Serial over Ethernet Device Server

User's Manual

Second Edition, November 2005



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Serial over Ethernet Device Server

User's Manual

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Safety Information

- 1. Keep this User's Manual for future reference.
- 2. Always read the safety information carefully.
- 3. Keep this equipment away from direct sunlight, or in humid or damp places.
- 4. Do not place this equipment in an unstable position, or on vibrating surface before setting it up.
- 5. Do not use or place this equipment near magnetic fields, televisions, or radios to avoid electronic interface that affects device performance.
- 6. Do not attempt to disassemble or repair the equipment or the warranty would be useless.
- 7. To avoid damaging your system and equipment, please make sure that your computer is off before you install the product.



Chapter 1	Introduction	1-1
	Overview	1-2
	Package Checklist	1-3
	Product Features	1-4
	Product Specifications	1-5

Chapter 2	Hardware Installation	2-1
	Hardware Installation	2-2
	Mechanical Drawings of Serial over Ethernet Server	2-4
	Jumper Settings for 3-in-1 Serial over Ethernet Server	2-7
	Pin Assignment	2-8

Chapter 3	Initial IP Configuration	3-1
	Factory Default Settings	3-2
	Initializing IP Address Settings	3-2

Chapter 4	Serial Console Configuration	4-1
	Overview	3-2
	Default Settings	3-2
	Command List	3-2
	Configure Serial over Ethernet Server	3-3
	Change Network settings	3-5
	Change COM port Settings	3-6
	Display Settings	3-7
	Forget Password	3-8

Chapter 5	SLAN Utility Configuration	5-1
	Overview	
	Installing SLAN Utility	
	Uninstalling SLAN Utility	
	Server Manager	
	Server Monitor	5-29
	Port Monitor	5-34
	Port Mapping	5-40

Chapter 6	Port Re-Director Driver	6-1
	Install Port Re-Director Driver	
	Uninstall Port Re-Director Driver	

Chapter 7	Trouble Shooting	7	'-1
Onapter 7	riouble oncoung		

Chapter 8	Appendix	8-1
	Core Technologies	8-2
	Cable Wiring Diagrams	8-5
	Safety Guide	8-10
	Contract Information	8-11

1. Introduction

Thank you for purchasing the Serial over Ethernet Server, which is designed to enable users accessing serial devices anywhere over LAN or the Internet. Serial over Ethernet Server allows users to continue using RS-232, or RS-422/485 serial communications software that was written for pure serial communications applications. It is the best and most economical solution to instantly convert your commercial or industrial serial devices to be internet ready.

The following topics are covered in this chapter:

- Overview
- Package Checklist
- Product Features
- Product Specifications

Overview

Serial over Ethernet Servers are designed to easily network your current serial devices. It provides a convenient and economical solution not only to protect your current hardware investment, but also to ensure future network expandability. With Serial over Ethernet Server, users can centralize serial devices and distribute the management hosts at the same time.

Serial over Ethernet Server supports Real COM mode for users to easily use the existing Windows based serial software or API to communicate with serial devices over an Ethernet LAN structure. With this feature, user allows communications with the connected serial device in the same manner as a device connected to the COM port on a PC. This excellent feature preserves your software investment and lets you enjoy the benefits of networking your serial devices instantly.

Serial over Ethernet Server equips with 1, 2 or 4 ports high speed asynchronous RS-232 or RS-422/485 standard serial ports which accessed through DB-9 male or RJ45 female connectors. It has built-in one 10/100 Mbps Ethernet RJ-45 connection with auto-select 10BaseT or 100BaseTX feature. SLAN also provides a reliable and high-speed connection for serial devices to an Ethernet LAN/WAN communication and supports total 1 Mbps bandwidth sharing for all serial ports. It is suitable for connecting different devices for remote data polling, event handling or data transferring via Ethernet in different serial ports.

Serial over Ethernet Server supports automatic IP configuration protocols (DHCP) and manual configuration via SLAN Utility or serial console. With user friendly Windows based SLAN Utility, user can configure the parameters, server monitor, and COM port monitor easily and simultaneously. As well we provide port re-direction driver for use in the Linux based system. In conclusion, Serial over Ethernet Server series equips not only powerful hardware structure, but as well versatile software utility for users to easily operate and satisfy most kind of applications.

Package Checklist

Please check if the following items are present and in good condition upon opening your package. Contact your vendor if any item is damaged or missing.

Standard Accessories:

- 1. Multi-port (1, 2, or 4) Serial over Ethernet Server × 1
- 2. CD Driver
- 3. Quick Installation Guide
- 4. User's Manual (This document)

Optional Accessories:

- 1. RS-232 Console Cable
- 2. Power Adapter 12V / 1A, 2.1mm, O +
- 3. Wall Mount Kit
- 4. DIN-Rail Mount Kit
- 5. Rubber foot stub / R Screw



Wall Mount Kit



DIN-Rail Mount Kit



R Screw / Rubber foot stub

Product Features

- 1 / 2 / 4 independent RS-232 or RS-422/485 Serial ports.
- Single-chip SUN8989 controller design for high efficiency and reliability.
- Maximum Transmission bandwidth of 1Mbps shared by each serial port.
- One 10/100M auto-detect Ethernet Port with Integrated 10/100 PHY.
- Easy setup and configuration with user-friendly Windows SLAN Utility.
- Ideal networking current serial devices with existing software or API.
- Firmware upgradeable through Ethernet and Windows SLAN Utility.
- Built-in watchdog timer to prevent system lockup.
- Each device could be shared by the different hosts.
- Supports DHCP client to get IP configuration automatically from a LAN.
- Supports Real COM mode and serial console for configuration.
- Protocol supports for ICMP, IP, TCP, and DHCP.
- Automatic RTS Signal Control (ARSC[™]) technology for RS-485 signal direction control. (Note)
- Supports Auto Detect and Switch RS-422 and RS-485. (Note)
- RTS/CTS± Handshaking Communication mode for RS-422/485. (Note)
- Built-in termination resistors to avoid cross-talking. (Note)
- Optical Isolation (2.5K Voltage) provides protection against damage from static electrical charge. *(Optional)*
- Surge protection (600 Watts) provides clamping capability against surge damage from high energy spike. (Optional)
- SLAN Utility supports Microsoft Windows 98SE, Me, NT, 2000, XP, and 2003 operation system.
- Port Re-Director driver supports Linux 2.4.X (Redhat8, Redhat9), and Linux 2.6.X (Fedora) Kernels.
- Operation temperature: 0 to 60 °C & Storage Temperature: -20 to 85°C
- * (*Note*) icon means that this feature only built-in for RS-422/485 or 3-in-1 RS-232/422/485 Serial over Ethernet Server models.

