

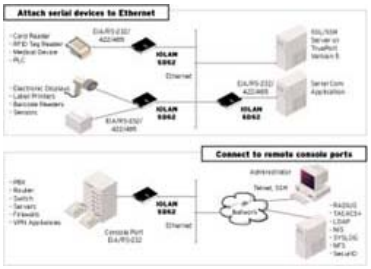
IOLAN SDS Serial to Ethernet Device Servers



- 1, 2 or 4 software selectable RS232/422/485 serial port interfaces
- 10/100 Ethernet
- Advanced security features for data encryption, user authentication and event management

For secure serial to Ethernet connectivity applications, the IOLAN SDS Device Server is the most advanced compact product available on the market today. Delivering high performance in a compact size, an IOLAN SDS offers extensive security, flexibility and next generation IPv6 technology making it ideal for applications that require remote device/console management, data capture or monitoring. IOLAN Serial Device Servers are also available with an integrated V.92 modem, support for Power over Ethernet (PoE), Class 1 Division 2 or Extended Temperature ranges.

Why IOLAN SDS Device Servers are the preferred choice:



- High performanc 66Mhz, 87 MIPS processor for the best performance on the market
- TrueSerial® packet technology delivers the most authentic serial connections across Ethernet for serial protocol integrity
- Indicators for network and serial interfaces for easy troubleshooting
- Plug & Play installation utility eliminates configuration hassles for all IOLAN's on your IP network
- TruePort – Perle's com/tty redirector for serial based applications operates on Windows, Vista, Linux, Solaris, SCO and Unix
- FIPS 140-2 – Cryptographic modules meet US Government NIST compliancy
- Power over serial cable eliminates costs of a separate power installation
- Next Generation IP support (IPv6) for investment protection and network compatibility
- Compact and protective solid steel enclosure for tabletop, wall mount or DIN rail mounting
- 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 can protect 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 interoperation within a network providing flexibility and the ability to match the right solution for a particular application.

IOLAN Plug-ins

By choosig a Perle IOLAN 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. In the unlikely event that the Perle IOLAN 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. Request a free engineering consultation now.

Advanced IP Technology

With support for Next Generation IP (IPv6) the IOLAN Serial to Ethernet Device Server 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 3G 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 mandated that all equipment

purchased from 2005 be IPv6 compatible with full implementation by 2008. 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 to Ethernet Connections

An IOLAN SDS Device 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. You can also tunnel serial data between devices across an IP network.

Perle's Device Management software provides better centralized control of multiple units resulting in maximum uptime for your remote equipment.

All IOLAN SDS models have added protection against electrostatic discharges and power surges with robust 15Kv ESD protection circuitry enabling organizations to utilize this solution in the field with confidence.

Lifetime Warranty

All Perle IOLAN SDS Serial to Ethernet 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.

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, Vista, Linux, Solaris, SCO and HP UX. For 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 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

	IOLAN SDS1	IOLAN SDS2	IOLAN SDS4
Processor	MPC852T, 66 Mhz, 87 MIPS		
Memory			
RAM MB	32	32	32
Flash MB	8	8	8
Interface Ports			
Number of Serial Ports	1	2	4
Serial Port Interface	Software selectable EIA232/422/485 on DB9M, RJ45, DB25M or DB25F	Software selectable EIA-232/422/485 on RJ45	
Sun / Solaris	Sun break safe		
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 Serial Port		
Network	10-base T / 100-base TX Ethernet RJ45		
	Software selectable Ethernet speed 10/100 Auto		
	Software selectable Half/Full/Auto duplex		
Ethernet Isolation	1.5Kv Magnetic Isolation		
Power			
Power Supply	120 V AC (USA), 230V AC (International) Wall Power Adaptor included		
Power Supply Options	Power via External power 9-30v DC, 4.8 Watts uses standard 5.5mm x 9.5mm x 2.1mm barrel socket, Power IN over serial cable		
Nominal Input Voltage	12v DC		
Input Voltage Range	9-30v DC		
Power IOLAN over Serial	9-30v DC		
Power External Device via Serial Port	+5v DC regulated, 1W max		
Typical Power Consumption @ 12v DC (Watts)	1.7 (does not include power for devices connected to serial port)	2.1	2.4
Indicators			
LEDs	Power/Ready		
	Network Link		
	Network Link activity		
	Serial: Transmit and Receive data per port		
Environmental Specifications			
Heat Output (BTU/HR)	5.8	7.2	8.2
MTBF (Hours)	123,192	188,596	150,124
Operating Temperature	0C to 55C, 32F to 131F		
Storage Temperature	-40C to 66C, -40F to 150F		
Humidity	5 to 95% (non condensing) for both storage and operation.		
Case	SECC Zinc plated sheet metal (1 mm)		
Ingress Protection Rating	IP40		
Mounting	Wall or Panel mounting, DIN Rail mounting kit optional		
Product Weight and Dimensions			

