

# IOLAN SCR1618 Secure Console Server

 [perle.com/products/iolan-scr1618-console-server.shtml](http://perle.com/products/iolan-scr1618-console-server.shtml)

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

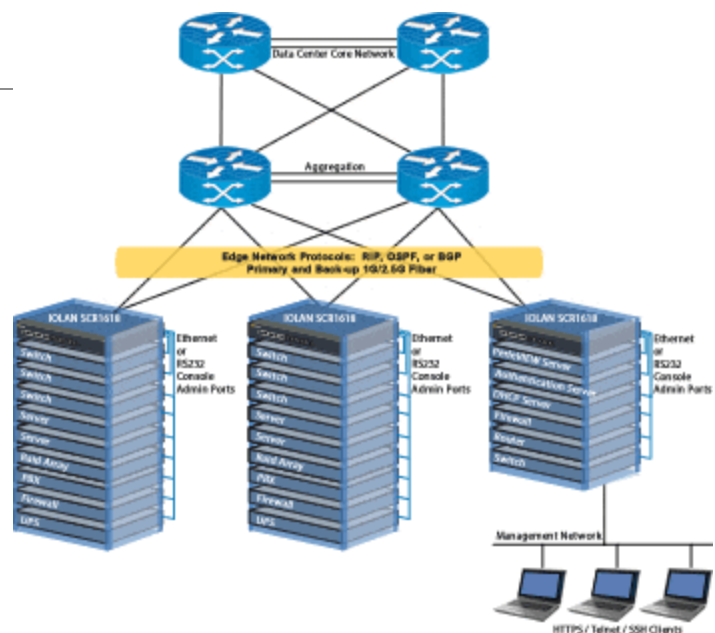
- 16 x RS232 RJ45 Console Management Ports
- 16 x Ethernet RJ45 Console Management Ports
- 2 x SFP Slots supporting 1G/2.5G Fiber or 10/100/1000Base-T
- PerleVIEW Central Management Software simplifies configuration, administration, monitoring, and troubleshooting.
- Cloud Hosting -- Deploy and manage your network from the cloud
- Advanced routing engine with AAA security and SSH/SSL encryption to meet all data center compliance policies



The **IOLAN SCR1618 Console Server** provides data center managers with secure remote console management of any device with an **RS232 or Ethernet RJ45 console port**. This cost-effective 1U rack solution maintains protocol integrity across Ethernet and adds full IPv4/IPv6 routing capabilities with support for RIP, OSPF, and BGP protocols. An **integrated firewall** and **two-factor authentication** enhance security while the powerful multi-core CPU ensures lightning-fast routing and switching. With **advanced failover** to multiple networks and **Zero Touch Provisioning (ZTP)**, the IOLAN SCR is ideal for data center management and out-of-band management of IT assets from anywhere in the world.

## Console Management for IT assets

The **IOLAN SCR1618 Console Server** supports **Ethernet and RS232 RJ45 connectivity to console ports** on equipment such as **Cisco, Juniper, HP, routers, switches, firewalls, servers, 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 SCR 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, Authentication, and Data Encryption

**2 Factor Authentication (2FA)** ensures access to equipment and data is limited to authorized users, while remote authentication (RADIUS, TACACS+, & LDAP) management, enables integration with enterprise-grade systems to control access to devices in the field.

The **built-in firewall** offers intuitive policies to protect inside networks from unauthorized access. The firewall also allows inside networks to be separated from each other. If there are network resources that need to be available to an outside user, such as a web or FTP server, these resources can be placed on a separate network behind the firewall in a demilitarized zone (DMZ).

Network data transmissions and access to remote console admin ports on IT equipment are protected through standard **encryption tools** such as Secure Shell (SSH) and Secure Sockets Layer (TLS/SSL). By using encryption technologies, an IOLAN SCR 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.