*(*Optional*) icon means that this feature only built-in certain Serial over Ethernet Server SI models with <u>S</u>urge or <u>I</u>solation protection.

Product Specifications

• RS-232

• Serial Communication

Туре	Serial over Ethernet RS-232 Device Se	erver
Interface	RS-232	
No. of Port	1, 2, or 4 ports (Depend	on product)
Port Type	DB9 Male or RJ45 Serial ports	
Signal	TxD, RxD, RTS, CTS, DTR, DSR, DCD,	RI, GND
Baud rate	300bps ~ 921.6 Kbps	
Dauu Tale	1 Mbps bandwidth shared by each serial	port
Data bit	5,6,7,8	
Stop bit	1,1.5,2	
Parity	even, odd, none, mark, space	
Flow Control	None, Xon/Xoff, Hardware	
	2KV ESD protection for all signal	(Standard)
	2.5KV Isoation Protection for all signal	(Optional)
Protection	600W Surge Protection for all signal	(Optional)
	*Maximum clamping voltage 24.4 V	
	*Peak pulse current 24.6 A	

• LAN

Ethernet	10/100 Mbps, Auto-select 10BaseT or 100BaseTX
Connector	RJ45
Protection	1.5KV Magnetic Isolation

• Software

Configuration	SLAN Utility, Serial Console	
Real COM / TTY	Linux 2.4.X (Redhat8, Redhat9), and Linux 2.6.X (Fedora Core 2.0) Kernels	
	Microsoft Windows 98SE / ME / 2000/ XP / 2003,	
	(Fedora Core 2.0) Kernels.	
	Linux 2.4.X (Redhat8, Redhat9), and Linux 2.6.X	
Utility / Driver	Port Re-Director Driver for Linux based O.S.	
	Windows 98SE / ME / 2000/ XP / 2003	
	SLAN Utility for Microsoft Windows based O.S.	
Protocols	ICMP, IP, TCP, and DHCP	

• Power

	12 VDC External Power,	(Standard)
	DC Jack Type	
Input Power Voltage	12~48 VDC External Power,	(Optional)
	Terminal Block Type	
	Reverse Power Protection	
Protection	*Protects against V+ & V- reverse protection	
	2.5KV Isloation protection	(Optional)
Dower Consumption	4 ports Model: 500mA	
Power Consumption	2 ports Model: 300mA	
	1 ports Model: 250mA	(at 12V level)

• LED Indicate

Power	Power LED steady on when power in
Serial Status	Serial Port LED blinking when data transmission
LAN	Speed LED steady on when 100M LAN in
	Full-duplex LED light when full-duplex transmission

• Dimensions

	4 ports SLAN :
	189 x 106 x 32 mm (with Mounting Kit)
Dimensions	165 x 106 x 32mm
$(W \times D \times H)$	2 / 1 ports SLAN :
	144 x 90 x 24 mm (with Mounting Kit)
	120 x 90 x 24 mm

• Regulatory Approvals

Regulatory Approvals CE, FCC

• Operation Environment

Operation Temperature	0 to 60 °C
Operation Humidity	5 to 95% RH
Storage Temperature	-20℃ to 85℃

♦ RS-422/485

• Serial Communication

Serial over Ethernet RS-422/485 Device Server		
RS-422 or RS-485		
1, 2, or 4 ports (Depen	d on product)	
DB9 Male or RJ45 Serial ports		
TxD+/-, RxD+/-, RTS+/-, CTS+/-, GND		
Data+/-, RTS+/-, CTS+/-, GND		
300bps ~ 921.6 Kbps		
1 Mbps bandwidth shared by each seria	al port	
5,6,7,8		
1,1.5,2		
even, odd, none, mark, space		
None, Xon/Xoff, Hardware		
ARSC™ technology (Automatic RTS signal control)		
Auto Switch RS-422 & RS-485 technology		
15KV ESD protection for all signal	(Standard)	
2.5KV Isoation Protection for all signal	(Optional)	
600W Surge Protection for all signal	(Optional)	
*Maximum clamping voltage 24.4 V		
*Peak pulse current 24.6 A		
	RS-422 or RS-4851, 2, or 4 portsDB9 Male or RJ45 Serial portsTxD+/-, RxD+/-, RTS+/-, CTS+/-, GNDData+/-, RTS+/-, CTS+/-, GND300bps ~ 921.6 Kbps1 Mbps bandwidth shared by each seria5,6,7,81,1.5,2even, odd, none, mark, spaceNone, Xon/Xoff, HardwareARSC™ technology (Automatic RTS sinAuto Switch RS-422 & RS-485 technology15KV ESD protection for all signal2.5KV Isoation Protection for all signal600W Surge Protection for all signal*Maximum clamping voltage 24.4 V	

• LAN

Ethernet	10/100 Mbps, Auto-select 10BaseT or 100BaseTX
Connector	RJ45
Protection	1.5KV Magnetic Isolation

• Software

Protocols	ICMP, IP, TCP, and DHCP
	SLAN Utility for Microsoft Windows based O.S.
	Windows 98SE / ME / 2000/ XP / 2003
Utility / Driver	Port Re-Director Driver for Linux based O.S.
	Linux 2.4.X (Redhat8, Redhat9), and Linux 2.6.X
	(Fedora Core 2.0) Kernels.
Real COM / TTY	Microsoft Windows 98SE / ME / 2000/ XP / 2003,
	Linux 2.4.X (Redhat8, Redhat9), and Linux 2.6.X
	(Fedora Core 2.0) Kernels
Configuration	SLAN Utility, Serial Console

• Power

	12 VDC External Power,	(Standard)
Input Power Voltage	DC Jack Type	
	12~48 VDC External Power,	(Optional)
	Terminal Block Type	
	Reverse Power Protection	
Protection	*Protects against V+ & V- reverse	protection
	2.5KV Isoation protection	(Optional)
Power Consumption	4 ports Model: 500mA	
	2 ports Model: 300mA	
	1 ports Model: 250mA	(at 12V level)

• LED Indicate

Power	Power LED steady on when power in
Serial Status	Serial Port LED blinking when data transmission
LAN	Speed LED steady on when 100M LAN in
	Full-duplex LED light when full-duplex transmission

• Dimensions

	4 ports SLAN :
	189 x 106 x 32 mm (with Mounting Kit)
Dimensions	165 x 106 x 32mm
$(W \times D \times H)$	2 / 1 ports SLAN :
	144 x 90 x 24 mm (with Mounting Kit)
	120 x 90 x 24 mm