Weight	0.23 kg (0.5 lbs)	0.36 kg (0.79 lbs)
Dimensions	91 x 64 x 24 (mm), 3.6 x 2.5 x 0.92 (in) case dimensions not including mounting tabs, 91 x 89 x 24 (mm), 3.6 x 3.5 x 0.92 (in) includes mounting tabs	11.3 x 8.1 x 2.8 (cm), 4.4 x 3.2 x 1.1 (in)
Packaging		
Shipping Dimensions	25.5 x 16.5 x 6.5 (cm), 10 x 6.5 x 2.6 (in)	
Shipping weight	0.75 kg including Power Adaptor	1.1 kg (2.4 lbs)
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)	
	EN55022:1998 + A1:2000 + A2:2003 Class A	
	EN61000-3-2 : 1995, Limits for Harmonic Current Emissions	
	EN61000-3-3 : 1995, Limits of Voltage Fluctuations and Flicker	
Immunity	EN55024:1998 + A1:2001 + A2:2003	
	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 : 2005 (2nd Edition) + A1 : 2009 and EN 60950-1 : 2006 + A11 : 2009	
	CAN/CSA-C22.2 No. 60950-1-03 and ANSI/UL 60950-1, First Edition April 1st 2003 (Recognized Component)	
Other	RoHS - 2002/95/EC Directive	
	WEEE - 2002/96/EC Directive	
	CCATS - G052929	
	ECCN - 5A992A	
	HTSUS Number: 8471.80.1000	
	Perle Lifetime warranty	

Serial Connector Pinout

IOLAN DB9M Socket	Direction	RS232	RS485 Full Duplex	RS485 Half Duplex	RS422
1	←	DCD	-	-	-
2	←	RxD	RxD+	-	RxD+
3	→	TxD	TxD+	DATA+	TxD+
4	→	DTR	-	-	-
5	—	GND	GND	GND	GND
6	←	DSR	RxD-	-	RxD-
7	—	RTS	-	-	-
8	←	CTS	-	-	-
9	—	-	TxD-	DATA-	TxD-

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

IOLAN DB25M Socket	Direction	RS232	RS485 Full Duplex	RS485 Half Duplex	RS422
1	—	Sheild	Sheild	Sheild	Sheild
2	→	TxD	-	-	-
3	←	RxD	-	-	-
4	→	RTS	-	-	-
5	←	CTS	-	-	-
6	←	DSR	-	-	-
7	—	GND	GND	GND	GND
8	←	DCD	-	-	-
9	—	Power Out	Power Out	Power Out	Power Out
12	—	Power In	Power In	Power In	Power In
13	—	-	-	-	CTS-
14	—	-	TxD+	DATA+	TxD+
15	—	-	TxD-	DATA-	TxD-
18	—	-	-	-	RTS+
19	—	-	-	-	RTS-
20	→	DTR	-	-	-
21	—	-	RxD+	-	RxD+
22	—	-	RxD-	-	RxD-
25	—	-	-	-	CTS+

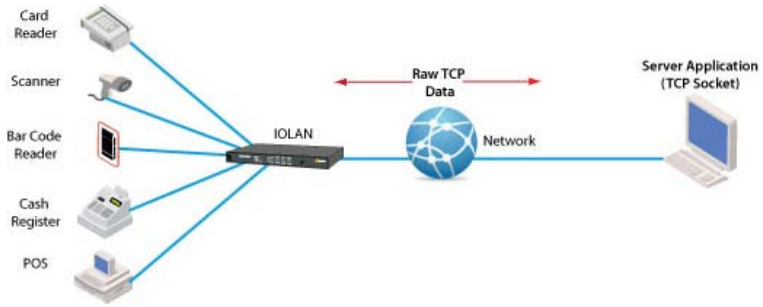
IOLAN DB25F Socket	Direction	RS232	RS485 Full Duplex	RS485 Half Duplex	RS422
1	—	Sheild	Sheild	Sheild	Sheild
2	←	RxD	-	-	-
3	→	TxD	-	-	-
4	←	CTS	-	-	-
5	→	RTS	-	-	-
6	→	DTR	-	-	-
7	—	GND	GND	GND	GND
8	←	DCD	-	-	-
9	—	Power Out	Power Out	Power Out	Power Out
12	—	Power In	Power In	Power In	Power In
13	—	-	-	-	RTS-
14	—	-	RxD+	-	RxD+
15	—	-	RxD-	-	RxD-
18	—	-	-	-	CTS+
19	—	-	-	-	CTS-
20	←	DSR	-	-	-
21	—	-	TxD+	DATA+	TxD+
22	—	-	TxD-	DATA-	TxD-
25	—	-	-	-	RTS+