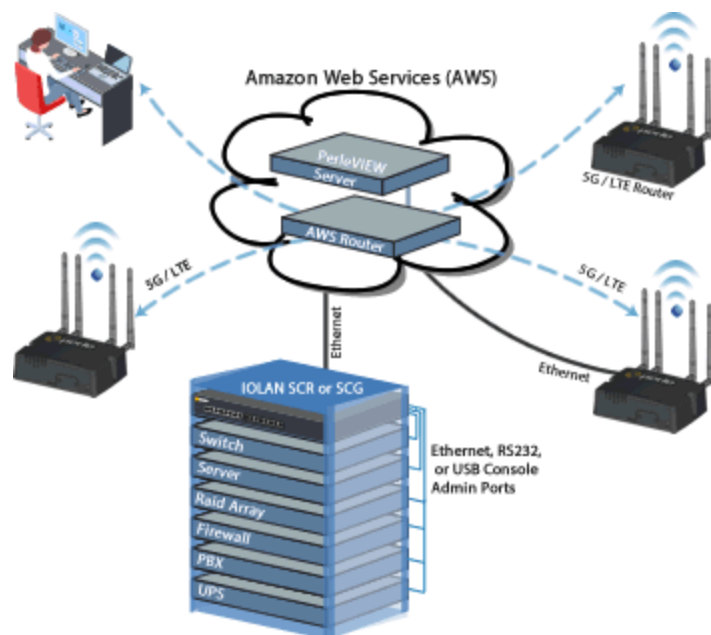
With multiple concurrent VPN sessions, OpenVPN, and IPSec VPN, robust authentication and encryption of IP packets is provided at the network layer of the OSI model. This is ideal for multi-vendor interoperability within a network, providing flexibility and the ability to match the right solution for a particular application.

## High Availability Access

To simplify management and respond swiftly to issues, network administrators require access to all console ports via a single portal view. Perle's cloud-based centralized management solution puts all your network and IT infrastructure into a single application and provides secure reliable access and visibility during normal operations and critical network failures. Scalable to suit any business requirement, Cloud Centralized Management reduces human error and guarantees repeatability.

The IOLAN SCR has built-in fault-tolerant capabilities to ensure secure and reliable access for managing important mission-critical equipment. With 18 x Routing / Switching Ethernet interfaces, the IOLAN SCR provides multiple redundant network paths to ensure that console management access is available even if part of the network is down. The dual AC power supply ensures that console management is available even if the primary AC power source fails.

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



## Lifetime Warranty

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All Perle IOLAN SCR 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 SCR deploying and upgrading new services and equipment while minimizing capital expenditures, is easy.

## Software Features - IOLAN SCR Secure Console Server

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### Management & Configuration

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Zero Touch Provisioning (ZTP): automates the provisioning of both the configuration and firmware files through DHCP/Bootp Options

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PerleView Central Management: a web-based server configuration tool that simplifies setup and deployment and gives network managers visibility and control over network configurations at remote sites.

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Management & Monitoring: HTTP/HTTPS, CLI/Piping, Telnet, SNMPv1/v2/v3, RESTful API, TACACS+

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Multiple firmware versions can be saved on the unit. This allows the customer to change between older and newer firmware versions without the need to download.

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Multiple configuration files can be stored on the unit., This allows the customer to easily switch between older and newer configurations during testing or production deployments.

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Automatic check for software updates available over FTP, HTTP, HTTPS, SCP, SFTP, and TFTP

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LLDP-Link Layer Discovery Protocol, as per IEEE 802.1AB, is a neighbor discovery protocol that is used for network devices to advertise information about themselves to other devices on the network. This protocol runs over the data-link layer, which allows two systems running different network layer protocols to learn about each other via TLVs (Type-Length-Value).

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RESTful API uses HTTP requests to access and use IOLAN statistics and configuration data. Any of the CLI commands can be executed through a RESTful API script that can be controlled externally from a server.

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Connectivity Watchdog can instruct the IOLAN to take different actions (i.e. reboot) if the network connectivity to a pre-define IP address is lost. This is helpful for situations when the IOLAN is deployed on remote locations hard to service if the network connectivity is lost.

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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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Dynamic DNS with DYNDNS.org

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## Installation Wizard

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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.

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IPSEC VPN client/servers: Microsoft IPSEC VPN Client, Cisco routers with IPSEC VPN feature set, Perle IOLAN SDS, SDG, STS, STG, SCS, SCG, and SCR models

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OpenVPN: Clients & Servers

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### **Logging, Reporting & Alerts**

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Email alert notification

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Syslog, Event Type, Report Type, Alerts & Monitoring, Triggers Status Screen Report, Data Usage, Diagnostic, Login Banner

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### **Accessing Console Management Ports (Serial & Ethernet)**

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Serial Protocols: PPP, PAP/CHAP, SLIP

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Connect directly using Telnet / SSH by port and IP address

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Use an internet browser to access with HTTP or secure HTTPS

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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

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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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### **Console Management Functions**

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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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Windows Server / Azure - SAC support GUI access to text-based Special Administrative Console

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## Terminal Server Functions

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Telnet

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SSH v1 and v2

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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 to Ethernet functions

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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 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.

