

# IOLAN SCG Secure Console Server

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 [perle.com/products/iolan-scg-console-server.shtml](http://perle.com/products/iolan-scg-console-server.shtml)

## In-Band and Out-of-Band IT Infrastructure Management

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- 16, 32 or 48 RS232 RJ45 Console Management Ports
- 10/100/1000Base-T Copper Network Connection
- Advanced AAA security and SSH/SSL encryption to meet all data center compliance policies



The **Perle IOLAN SCG Console Servers** provide data center managers with secure remote console management of any device with an **RS232 RJ45 console port**. 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 SCG Console Server first. Having the highest performance processor available along with Perle's unique TrueSerial™ technology, the IOLAN SCG will provide the most authentic serial connections across Ethernet. And, with the advanced security features, your IT professionals and network operations center (NOC) personnel have everything they needed to easily perform secure remote data center management and out-of-band management of IT assets from anywhere in the world.

### Console Management for IT assets

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The **IOLAN SCG Console Server** supports **RS232 RJ45 connectivity to console ports** on equipment such as **Cisco routers, switches, firewalls, servers** (Solaris, Windows, Unix and Linux) **PBXs, network storage equipment** and **security appliances** through an IP network. The RS232 RJ45 ports are software configurable to use straight thru or rolled cables to connect your Cisco equipment. In addition, a DCD pin can be configured for 3rd party devices that need this extra signal. This means the **Perle IOLAN SCG supports more serial devices than any other Console Server on the market**. This makes it an ideal out of band management solution for IT equipment located in data centers or remote sites.

### Advanced Network Security Features, Authentication and Data Encryption

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IT administrators are required to ensure network data transmissions, and all access to remote console admin ports on IT equipment, is secure. When using IOLAN SCG Console Servers, data management information is protected through standard encryption tools such as Secure Shell (SSH) and Secure Sockets Layer (SSL). Support for authentication schemes such as RADIUS, TACACS+, LDAP, Kerberos, NIS and RSA Security's SecurID tokens ensures access to equipment and data is limited to authorized users.

By using encryption technologies, an IOLAN SCG Console Server protects sensitive and confidential data before being sent across a corporate Intranet or public Internet. For compatibility with peer encryption devices, all 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.

## Investment protection

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The auto-negotiating 10/100/1000Base-T Copper Port will meet any changing network access requirements. If you upgrade your Ethernet speed, you won't need to upgrade your IOLAN SCG.

Protection against electrostatic discharges and power surges is provided with robust 15Kv ESD protection circuitry on each console port.

## Easy Set-up and Configuration

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The IOLAN SCG is incredibly easy to get up and running on the network. The unit can then be configured over the network using a variety of configurator options including, Perle [Easy Config Wizard](#), Perle Device Manager, WebManager, CLI, etc.

For large scale roll-outs, the Micro SD Card slot can be used to back-up and restore configuration files as well as load new firmware. Perle is committed to eliminating configuration hassles for all IOLAN's on your IP network.

## Flexible and Reliable Serial to Ethernet Connections

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An IOLAN SCG Console Server is ideal for connecting serial-based COM port, UDP or TCP socket-based applications to remote devices. Perle's [TruePort re-director](#) provides fixed TTY or COM ports to serial-based applications enabling communication with remote devices connected to Perle IOLAN's either in encrypted or clear text modes.

[TrueSerial® packet technology](#) delivers the most authentic serial connections across Ethernet for serial protocol integrity.

You can also tunnel serial data between devices across an IP network.

By choosing a Perle IOLAN SCG Console 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. In the unlikely event that the Perle IOLAN Device Server does not enable this out of the box, Perle will make it work with customer installable [Device Plug-ins](#)".

## Advanced IP Technology

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With support for IPv6 the IOLAN SCG 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.

## More reasons that make the IOLAN SCSG Console Servers the preferred choice:

- [FIPS 140-2](#)– Cryptographic modules meet US Government NIST compliancy
- [Clustering](#)– Provides a single view of all out of band console ports. Ideal for large data centers
- 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
- Java-free browser access to remote serial console ports via Telnet and SSH
- [Dynamic DNS](#) – Easy console management access from anywhere on the Internet
- Intelligent Power cycling of equipment with [Perle Remote Power Switches](#)
- [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

All Perle IOLAN SCG models 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. With the Perle IOLAN SCG deploying and upgrading new services and equipment, while minimizing capital expenditures, is easy.