• Regulatory Approvals

Regulatory Approvals CE, FCC

• Operation Environment

Operation Temperature	0 to 60 °C
Operation Humidity	5 to 95% RH
Storage Temperature	-20℃ to 85℃

• 3-in-1 RS-232/422/485

• Serial Communication

Туре	Serial over Ethernet 3-in-1 Device Server			
Interface	RS-232, RS-422 or RS-485			
No. of Port	1, 2, or 4 ports (Depend on product			
Port Type	DB9 Male or RJ45 Serial ports			
RS-422 Signal	TxD+/-, RxD+/-, RTS+/-, CTS+/-, GND			
RS-485 Signal	Data+/-, RTS+/-, CTS+/-, GND			
Doud rate	300bps ~ 921.6 Kbps			
Baud rate 1 Mbps bandwidth shared by each serial p		rial port		
Data bit	5,6,7,8			
Stop bit	1,1.5,2			
Parity	even, odd, none, mark, space			
Flow Control	None, Xon/Xoff, Hardware			
RS-485 Signal Control	ARSC [™] technology (Automatic RTS signal control)			
Select	Select RS-232 & RS-422/485 mode by switch			
RS-232/422/485	Auto Switch RS-422 & RS-485 technology			
	15KV ESD protection for all signal	(Standard)		
	2.5KV Isoation Protection for all signa	al (Optional)		
Protection	600W Surge Protection for all signal	(Optional)		
	*Maximum clamping voltage 24.4 V			
	*Peak pulse current 24.6 A			

• LAN

Ethernet	10/100 Mbps, Auto-select 10BaseT or 100BaseTX		
Connector	RJ45		
Protection	1.5KV Magnetic Isolation		

• Software

Protocols	ICMP, IP, TCP, and DHCP
	SLAN Utility for Microsoft Windows based O.S.
	Windows 98SE / ME / 2000/ XP / 2003
Utility / Driver	Port Re-Director Driver for Linux based O.S.
	Linux 2.4.X (Redhat8, Redhat9), and Linux 2.6.X
	(Fedora Core 2.0) Kernels.
	Microsoft Windows 98SE / ME / 2000/ XP / 2003,
Real COM / TTY	Linux 2.4.X (Redhat8, Redhat9), and Linux 2.6.X
	(Fedora Core 2.0) Kernels
Configuration	SLAN Utility, Serial Console

• Power

	12 VDC External Power,	(Standard)	
Input Dower Veltage	DC Jack Type		
Input Power Voltage	12~48 VDC External Power,	(Optional)	
	Terminal Block Type		
	Reverse Power Protection		
Protection	*Protects against V+ & V- reverse protection		
	2.5KV Isoation protection	(Optional)	
Dower Consumption	4 ports Model: 500mA		
Power Consumption	2 ports Model: 300mA		
	1 ports Model: 250mA	(at 12V level)	

• LED Indicate

Power Dower LED steady on when power in	
Serial Status	Serial Port LED blinking when data transmission
LAN	Speed LED steady on when 100M LAN in
	Full-duplex LED light when full-duplex transmission

• Dimensions

	4 ports SLAN :
	189 x 106 x 32 mm (with Mounting Kit)
Dimensions	165 x 106 x 32mm
$(W \times D \times H)$	2 / 1 ports SLAN :
	144 x 90 x 24 mm (with Mounting Kit)
	120 x 90 x 24 mm

• Regulatory Approvals

Regulatory Approvals CE, FCC

• Operation Environment

Operation Temperature	0 to 60 °C
Operation Humidity	5 to 95% RH
Storage Temperature	-20℃ to 85℃

Hardware Installation

This chapter includes information about hardware installation and mechanical drawings for Serial over Ethernet Server. The following topics are covered:

- Hardware Installation
- Mechanical Drawings
- Jumper Settings for 3-in-1 Serial over Ethernet Server
- Pin Assignments

Hardware Installation

The hardware installation of Serial over Ethernet Server is easy to carry out. Follow the detailed steps given below to install the Serial over Ethernet Server on your system.



To avoid damaging, make sure to discount power connection before wiring or disposing Serial over Ethernet Server.

- **Step 1:** Select which mode you want to use, including "Wall Mount", "DIN-Rail Mount" or "Rubber foot stub". Fasten the holding screw and fix Serial over Ethernet Server in place firmly.
- **Step 2:** Turn your serial device's power off, and connect serial data cable to Serial over Ethernet Server's serial port.
- **Step 3:** Connect Ethernet cable to Serial over Ethernet Server's LAN port and the other end of the cable to the Ethernet network.
- Step 4: Connect the 12-48 VDC power line with terminal block or 12VDC power adapter into DC Jack on Serial over Ethernet Server's power module.

NOTE:

1. Calculate the maximum possible current in each power wire and common wire. Observe all electrical codes dictating the maximum current allowable for each wire size. If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

2. To limit the effects of noise for electromagnetic interface (EMI), please connect the shielded ground wire on first pin power terminal block to an appropriate grounded metal surface.





Mechanical Drawings of Serial over Ethernet Server



• 2 port Model



SPEED: 100M LAN LED FDX: Full-Duplex LAN LED

Bottom-End View



Embedded Model



NO.	Function	Pin	Pin Assignment
1	Serial Console	4 3 2 ▶1	1.RxD 2.TxD 3.NC 4.GND
2	Factory Using Only	-	_
3	Serial Port 2		RS-232: 1.DCD 2.RxD 3.TxD 4.DTR 5.GND 6.DSR 7.RTS 8.CTS 9.RI
4	Serial Port 1	- 9 87 65 43 21	RS-422: 1.TxD- 2.TxD+ 3. RxD+ 4.RxD- 5.GND 6.RTS- 7.RTS+ 8.CTS+ 9.CTS- RS-485: 1. D+ 2.D- 5. GND 6.RTS- 7.RTS+ 8.CTS+ 9.CTS-
5	Reset	-	
6	Power	-+	5V 1A

Jumper Settings for 3-in-1 Serial over Ethernet Server

3-in-1 Serial over Ethernet Server equips RS-232 or RS-422/485 mode selection for each serial port by jumper setting. User can pull the DIP switch down for RS-422/485 mode or pull it up for RS-232 mode independently. Please refer to the following illustration.