Optional Perle adapters for use with straight thru CAT5 cabling

TCP

Using RAW TCP Sockets

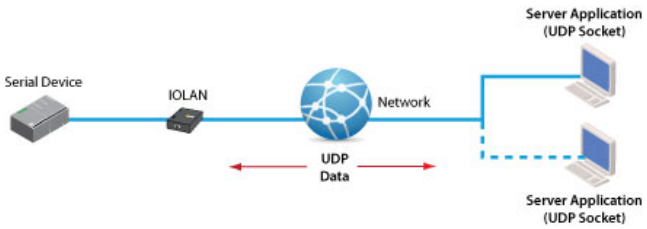
A raw TCP socket connection which can be initiated from the serial-Ethernet device or from the remote host/server. This can either be on a point to point or shared basis where a serial device can be shared amongst multiple devices. TCP sessions can be initiated either from the TCP server application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



UDP

Using Raw UDP Sockets

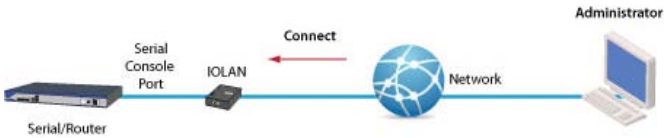
For use with UDP based applications, Perle IOLANs can convert serial equipment data for transport across UDP packets either on a point to point basis or shared across multiple devices.



Console Server

Console Management

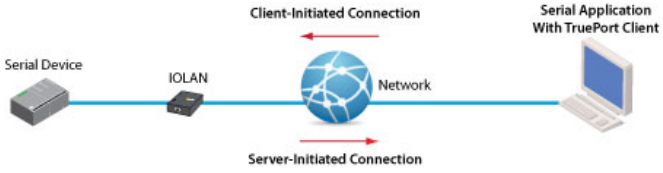
For access to remote console ports on routers, switches,etc, Perle IOLAN's enable administrators secure access to these RS232 ports via inband Reverse Telnet / SSH or out of band with dial-up modems. Perle IOLAN models with integrated modems are available.



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

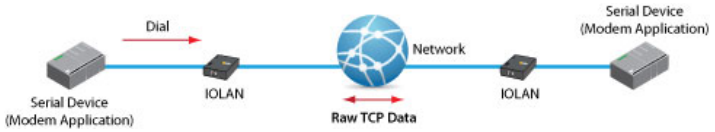
Serial Tunneling enables you to establish a link across Ethernet to a serial port on another IOLAN. Both IOLAN serial ports must be configured for Serial Tunneling (typically one serial port is configured as a Tunnel Server and the other serial port as a Tunnel Client).



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.



	Description	Power Cord	Product Part Number
	**IOLAN SDS1 - 1 x RJ45 serial port**, software selectable RS232/422/485 interface, 10/100 Ethernet, advanced feature set	USA	04030144
		UK	04030141
		EU	04030142
	**IOLAN SDS1 - 1 x DB9M serial port**, software selectable RS232/422/485 interface, 10/100 Ethernet, advanced feature set	USA	04030154
		UK	04030151
		EU	04030152
	**IOLAN SDS1 - 1 x DB25M serial port**, software selectable RS232/422/485 interface, 10/100 Ethernet , advanced feature set	USA	04030024
		UK	04030021
		EU	04030022
	**IOLAN SDS1 - 1 x DB25F serial port**, software selectable RS232/422/485 interface, 10/100 Ethernet, advanced feature set	USA	04030164
		UK	04030161
		EU	04030162
	**IOLAN SDS1 (BULK PACK) - 1 x DB25M serial port, bulk pack of 20 units, no power cords, 1 CD included**, software selectable RS232/422/485 interface, 10/100 Ethernet , advanced feature set	None	04030040
	**IOLAN SDS2 - 2 x RJ45 serial ports**, software selectable RS232/422/485 interfaces, 10/100 Ethernet, advanced feature set	USA	04030104
		UK	04030101
		EU	04030102
	**IOLAN SDS4 - 4 x RJ45 serial ports**, software selectable RS232/422/485 interfaces, 10/100 Ethernet, advanced feature set	USA	04030304
		UK	04030301
		EU	04030302
		SA	04030305
		AUS	04030306