### 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](#)

### Accessibility

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In-band and out-of-band Ethernet via RJ45 copper (10/100/1000 Base-T)

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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. Perle supports the most comprehensive driver set in the industry. 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, SDG, STS, STG, SCS and SCG 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, SNTP, Telnet, raw, reverse Telnet, LPD, RCP, DNS, Dynamic DNS, WINS, HTTP, HTTPS, SMTP, SNMPV3, PPP, PAP/CHAP, SLIP, CSLIP, RFC2217, MSCHAP

Processor 1750 MIPS, 500 MHz core 32 bit ARM processor, with integrated hardware encryption processor

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### Memory

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RAM MB 1000

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Flash MB 4000

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### Interface Ports

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Integrated Device Management Ports IOLAN SCG16: 16 x RS232 RJ45  
IOLAN SCG32: 32 x RS232 RJ45  
IOLAN SCG48: 48 x RS232 RJ45

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Sun / Solaris Sun / Oracle 'Solaris' Safe - no "break signal" sent during power cycle causing costly server re-boots or downtime

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Serial Port Speeds 50bps to 230Kbps with customizable baud rate support

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Data Bits 5,6,7,8, 9-bit protocol support

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Parity Odd, Even, Mark, Space, None

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Flow Control Hardware, Software, Both, None

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Serial Port Protection 15Kv Electrostatic Discharge Protection ( ESD )

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Local Console Ports 1 x RS232 RJ45  
1 x Micro USB with DB9 adapter

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Network 1 x 10/100/1000Base-T RJ45 Copper  
Software selectable Ethernet speed 10/100/1000, Auto  
Software selectable Half/Full/Auto duplex

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Ethernet Isolation 1.5Kv Magnetic Isolation

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### Power

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Power Supply AC 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

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Nominal Input Voltage	110/230v AC
Input Voltage Range	100-240v AC
AC Input Frequency	47-63Hz
Current Consumption @ 100v ( Amps )	IOLAN SCG16: 0.14 IOLAN SCG32: 0.21 IOLAN SCG48: 0.28
Current Consumption @ 240v ( Amps )	IOLAN SCG16: 0.06 IOLAN SCG32: 0.08 IOLAN SCG48: 0.11
Typical Power Consumption (Watts)	14 Watts
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)

#### LED Indicators

System Ready  
Network Link Activity

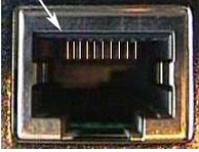
#### Environmental Specifications

Heat Output (BTU/HR)	IOLAN SCG16: 47.77 IOLAN SCG32: 69.27 IOLAN SCG48: 91.45
MTBF ( Hours )	94,455 Calculation model based on MIL-HDBK-217-FN2 @ 30 °C
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

Product Weight	IOLAN SCG16: 3.06 kg / 6.75 lbs IOLAN SCG32: 3.23 kg / 7.12 lbs IOLAN SCG48: 3.39 kg / 7.47 lbs
Dimensions	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	59 x 36 x 9cm
Shipping Weight	IOLAN SCG16: 4.00 kg / 8.82 lbs IOLAN SCG32: 4.17 kg / 9.20 lbs IOLAN SCG48: 4.33 kg / 955 lbs
<b>Regulatory Approvals</b>	
Emissions	FCC 47 Part 15 Subpart B Class A ICES-003 (Canada) EN55032 (CISPR32) EN61000-3-2 Limits for Harmonic Current Emissions EN61000-3-3 Limits of Voltage Fluctuations and Flicker
Immunity	EN55024 EN 61000-4-2 (ESD): Contact: EN 61000-4-3 (RS): EN 61000-4-4 (EFT): EN 61000-4-5 (Surge): EN 61000-4-6 (CS): EN 61000-4-8 (PFMF) EN 61000-4-11
Safety	UL/ULC/EN 62368-1 ( previously 60950-1 ) CAN/CSA C22.2 No. 62368-1-15
Other	<u>Reach, RoHS and WEEE Compliant</u> 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