Serial over Ethernet Server has built-in RS-422/485 Auto Identify & Switch technology. It can automatically identify the state of RS-422 full-duplex or RS-485 half-duplex and control the data transceiver and receiver wires at the same port without selecting jumpers or switches anymore. It's more convenient for users to avoid shutting down Serial over Ethernet Server for jumpers or switches setting.

Pin Assignment

• RS-232



• RS-422





• RS-485



2-8

Initial IP Configuration

The first thing you should do is configuring the IP address when using Serial over Ethernet Server at the first time. This chapter introduces the method to configure Serial over Ethernet Server's IP address.

The following topics covered in this chapter:

- Factory Default Settings
- Initializing IP Address Settings

Factory Default Settings

Serial over Ethernet Server is configured with the following factory default network settings:

Static IP Mode IP Address: 192.168.1.1 Netmask: 255.255.255.0 Gateway: 192.168.1.254

Initializing IP Address Settings

The first thing you should do is configuring the IP address when using Serial over Ethernet Server at the first time. Please determine whether your Serial over Ethernet Server needs to use a Static IP or Dynamic IP mode, then you can use serial console or Ethernet mode to configure networking settings.

Console Mode

Please using straight through RS-232 DB9F to DB9F cable connect between Serial over Ethernet Server's serial console port and PC's COM port then apply power to Serial over Ethernet Server. Please use the "Hyper Terminal" program to configure Serial over Ethernet Server's network settings. You can refer to chapter 4, serial console configuration for more detail and chapter8, Cable Wiring Diagrams section for more detail.

• Ethernet Mode

Please use cross-over Ethernet cable to connect the Serial over Ethernet Server directly to your computer's Ethernet card. Please configure your PC's network settings in the same subnet with Serial over Ethernet Server, such as setting 192.168.1.2 IP address on your computer. Then you can use the "SLAN Utility" program to configure Serial over Ethernet Server's network settings. You can refer to chapter 5, SLAN Utility configuration for more detail. Please refer to chapter8, Cable Wiring Diagrams section for more detail.

Serial Console Configuration

This chapter introduces the configuration of Serial over Ethernet Server from serial console. Please follow the step by step configuration guide to confirm how to set and configure the Serial over Ethernet Server through serial console.

The following topics covered in this chapter:

- Overview
- Default Settings
- Command List
- Configure Serial over Ethernet Server
- Change Network settings
- Change COM port Settings
- Display Settings
- Forget Password

Overview

Before the Serial over Ethernet Server is installed on a LAN, the serial console mode for users easily configure Network settings and COM ports' setting from the defaults. The serial console port is configured as a DTE (data terminal equipment) device. All PC COM ports are DTE ports. A straight through cable is required to make a connection between the COM port on a PC and the Serial over Ethernet Server serial console port.

Default Settings

There is Serial over Ethernet Server's default settings as below.

Password	1234		
Super password	s51gm2z (Load factory Default setting)		
Network	Static IP Mode		
	IP Address: 192.168.1.1		
	Netmask: 255.255.255.0		
	Gateway: 192.168.1.254		
COM Port	Baud Rate: 9600 bps		
	Data bits: 8		
	Parity bits: None		
	Stop bits: 1		
	Flow Control: None		

Command List

Command	Function
D	Display Configuration
V	Check firmware version and Model number
М	Back to main menu
S 0	Modify Network Settings
S	Modify COM Port Settings
X MAC	Modify MAC Address
O2	Reset Serial over Ethernet Server

Configure Serial over Ethernet Server

Please using straight through RS-232 DB9F to DB9F cable connect between Serial over Ethernet Server's serial console port and PC's COM port then apply power to Serial over Ethernet Server. You can refer to chapter8, Cable Wiring Diagrams section for more detail.

Please execute the "Hyper Terminal" program in your system firstly.



Start > Program > Accessories > Communications > Hyper Terminal

Enter "Console" as the project name. Press OK. Then select COM port number that Serial over Ethernet Server's serial console port connected.

Connection Description	Connect To ? 🔀
New Connection	Sonsole Console
Enter a name and choose an icon for the connection: Name:	Enter details for the phone number that you want to dial:
Console	Country/region: United States (1)
lcon:	Area code: 2
🏽 🍣 🌭 🖳 🧐 📓	Phone number:
	Connect using: COM1
OK Cancel	OK Cancel

Hyper Terminal open the connected PC COM port at a baud rate of **57600**, Data bits 8, Parity None, Stop bits 1, and Flow control None. Click "OK" to continue.

Port Settings		
<u>B</u> its per second:	57600	~
<u>D</u> ata bits:	8	~
<u>P</u> arity:	None	~
<u>S</u> top bits:	1	~
Elow control:	Hardware	~
L	<u>R</u> estore	Defaults

Press "Enter" to execute Serial over Ethernet Server console settings Please enter default password: **1234**



Change Networking Settings

Change network settings to match your networking required firstly. After entering password, please enter command code **S 0**.



Enter **o2** for resetting Serial over Ethernet Server to execute configuration.

Change COM Port Settings

Change COM port settings to match your devices required. After entering password, please enter command code **S**.

Function	Parameters
Port Number	1, 2, 3, 4
Baud Rate	300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600
Parity	1=None, 2=Odd, 3=Even, 4=Mark, 5=Space
Data bits	5, 6, 7, 8
Stop bits	1 =1, 2 =1.5, 3 =2
Flow Control	1=NONE, 2= XON/OFF, 3=Hardware

Function	Command
Port	COM port : 1
Settings	Baud rate : 9600
	Data bits : 8
	Parity : None (=1),
	Stop bits : 1 (=1),
	Flow Control : None (=1).
	S + <u>Port</u> + <u>Baud Rate</u> , <u>Data bits</u> , <u>Parity</u> , <u>Stop bit</u> , <u>Flow Control</u> S <u>1</u> <u>9600</u> , <u>8</u> , <u>1</u> , <u>1</u> , <u>1</u>
	Console - HyperTerminal
	D 등 3 2 ID 등 명
	"02":For Resetting the device. Device needs reset after changing the MAC ID ++
	Please Enter Your Password :***** D: Display Configuration S: Set Configuration [ETH: S 0 IPAddress SubnetMask Gateway eg: S 0 10.10.10.2 255.255.255.0 10.10.10.1 [SERIAL: S Port, Baud, Data, Parity, Stop, Flow Port {1-4} Baud {value} Data {5,6,7,8} Parity {1:None, 2:0dd, 3:Even, 4:Mark, 5:Space} Stop {1:1bit, 3:1.5bits, 2:2bits} Flow {1:NONE, 2:XON/XOFF, 3:HARDWARE} eg: S 1 9600,6,1,1,1 "X MAC MACaddress" : To set the MAC address eg: X MAC 00:80:2b:5c:49:26 "02":For Resetting the device. Device needs reset after changing the MAC ID
	Command: S 1 9600,8,1,1,1 SUCCESS Lommand:
	Connected 0:00:06 Auto detect 57600 8-N-1 SCROLL CAPS NUM Capture Print echo

Display Settings

To display your Serial over Ethernet Server settings, enter command code D.

