factor - 26.4 x 43.4 x 4.4 (cm), 10.38 x 17.1 x 1.75 (in)</b>			

#### **Packaging**

<b>Shipping Dimensions</b>	<b>59 x 36 x 9cm</b>			
<b>Shipping weight</b>	<b>3.96 kg</b>	<b>3.98 kg</b>	<b>4.0 kg</b>	<b>4.2 kg</b>

#### **Regulatory Approvals**

**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)**

**EN55011 (CISPR11)**

**EN61000-3-2 : 2010, Limits for Harmonic Current Emissions**

**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**

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**EN61000-4-4: Fast Transients**

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**EN61000-4-5: Surge**

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**EN61000-4-6: RF Continuous Conducted**

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**EN61000-4-8: Power-Frequency Magnetic Field**

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**EN61000-4-11: Voltage Dips and Voltage Interruptions**

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**UL/EN/IEC 62368-1  
CAN/CSA C22.2 No. 62368-1**

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**IEC 60950-1(ed 2); am1, am2 and  
EN 60950-  
1:2006+A11:2009+A1:2010+A12:2011+A2:2013**

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**CAN/CSA-C22.2 No. 60950-1-03 and ANSI/UL 60950-  
1,  
First Edition April 1st 2003 (Recognized  
Component)**

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**Safety**

**Reach, RoHS and WEEE Compliant**

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**CCATS - G168387**

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**ECCN - 5A992**

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**HTSUS Number: 8517.62.0020**

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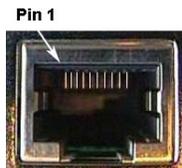
**Other**

**Perle Limited Lifetime Warranty**

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### **IOLAN RJ45 Serial Connector Pinout**

**RJ45 Socket**



<b>Pinout</b>	<b>Direction</b>	<b>EIA-232</b>
1	in	DCD
2	out	RTS
3	in	DSR
4	out	TxD
5	in	RxD
6		GND

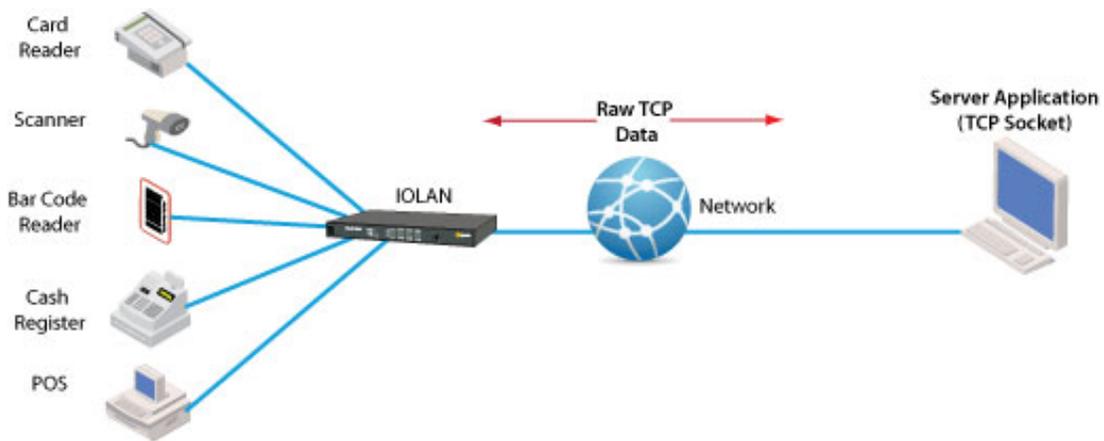
7	in	CTS
8	out	DTR

**Optional Perle adapters for use with straight thru CAT5 cabling**

**TCP**

**Using RAW TCP Sockets**

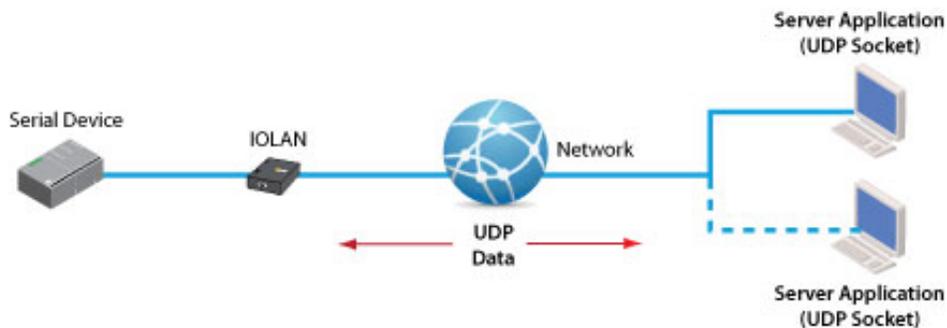
A raw TCP socket connection which can be initiated from the serial-Ethernet device or from the remote host/server. This can either be on a point to point or shared basis where a serial device can be shared amongst multiple devices. TCP sessions can be initiated either from the TCP server application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



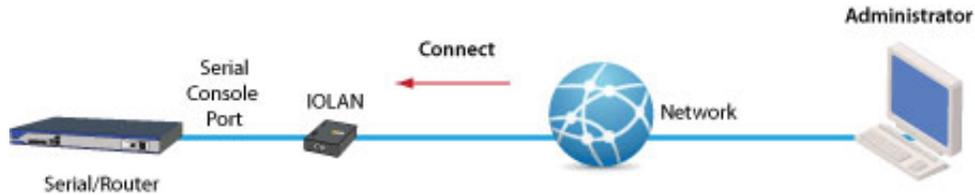
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## Console Server

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### 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.



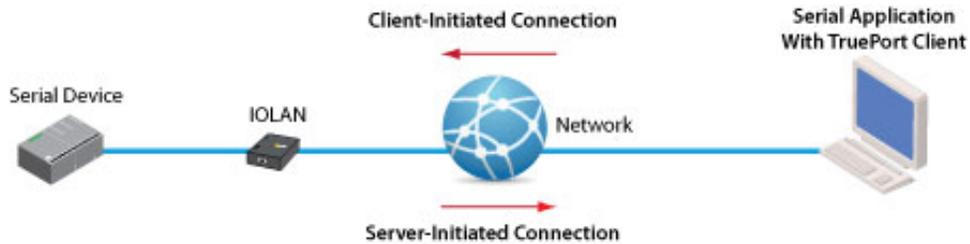
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## COM/TTY

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### 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.



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## Tunneling

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### 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).



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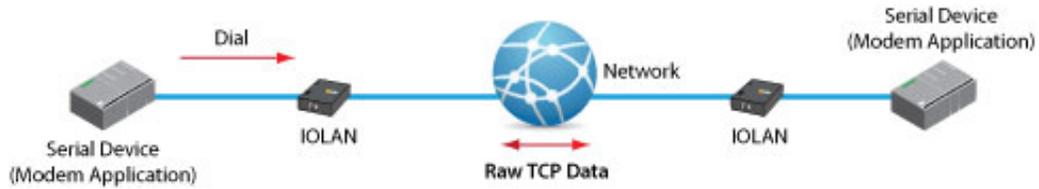
## Virtual Modem

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## 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.



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