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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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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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## Redundancy

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Load Balancing

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VPN Failover

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Virtual Router Redundancy Protocol (VRRPv3) enables a group of devices to form a single virtual device to provide network redundancy

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Primary/Backup host functionality enables automatic connections to alternate hosts

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## **Routing / Switching Protocols**

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The IOLAN can be configured for any of the major routing protocols for an easy integration within the data center Ethernet backbone: RIP/RIPNg, OSPFv3, BGP-4, NAT, IPv4/IPv6, Static Routing, IPv6 Encapsulations (GRE, 6in4), Port Routing, STP, MSTP

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IPv6 to IPv4 translation is fully supported for environments where the Ethernet data backbone is run on IPv6 and the port management is run on IPv4

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Using NAT for enhanced security, the IOLAN can map a single IP address, across all or several of its Ethernet ports.

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## **IP Applications**

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DDNS, DNS Proxy / Spoofing, relay, client, Opt. 82,

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NTP & SNTP (versions 1, 2, 3, 4)

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DHCP / DHCPv6 server / DHCP Snooping & BOOTP

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## **VLAN & VPN**

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VLAN, OpenVPN, VPN Failover (16 concurrent VPN tunnels)

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IPSec VPN: NAT Traversal, ESP authentication protocol

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## **Firewall Features**

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Ability to set up firewalls to restrict incoming and outgoing packets

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Built in Zone-Based Policy Firewall for local security and traffic filtering.

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Access Control Lists (list & ranges & time)

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Filter based on MAC Address, IP, Port, Protocol, User

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IEEE 802.1x Authentication and Port Security can be enabled for any Ethernet port for increased security port access.

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Layer 2 MAC address filtering

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Port Forwarding

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BGP Communities

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## **Security Features**

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AAA Security via remote authentication (Radius, TACACS+, & LDAP)

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Trusted host filtering (IP filtering), allowing only those hosts that have been configured in the host table access to the router.

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Ability to disable services (for example, Telnet, TruePort, Syslog, SNMP, Modbus, HTTP) for additional security

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Ability to disable Ping responses

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SSH client/server connections (SSH 1 and SSH 2). Supported ciphers are Blowfish, 3DES, AES-CBC, AES-CTR, AES-GCM, CAST, Arcfour and ChaCha20-Poly1305. Ability to individually disable network services that won't be used by the SSH client/server connections.

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SSL/TLS client/server data encryption (TLS v1.2)

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SSL Peer authentication

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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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VPN: OpenVPN & IPSec VPN (NAT Traversal, ESP authentication protocol)

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Certificate Support (X.509)

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Certificate authority (CA) list

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Local database

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RIP authentication (via password or MD5)

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2 Factor (2F) Authentication over e-mail enhances administration access security

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Management Access Control

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Demilitarized Zone (DMZ)

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Secure HTTP/HTTPS/FTP/Telnet Authentication Proxy

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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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## Protocols

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IPv6, IPv4, TCP/IP, Reverse SSH, SSH, SSL, IPSec/IPv4, IPSec/IPv6, IPSec, 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

## Hardware Specifications - IOLAN SCR Secure Console Server

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### Interface Ports

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#### Back of Product



<b>Integrated Device Management Ports (Serial)</b>	16 x RS232 RJ45 Data Bits: Configurable for 5,6,7 or 8-bit protocol support Parity: Odd, Even, Mark, Space, None Flow Control: Hardware, Software, Both, None Serial Protection: 15Kv Electrostatic Discharge Protection (ESD)
<b>Integrated Device Management Ports (Ethernet)</b>	16 x 10/100/1000 Base-T Copper Software selectable 10/100/1000 Ethernet, Auto Software selectable Half/Full/Auto duplex Ethernet isolation 1.5KV magnetic Up to 100m / 328ft
<b>Network</b>	2 x SFP Slots supporting 1G/2.5G Fiber or 10/100/1000Base-T IEEE 802.3 for 10Base-TX IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3ab for 1000Base-T IEEE 802.3x for Flow Control
<b>Local Console Port</b>	1 x RS232 RJ45
<b>LEDs</b>	Power 1 & 2, System, WAN / IP Health, Ethernet Port Activity & Speed
<b>Reset</b>	Reset Button used for restart, factory default and safe mode
<b>Power</b>	
<b>Power Input</b>	Dual AC power supplies