🏶 Console - Hy Eile Edit View 🗅 🖨 🍘 🕉	<u>Call Iransfer H</u> elp						
Command:	d						
Eth0	IP Address	N	etMask		Gateway		
DHCP 1	92.168.110	188 25	5.255.255.	0 192	.168.110.	245	
SERIAL N	UMBER: 1234	15					
SERVER N	IAME: SLAN						
MAC Addr	ess: 0:80:	4c:2b:55:2	2				
Port TCP	Speed	Databits	Parity	Stop Bit	Flow	Alias	
SP1 123 SP2 123		8 8	1	1 1 1	1	alsp1 alsp2	
SP3 123 SP4 123	6 9600	8 8 8 8	1 1 1 1	1 1	1 1 1	alsp3 alsp4	
Command:							
Connected 0:00:06	Auto detect	57600 8-N-1	SCROLL CAPS	NUM Capture	Print echo		

To display your Serial over Ethernet Server's firmware and model, enter command code V.



Forget Password

If you forget the password, the ONLY way to configure Serial over Ethernet is by using the serial console mode to load factory default settings.

Console - HyperTerminal File Edit View Call Transfer Help	
D 🕾 🕾 💱 ID 🔁 🖫	
MAC Loop-back test failed !!! Loading main program ID: Display Configuration S: Set Configuration ETH: S 0 IPAddress SubnetMask Gateway eg: S 0 10.10.10.2 255.255.0 10.10.10.1 ISERIAL: S Port, Baud, Data, Parity, Stop, Flow Port {1-4} Baud {value} Data {5,6,7,8} Parity {1:None, 2:0dd, 3:Even, 4:Mark, 5:Space} IStop {1:1bit, 3:1.5bits, 2:2bits} Flow {1:NONE, 2:XON/XOFF, 3:HARDWARE} eg: S 1 9600,6,1,1,1 "X MAC MACaddress" : To set the MAC address eg: X MAC 00:80:2b:5c:49:26 "02":For Resetting the device. Device needs reset after changing the MAC ID	
Please Enter Your Password :******* Do You Want to Reset the Settings to Factory Defaults ? [y/n]	
Connected 0:00:06 Auto detect 57600 8-N-1 SCROLL CAPS NUM Capture Print echo	

Entry super password "s51gm2z" to restore factory defaults.

Entry "Y" to load factory default settings, then system will reboot automatically.

Please refer to Chapter 3 "Default Settings" section to confirm all initial parameters.

Note:

- 1. Please take care of the characteristic of password letters.
- 2. After executing load factory default settings, you will lose all configurations that you set before.
- 3. Super password can NOT use in Windows based SLAN Utility or Linux based Port Re-direction software. It works in serial console only.
- 4. User can not modify super password.

SLAN Utility Configuration

This chapter introduces the installation and configuration of SLAN Utility software. Please follow the step by step software installation guide to confirm how to install appropriate software and configure the Serial over Ethernet Server through SLAN utility.

The following topics covered in this chapter:

- Overview
- Installing SLAN Utility
- Uninstalling SLAN Utility
- Server Manager
- Server Monitor
- Port Mapping
- Port Monitor

Overview

SLAN Utility provides server manager, server Monitor, port monitor and port mapping features for user easily controlling and configuring serial over LAN terminal server. Users can remotely manage, monitor, and modify your Serial over Ethernet server over network operation. SLAN Utility supports various operation systems, including Microsoft[®] Windows[®] 98SE, Me, NT, 2000, XP, and server2003.

The SLAN Utility software is divided into four parts.

- A. The top part is the function list and online help area.
- (Windows NT does not support this .chm file format & hence help menu won't be functional under Win NT.)
- B. The left part lists the main function groups.
- C. The right part provides the SLAN list, which can be selected to process user requirements.
- D. The bottom part is the Log area, which shows useful messages that record the user's processing history.

🚍 SLAN Utility					
Fil <u>e F</u> unction <u>S</u> erver Manager <u>V</u> iev	v <u>H</u> elp	A .			
眉		Server M	lanager - Found 0	Device(s)	
	No	Model	MAC Address	IP Address	Status
Server Manager					
Server Monitor					
Pethonitor			C.		
Port Mapping					
Auto IP Address Report					
			WI .		>
No Time		Description			
Event Log Monitor Log		D.			
Ready			3/1	0/2005 15:51:44	

Installing SLAN Utility

1. Please insert the CD driver as bound with your SLAN product into your CD/DVD ROM, and run the "**PortSetup.exe**" file locate within the CD driver.



2. SLAN Utility Setup Application will pup-up, and click "Next" to continue.



3. Please select SLAN Utility installation path, and click "Next" to continue.

9	SLAN Utility Setup	<
	Setup Application for SLAN UTILITY	
	Installation Path : CAProgram Files	
	Enter the path and click Next <u>Next >> Exit</u>	

4. SLAN Utility Setup Application will start installing SLAN Utility software.



5. After finishing SLAN Utility installation, click "Finish" to exit.



6. Run "SLAN Utility.exe" icon on the desktop to entry SLAN Utility software.

SLAN Utility Function Server Manager J	/iew <u>H</u> elp				
		Server	Manager - Found 0	Device(s)	
	No	Model	MAC Address	IP Address	Status
Server Manager					
Server Monitor					
E					
Port Monitor					
Port Mapping					
Auto IP Address Report					
nopon	<)
Uninstalling SLAN Utility

1. Please insert the CD driver as bound with your SLAN product into your CD/DVD ROM, and run the "**PortUninst.exe**" file locate within the CD driver.



2. Please select both "Uninstall Serial Software" and "Uninstall Parallel Software" and click "Uninstall" to continue.

🗑 SLAN	Utility Uninstall 🛛 🛛
UnIns	tallation of SLAN Utility 🏾 🍠
v	UnInstall Serial Software
v	UnInstall Parallel Software
	<u>U</u> nInstall <u>Exit</u>

3. After finishing SLAN Utility uninstallation procedure, click "Finish" to exit.



Server Manager

Server Manager is used to search, configure and store the Serial over Ethernet server configuration settings. If you are an administrator, you can modify Serial over Ethernet server all settings and in the Sever Manager selection.