Accessories:

Accessories			
	3m Cbl-Straighthru	3 meter RJ45 to RJ45 CAT5 Straight-thru cable #1100360-10	04005120
	4 DIN Rail Mount Bkt	DIN Rail Mounting Kit for 4 port IOLAN DS wall mount models and Stand-Alone Media Converter	04030840
	DIN Rail Mount Kit	DIN Rail Mounting Kit for 1 or 2 port IOLAN DS, TS, SDS	04030030
	Starter Kit (8-wire)	IOLAN Starter Kit (8-wire): 1x RJ-45 to DB-25 DTE Male adapter, 1x RJ-45 to DB-25 DCE Male adapter, 1x RJ-45 to DB-25 DTE Female adapter, 1x RJ-45 to DB-9 Male DTE adapter, 1x RJ-45 to DB-9 Female DTE adapter and 1x RJ45M-RJ45F Sun/Cisco crossover adapter	04007000
Cable Accessories Please click here to see what adapters you may need			
	3m Cbl-Sun/Cisco Prl	3m Cbl-Sun/Cisco Prl - RJ45-RJ45 IOLAN DS to Sun/Cisco 3m Cable	04030070
	DBA0010	DBA0010 - RJ-45F to DB-25F crossover (DTE) adapter for console port #1100220-10	04006950
	DBA0010 8pck	DBA0010 8pck - 8 pack of #04006950 IOLAN-RJ45F to DB25F (DTE) crossover adapter	04031240
	DBA0011	DBA0011 - RJ-45F to DB-25M crossover (DTE) adapter for console ports. #1100230-10	04006960

	DBA0011 8pck	DBA0011 8pck - 8 pack of #04006960 IOLAN-RJ45F to DB25M (DTE) crossover adapter	04031250
	DBA0013	DBA0013 - RJ-45F to DB-25M straight-thru (DCE) adapter for modems #1100260-10	04006990
	DBA0013 8pck	DBA0013 8pck - 8 pack of #04006990 IOLAN-RJ45F to DB25M Straight-thru adapter for modems	04031280
	DBA0020	DBA0020 - RJ-45F to DB-9F crossover (DTE) adapter for console ports. #1100240-10	04006970
	DBA0020 8pck	DBA0020 8pck - 8 pack of #04006970 IOLAN-RJ45F to DB9F (DTE) crossover adapter	04031260
	DBA0021	DBA0021 - RJ-45F to DB-9M crossover (DTE) adapter for console ports. #1100250-10	04006980
	DBA0021 8pck	DBA0021 8pck - 8 pack of #04006980 IOLAN-RJ45F to DB9M (DTE) crossover adapter	04031270
	DBA0023	DBA0023 - RJ-45F to DB-9M straight-thru (DCE) adapter for modems #1100340-10	04007200
	DBA0031	DBA0031 - IOLAN - RJ45M to RJ45F Sun/Cisco crossover adapter #1100219-10	04030080
	DBA0031 8pck	DBA0031 8pck - 8 pack of #04030080 IOLAN-RJ45M to RJ45F Sun/Cisco crossover adapter	04031230
Maintenance agreements - Console Server / Device Server / Terminal Server Please click here to check for maintenance availability in your region			
	NSS- 1 PortXPRESSREP	1 Port Terminal/Device/Console Server - Express Replacement	SERNSS01
	NSS- 2 PortXPRESSREP	2 Port TerminalDevice/Console Server - Express Replacement	SERNSS02
	NSS- 2 PortXPRESSREPF	2 Port Terminal/Device/Console Server - Express Replacement French	SERNSS02F
	NSS- 4 PortXPRESSREP	4 Port Terminal/Device/Console Servers - Express Replacement	SERNSS04
	NSS- 4 PortXPRESSREPF	4 Port Terminal/Device/Console Servers - Express Replacement French	SERNSS04F