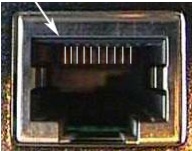
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<b>Nominal Input Voltage</b>	110/230v AC
<b>Input Voltage Range</b>	100-240v AC
<b>AC Input Frequency</b>	47-63Hz
<b>Current Consumption @ 100v (Amps)</b>	.2A
<b>Current Consumption @ 240v (Amps)</b>	.15A
<b>Typical Power Consumption (Watts)</b>	16.8 Watts
<b>Power Line Protection</b>	Fast transients: 1 KV (EN61000-4-4 Criteria B) Surge: 2KV (EN61000-4-5 common mode), 1KV (EN61000-4-5 differential and common modes)
<b>Environmental Specifications</b>	
<b>Operating Temperature</b>	0°C to 55°C, 32°F to 131°F
<b>Storage Temperature</b>	-40°C to 85°C, -40°F to 185°F
<b>Humidity</b>	5 to 95% (non condensing) for both storage and operation.
<b>Operating Altitude</b>	Up to 3,048 meters (10,000 ft)
<b>Ingress Protection Rating</b>	IP30
<b>Heat Output (BTU/HR)</b>	122
<b>MTBF (Hours)</b>	190,295 Calculation model based on MIL-HDBK-217-FN2 @ 30 °C
<b>Case</b>	SECC Zinc plated sheet metal (1 mm)
<b>Mounting</b>	1U - 19" rack, front and rear mounting hardware included
<b>Product Weight and Dimensions</b>	
<b>Product Weight</b>	3.54 kg / 7.08 lbs
<b>Dimensions</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>	

<b>Shipping Dimensions</b>	59 x 36 x 9 (cm) / 23.23 x 14.17 x 3.54 (in)
<b>Shipping Weight</b>	4.26 kg / 9.40 lbs
<b>Regulatory Approvals</b>	
<b>Emissions</b>	FCC 47 Part 15 Subpart B Class A ICES-003 (Canada) EN55011 (CISPR11) EN55032 (CISPR32) EN61000-3-2 Limits for Harmonic Current Emissions EN61000-3-3 Limits of Voltage Fluctuations and Flicker
<b>Immunity</b>	EN55024 EN61000-4-2 (ESD): Contact EN 61000-4-3 (RS): EN 61000-4-4 (EFT) EN61000-4-5 (Surge) EN 61000-4-6 (CS) EN 61000-4-8 (PFMF) EN 61000-4-11
<b>Safety</b>	UL/EN/IEC 62368-1 (previously 60950-1) CAN/CSA C22.2 No. 62368-1 CE Mark
<b>Other</b>	<u>Reach, RoHS and WEEE Compliant</u> CCATS - G168387 ECCN - 5A992 HTSUS Number: 8517.62.0020 Perle Limited Lifetime warranty



### IOLAN RJ45 Serial Connector Pinout - Straight-through cable to connect to Cisco Console port

RJ45 Socket		Pinout	Direction	EIA-232
	1		in	CTS
	2		in	DSR
	3		in	RxD
	4			GND
	5			GND
	6		out	TxD
	7		out	DTR

### Optional cable adapters available


Product Image	Description	Power Cord	Product Number
	IOLAN SCR1618 Console Server: 16 x RS232 RJ45 Console Management Ports, 16 x Ethernet Managements Ports, 2 x SFP Slots supporting 1G/2.5G Fiber or 10/100/1000Base-T, IPv4/IPv6 routing (RIP, OSPF, BGP), ZTP, Cloud-hosting, advanced data encryption and user authentication, 15kv ESD, Dual AC Power	USA UK EU SA AUS	04031134 04031131 04031132 04031135 04031136

## Accessories

Accessory Image	Description	Model Number	Accessory Number
	3 meter RJ45 to RJ45 CAT5 Straight-thru cable #1100360-10	3m Cbl-Straighthru	04005120
	C Model Kit Includes: (1) RJ-45 to DB-25 DTE Male adapter, (1) RJ-45 to DB-25 DCE Male adapter, (1) RJ-45 to DB-25 DTE Female adapter, (1) RJ-45 to DB-9Male DTE adapter, (1) RJ-45 to DB-9 Female DTE adapter and (1) RJ45M-RJ45F Sun/Cisco crossover adapter.	IOLAN C Model Wiring Starter Kit	04007070