• Search Device

The Search Device function is used to locate all Serial over Ethernet servers that are connected to the same LAN as your computer by broadcast features. By Search Device locates all Serial over Ethernet servers connected to the LAN under same subnet as that of PC from where the search is initiated.

Place the cursor over the configuration row, and right click the Search Devices function.

il <u>e F</u> unction <u>S</u> erver Manager <u>V</u>	<u>V</u> iew <u>H</u> elp				
		Server	Manager - Found 0	Device(s)	
Server Manager	No	Model	MAC Address	IP Address	Status
Server Monitor			Search Devices	-17	

The Searching for SLANs window will open and display the Model, IP Address, MAC Address, and search Progress.

Searching	for SLANs		Stop
ound 1 Sl	AN(s) remain time	out = 3 second(s)	
No	Model	MAC Address	IP Address
1	SLAN4S	0-90-e8-9-c9-41	192.168.110.16

When the search is complete, the Searching for SLANs window closes, and the Serial over Ethernet server that were located are displayed in the SLAN Utility.

e Function Server Manager	<u>Y</u> iew <u>H</u> elp				
_ <u>=</u>		Server	Manager - Found	1 Device(s)	
	No	Model	MAC Address	IP Address	Status
Server Manager	1	SLAN4S	0-90-e8-9-c9-41	192.168.110.16	Locked
3					
and a second second					
Server Monitor					

For the example shown here, Broadcast search found one 4port Serial over Ethernet server on the LAN. As you can see, SLAN has password protection, which is indicated by **Locked** under **Status**.

To configure one of the listed SLANs, place the cursor over the row displaying that SLAN's information, and then double click.

• Add with IP address

The Add with IP Address function is used to locate one Serial over Ethernet server connected to the LAN by designating one fixed IP address, such as different subnet structure.

Place the cursor over the configuration row, and right click the Add with IP Address function.



Please fill in IP address that Serial over Ethernet server located, and click "OK". The Searching for SLANs window will open and display the Model, IP Address, MAC Address, and search Progress.

Add Device	Searching for SLA	Ns		E
Input IP Address	-	for SLANs AN(s) remain timed	out = 3 second(s)	Stop
	No	Model	MAC Address	IP Address
OK Cancel	1	SLAN4S	0-90-e8-9-c9-41	192.168.110.16
	,			

When the search is complete, the Searching for SLANs window closes, and the Serial over Ethernet server that were located are displayed in the SLAN Utility.

il <u>e F</u> unction <u>S</u> erver Manager	<u>Y</u> iew <u>H</u> elp				
3		Server	Manager - Found	1 Device(s)	
	No	Model	MAC Address	IP Address	Status
Server Manager	1	SLAN4S	0-90-e8-9-c9-41	192.168.110.16	Locked
Server Monitor					

For the example shown here, Add with IP Address search found one 4port Serial over Ethernet server on the LAN. As you can see, SLAN has password protection, which is indicated by **Locked** under **Status**.

To configure one of the listed SLANs, place the cursor over the row displaying that SLAN's information, and then double click.

• Unlock (Default password = 1234)

To configure one of the listed Serial over Ethernet servers, place the cursor over the row displaying that SLAN information, then right-click. Click on Unlock option in the pop-up window that prompts for a password.

🚍 SLAN Utility										
File Function Server Manager View	w <u>H</u> elp									
		Server Manager - Found 1 Device(s)								
	No	Model	MAC Addres		IP Address	Status				
Server Manager	1		arch Devices	41 19:	2.168.110.16	Locked				
		6 <u>A</u>	ld with IP Address							
Server Monitor	-	<u> 보</u>	cate							
E			ulock							
Port Monitor			istom <u>T</u> elnet							

Enter password & click unlock to continue.

Password		×
Enter Password		
	<u>U</u> nlock <u>Cancel</u>	

SLAN U	tility 🛛 🔀
(į)	Unlock OK!!
[OK]

The previous "Lock" status will switch to "**Unlock**" status. SLAN Utility will keep this SLAN in the Unlock status.

	🔄 SLAN Utility									
Fil <u>e</u>	<u>F</u> unction	<u>S</u> erver Manager	<u>V</u> iew	<u>H</u> elp						
		Ē			Server	Manager - Found	1 Device(s)			
	<u>-</u>			No	Model	MAC Address	IP Address	Status		
	Server	Manager		1	SLAN4S	0-80-4c-2b-55-22	192.168.110.16	Unlocked		
		-								
		2								

Note:

If the SLAN is password protected, then you will not be able to use the right click or double click method to open the configuration page. Be sure to unlock SLAN firstly, if the bellowing message pup-up.



Configure

Now place the cursor over the row, right-click and launch a function dialog, click the configure function, the configuration window will open and display.

Fil <u>e F</u> unction <u>S</u> erver Manager <u>J</u>	<u>/</u> iew <u>H</u> elp				
- Ê		Server	Manager - Found 1	Device(s)
	No	Model	MAC Address	IP Add	
Server Manager		SLAN4S	0-90-e8-9-c9-41		gearch Devices Add with IP Address cocate
				*	Configur
Port Monitor					Custom <u>T</u> elnet
					T 1 T

The progress bar shows that SLAN Utility is retrieving configuration information from the specific Serial over Ethernet server.

Progressing	
Extracting Device Info	

You can get this Serial over Ethernet server's information at the left part and configure the Serial over Ethernet server setting at the right part setting pages.

Model Name :	☐ Modify Server Name : SLAN
SLAN4S	Modify Enable Inactivity Time : 600 (Seconds)
MAC Address	F Modify
0-90-e8-9-c9-41	Time Zone :
	Local Date : 2005/10/ 3
Serial Number	Local Time : 12 Hr(s) 0 Min(s) 0 Sec(s)
2	Time Server :
Firmware Version	 Modify Enable Web Console
Ver1.0.0.1_1234	Enable Telnet Console

• Information:

Information area will show Model Name, MAC Address, Serial Number, and Firmware version. User just only can read it instead of configuring those values.

• Basic Settings:

User can configure the "Server Name" and "Inactivity Time" in this page.

A. Server Name: (Default = SLAN)

Server name is specially designed to allow easy identification of the Serial over Ethernet servers which are connected to LAN. Click the "Modify" check box to modify configuration. You can input maximum 7 characters.