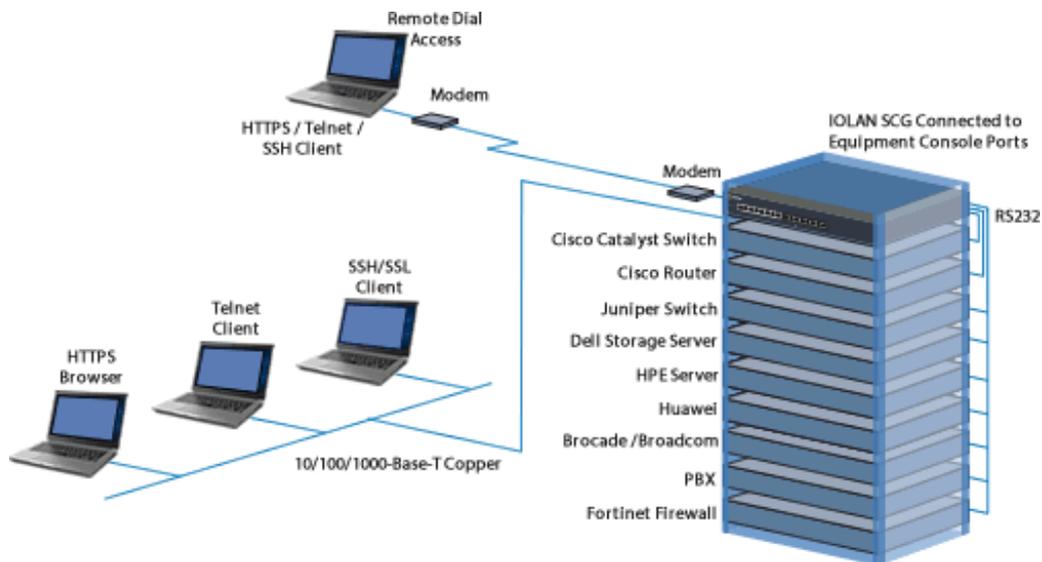
## IOLAN DTE

Pin 1	IOLAN RJ45 Socket	Function	Direction
	1	RTS	→
	2	DTR	→
RJ45 Socket	3	TXD	→
	4	GND	—
	5	DCD	←
	6	RXD	←
	7	DSR	←
	8	CTS	←

( A rolled RJ45 cable will automatically perform DTE to DCE crossover )

Optional Perle adapters for use with straight thru CAT5 cabling

## Data Center Console Management

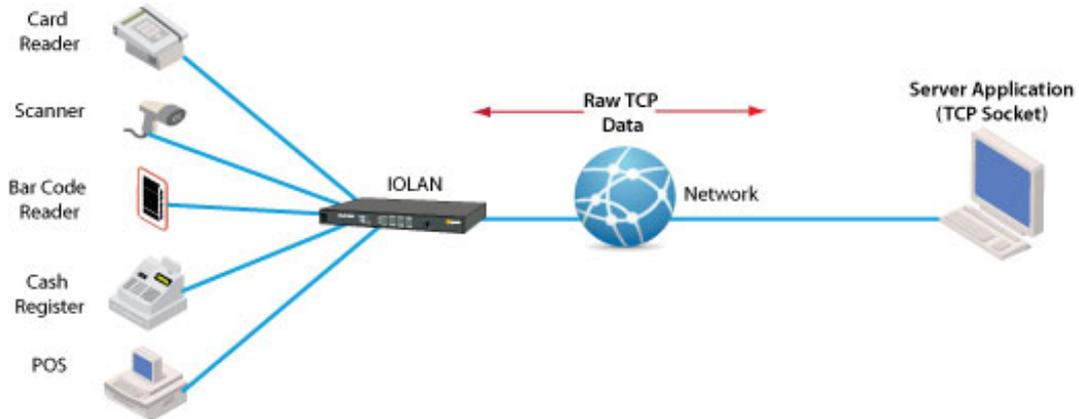


TCP

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## 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.



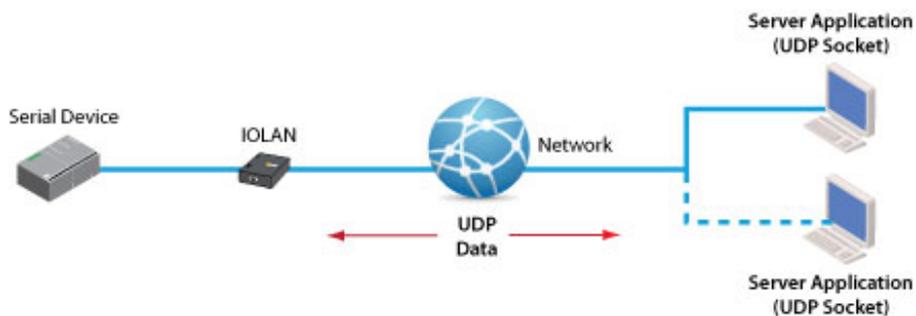
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## UDP

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### 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.



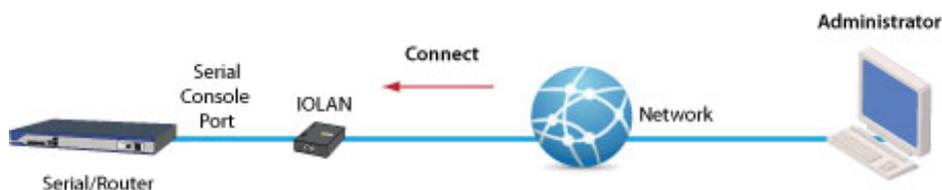
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## Console Server

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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.



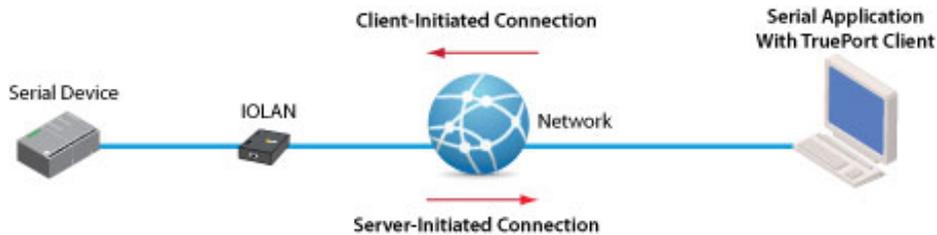
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## COM/TTY

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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.