### Cable Accessories

**Please click here to see what adapters you may need**

	3 meter RJ45 to RJ45 CAT5 Rolled (crossover) cable #1100370-10 for use with IOLAN C models	3m Cbl-Rolled	04005130
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Accessory Image	Description	Model Number	Accessory Number
	DBA0010C - RJ-45F to DB-25F crossover (DTE) adapter #1100270-10 for IOLAN. <a href="#">View Pinout</a>	DBA0010C	04007010
	DBA0011C - RJ-45F to DB-25M crossover (DTE) adapter #1100280-10 for IOLAN. <a href="#">View Pinout</a>	DBA0011C	04007020
	DBA0013C - RJ-45F to DB-25M straight-thru (DCE) adapter #1100290-10 for modems on IOLAN. <a href="#">View Pinout</a>	DBA0013C	04007030
	DBA0020C - RJ-45F to DB-9F crossover (DTE) adapter #1100300-10 for Perle serial console ports with Sun/Cisco pinout. <a href="#">View Pinout</a>	DBA0020C	04007040
	DBA0021C - RJ-45F to DB-9M crossover (DTE) adapter #1100310-10 for IOLAN. <a href="#">View Pinout</a>	DBA0021C	04007050
	DBA0031C - RJ-45m to RJ-45F SUN/Cisco crossover adapter #1100320-10 for IOLAN. <a href="#">View Pinout</a>	DBA0031C	04007060
	DBA0023C - RJ-45F to DB-9M straight-thru (DCE) adapter #1100350-11 for modems on IOLAN with Sun/Cisco pinout. <a href="#">View Pinout</a>	DBA0023C	04007210

Accessory Image	Description	Model Number	Accessory Number
	IOLAN SCG/SCR RJ45F to DB9M adapter with DCD. <a href="#">View Pinout</a>	DBA0040 Adapter	04007220
	IOLAN SCG/SCR RJ45F to DB25M adapter with DCD. <a href="#">View Pinout</a>	DBA0041 Adapter	04007230
	DBA0031C 8pck - 8 pack of #04007060 RJ45M to RJ45F Sun/Cisco crossover adapter for IOLAN. <a href="#">View Pinout</a>	DBA0031C 8pck	04031290
	DBA0010C 8pck - 8 pack of #04007010 RJ45F to DB-25F (DTE) crossover adapter for IOLAN. <a href="#">View Pinout</a>	DBA0010C 8pck	04031300
	DBA0011C 8pck - 8 pack of #04007020 RJ45F to DB25M (DTE) crossover adapter for IOLAN. <a href="#">View Pinout</a>	DBA0011C 8pck	04031310
	DBA0020C 8pck - 8 pack of #04007040 RJ45F to DB9F (DTE) crossover adapter for IOLAN. <a href="#">View Pinout</a>	DBA0020C 8pck	04031320
	DBA0021C 8pck - 8 pack of #04007050 RJ45F to DB9M (DTE) crossover adapter for IOLAN. <a href="#">View Pinout</a>	DBA0021C 8pck	04031330

Accessory Image	Description	Model Number	Accessory Number
	DBA0013C 8pck - 8 pack of #04007030 RJ45F to DB25M Straight-thru adapter for modems on IOLAN. <a href="#">View Pinout</a>	DBA0013C 8pck	04031340
	DBA0040 8pck - 8 pack of #04007220 IOLAN SCG/SCR RJ45F to DB9M adapter with DCD. <a href="#">View Pinout</a>	DBA0040 Adapter 8 Pck	04031360
	DBA0041 8pck - 8 pack of #04007230 IOLAN SCG/SCR RJ45F to DB25M adapter with DCD. <a href="#">View Pinout</a>	DBA0041 Adapter 8 Pck	04031390
<b>Maintenance agreements - Console Server / Device Server / Terminal Server</b> <b><a href="#">Please click here to check for maintenance availability in your region</a></b>			
	32-34 Port Terminal/Device/Console Servers - Express Replacement	NSS-32 portEXPRESSREP	SERNSS32
	32-34 Port Terminal/Device/Console Servers - Express Replacement French	NSS-32 PortXPRESSREPF	SERNSS32F

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