Modify	
Server Name :	SLAN

B. Inactivity Time: (Default = Enable 600 seconds)

Serial over Ethernet server automatically closes Real (remote) COM port connection if there is no data transmission through the serial port during the specific inactivity time. After the connection is closed, Serial over Ethernet server starts listening for another Real COM driver's connection from another host. Click "Enable" and "Modify" check boxes to modify configuration. You can enter the inactivity time out range form 30 to 65535 seconds. Connections closure is done either by user or by in-activity time.

☐ Modify ✓ Enable	Inactivity Time : 600	(Seconds)
Modify Finable	Inactivity Time : 65535	(Seconds)

 $30 \sim 65535$ parameter defines the maintenances status as Closed or Listen on the Real COM mode connection. If disable this function of inactivity time, the current Real COM mode connection is maintained until there's connection close request.

Note:				
Please un-o	lick "Enable" check l	box to disable	e inactivity time function.	
Modify	Inactivity Time : 600	(Seconds)		

• IP Settings:

Please assign a valid IP address to Serial over Ethernet server before working in your network environment. Your network system administrator should provide you with an IP address and related settings for your network.

First time users can refer to Chapter 3, Initial IP Address Configuration, for more information. Click the "Modify" check box to modify configuration to activate the parameter setting box.

A. IP Address: (Default = 192.168.1.1)

An IP address is a permanent assigned to a network device. Computers use the IP addressed to identify and talk to each other over the network. Choose a proper IP address which is unique and valid in your network environment.



B. Net Mask: (Default = 255.255.255.0)

A subnet mask represents all the network hosts at one geographic location, in one building, or on the same local area network. When a packet is sent out over the network, the Serial over Ethernet server will use the subnet mask to check whether the desired TCP/IP host specified in the packet is on local network segment. If the address is on the same network segment as the Serial over Ethernet server, a connection established directly from the Serial over Ethernet server. Otherwise, the connection is established through the given default gateway.

Modify					
Net Mask :		255	255	255	0
Gateway :	1	92	168	110	253
IP Configuration :	Stat	ic			•
DNS Server1 :					
DNS Server2 :					

C. Gateway: (Default = 192.168.1.254)

A gateway is a network gateway that acts as an entrance to another network. Usually, the computers that control traffic within the network or at the local Internet service provider are gateway nodes. Serial over Ethernet server needs to know the IP address of the default gateway computer in order to communicate with the hosts outside the local network environment. For correct gateway IP address information, consult the network administrator.

D. IP Configuration: (Default = Static)

Static Mode:User defined IP address, Net Mask, Gateway.DHCP Mode:DHCP Server assigned IP address, Net Mask,
Gateway, DNS, and Time Server

IP Configuration :	Static
	Static
	DHCP

E. Subnet: (Default = Disable)

Under Network properties of Serial over Ethernet server there is an option to specify an alternate Subnet, gateway addresses. Once this is set, broadcast search can find Serial over Ethernet server from this subnet also.

Modify			
Subnet 2 :	255.255.255.0	Gateway 2 :	192 . 168 . 100 . 254

• Port Settings:

Users can configure each serial port's settings in this page, including Alias, Time Out, Baud rate, Parity, Data bits, Stop bits, and Flow Control.

Port	Alias	Settings	TimeOut
1	alsp1	9600bps,8-bit,None,1-bit,None,RS-232	62
2	alsp1 alsp2	9600bps,8-bit,None,1-bit,None,RS-232	62
3	alsp3	9600bps,8-bit,None,1-bit,None,RS-232	62
4	alsp4	9600bps, 8-bit, None, 1-bit, None, RS-232	62

Click the "Modify" check box to activate the parameter, highlight and click the setting button at bottom of the specific port to modify the port setting.

Port	Alias	Settings	TimeOut
	alspl	9600bps,8-bit,None,1-bit,None,RS-232	62
2	alsp2	9600bps,8-bit,None,1-bit,None,RS-232	62
3	alsp3	9600bps, 8-bit, None, 1-bit, None, RS-232	62
1	alsp4	9600bps,8-bit,None,1-bit,None,RS-232	62

You can simultaneously modify the configurations of multiple ports. To select multiple ports, hold down the "Ctrl" key when selecting additional ports or hold down the "Shift" key to select a group of ports.

A. Port Alias: (Default = alspX)

Port Alias is specially designed to allow easy identification of the serial devices which are connected to Serial over Ethernet server's serial port. Also you can click the "Apply port alias to all select ports" check box to rename all selected serial ports' alias efficiently. You can input maximum 5 characters.

Apply port alias to all selected ports				
Port alias :	alspl			

B. Time Out: (Default = $62 \times 0.5 \text{ ms}$)

This parameter defines the interval during which Serial over Ethernet server fetches the serial data from its internal buffer. If there is incoming data through the serial port, Serial over Ethernet server stores data in the internal buffer. Serial over Ethernet server transmits data stored in the buffer, but only if the internal buffer is full or reaches the given time specified as data transmitting timeout. Serial over Ethernet server's serial communication buffer size is 1K bytes per port.

Optimal data transmitting timeout differs according to your baud rate setting. Please refer to our suggestion as below. Click the "Modify" check box to modify configuration.

	Baud	Rate (bps)	Time Out Settings (x 0.5 ms)
300	~	2400	147
4800	~	9600	62
19200	~	115200	21
230400	~	921600	88
		🔲 Modify	

Time Out : 62

x 0.5 ms

Note:

This settings are used to avoid the Time-out forced by serial applications when the data transfers are happening at slower rates (Eg. Text file transfer through Hyper Terminal application).

C. Baud Rate: (Default = 9600 bps)

Serial over Ethernet server supports baud rate setting from 50 bps to 921.6 Kbps. Please refer to Chapter 3, baud rate settings, for more information.

Baud rate	9600	-	Flow control	None	-
Parity	None	-	Interface	RS-232	•
Data bits	8	•			
Stop bits	1	•			

D. Parity: (Default = None)

Serial over Ethernet server supports parity setting including None, Even, Odd, Space, and Mark.

E. Data bits: (Default = 8 bits)

Serial over Ethernet server supports data bits setting from 5 to 8 bit.

F. Stop bits: (Default = 1 bit)

Serial over Ethernet server supports stop bits setting 1, 1.5 or 2 bits. Stop bits will be set to 1.5 when Data bits is set to 5 bits.

G. Flow Control: (Default = None)

Serial over Ethernet server supports flow control setting including None, Hardware, Xon/Xoff.

Note:

Check the serial communication parameters in your Serial Device's user's manual. You should set up Serial over Ethernet server's serial parameters with the same communication parameters used by your serial devices.

H. Interface: (Default = RS-232)

Serial over Ethernet servers support kinds of models, including pure RS-232, pure RS-422/485 or 3-in-1 RS-232/422/485 interfaces. It depends on what kind of product you bought. You can not select RS-232 or RS-422/485 serial interfaces in this selection. The result of selected just for Sever or Port Monitor display using only.

Note:

RS-232, RS-422, or RS-485 interface is made by hardware structures, and you can not choose it by SLAN Utility software configuration.

• Password:

Users can configure password settings in this page.

Basic Settings IP Settings	Port Setting:	Password	
Modify	L		
🔽 Enable Pass	sword		
Modify			
New Password			
Cofirm Password			

A. Enable Password: (Default = Enable)

Enable:	Serial over Ethernet server settings can not configure without password protection.
Disable:	Serial over Ethernet server can be accessed and configured by anyone who connects in. In this case, the SLAN will not have password protection.

B. Change Password:

Click the "Modify" check box to change new password. You can input maximum 7 characters both in "New Password" and "Confirm Password" boxes.

Modify	жжж
New Password Cofirm Password	***
Cotlim PassWord	

Note:

If you forget the password, the ONLY way to configure Serial over Ethernet server is by using Console mode to "Load Factory Default." Please refer to Chapter 3, forget password section, for more information.

• Upgrade Firmware

Please input the password to unlock the Serial over Ethernet server first, then right click on a specific the cursor over the configuration row and select the Upgrade Firmware function to start upgrading the firmware.

😭 SLAN Utility						
Fil <u>e F</u> unction <u>S</u> erver Manager <u>V</u> ie	w <u>H</u> elp					
- 11		Server	Manager - Found 1	Devi	ce(s)	
	No	Model	MAC Address	IP	Address	Status
Server Manager	1	SLAN4S	0-90-e8-9-c9-41		168.110.16 Search Devices	Unlocked
					<u>A</u> dd with IP Addr	ess
Server Monitor				滋	Locate	
E4				ę	<u>U</u> nlock	
				X	<u>C</u> onfigur	
Port Monitor					Custom <u>T</u> elnet	
				U	Upgrade Firmwar	
Port Mapping				1	Export Configura	tion

Download the latest firmware from your vendor website and click "Browser" to select correct firmware "**.hex**" file. Click "Transfer" to upgrade Serial over Ethernet server to the latest firmware version.

Select File	
Give File Path	
C:\23Sep_4S.hex	Browse
	Iransfer Cancel

Users can check the progress of firmware upgrading process in status column. Please be patient of Serial over Ethernet server upgrading process.

Firmw	are Upgrade S	tatus				<
	IP Address	GUI PortNo	File name	Status		
	192.168.110	1239	23Sep_4S	Uploading - 14%		
	-					
Proce	essing Please Wai	t			X Cancel	

• Export / Import Configuration

Please input the password to unlock the Serial over Ethernet server first, then right click on a specific the cursor over the configuration row and select the Export or Import Configuration function to start exporting or importing the configuration text file.

• Export Configuration:

This function is used to create a text file saving the current configuration of one particular Serial over Ethernet server. It can be saved as Cfgfile text file for quick usage on next iteration.

File Function Server Manager View	Help					
		Server	Manager - Found 1	Devi	ce(s)	
	No	Model	MAC Address	IP	Address	Status
Server Manager	1	SLAN4S	0-80-4c-2b-55-22		Search Devices	cke
3					<u>A</u> dd with IP Add:	ress
Server Monitor				斑	Locate	
					<u>U</u> nlock	
E				*	<u>C</u> onfigur	
Port Monitor					Custom <u>T</u> elnet	
				u	U <u>p</u> grade Firmwai	re
Port Mapping				Ŷ	Export Configure	No.
				6	Import Configure	ation 15
					Assign IP Addres	s

Browse to give path & file name for configuration to be saved. Click OK to save this Cfgfile text file in your system. Successful export message appears. Click OK to close the same.

Select File	×	SLAN UT	lity 🔀
Give file path		į)	Successfully exported the information !!

• Import Configuration:

This function is used to import one particular Serial over Ethernet server's configuration from the text file into one or more of the same model Serial over Ethernet server. To import a configuration, please select the target Cfgfile text file that user exported before.

1		Server	Manager - Found 1	Device(s)	
	No	Model	MAC Address	IP Address	Status
Server Manager	1	SLAN4S	0-80-4c-2b-55-22		ke
3				Add with IP Add	dress
Server Monitor					
				Unlock	
				🛠 Configur	
Port Monitor				Custom <u>T</u> elnet	
				U Upgrade Firmwa	are
Port Mapping				Export Configu	ration
Tort Mapping				Import Configu	nation N

Configuration window appears, click on Port Settings page and enable Modify option. Now holding down the Ctrl key to select multiple ports then click on OK button to import the configuration settings.

Port	Alias	Settings	TimeOut
	alsp1	9600bps,8-bit,None,1-bit,None,RS-232	62
2	alsp2 alsp3	9600bps,8-bit,None,1-bit,None,RS-232 9600bps,8-bit,None,1-bit,None,RS-232	62 62
í	alsp4	9600bps,8-bit,None,1-bit,None,RS-232	62
			Settings
			Dermigs

• Assign IP Address

Please input the password to unlock the Serial over Ethernet server first, then right click on a specific the cursor over the configuration row and select the Assign IP Address function to assign any specific IP address of choice.

ïl <u>e F</u> unction	Server Manager	View	<u>H</u> elp					
		<u> </u>	2.4	Server	Manager - Found 1	1 Devi	ce(s)	
<u>-</u>			No	Model	MAC Address	IP	Address	Status
Server l	Manager		1	SLAN4S	0-80-4c-2b-55-22		Search Devices	cke
	D						<u>A</u> dd with IP Address	
7	- <u></u>	- I-				*	<u>L</u> ocate	
Server	Monitor					9	<u>U</u> nlock	
Ę						*	<u>C</u> onfigur	
Port M	lonitor					-	Custom <u>T</u> elnet	
						u	U <u>p</u> grade Firmware	
	apping					e	Export Configuration	
FOILM	ahhnis					S	Import Configuration	
							<u>A</u> ssign IP Address	
	Address port						Load <u>F</u> actory Defaults	. V.

Select one Serial over Ethernet server and click "Assign IP Sequentially" in Assign IP windows. When Add Device window appears, please input the new IP address & Click OK

Assign IP			Add Device	×
	MAC Address 0-80-4c-2b-55-22	IP Address 192.168.110.16	Input IP Address	
	Assign IP Sequential OK Canc			

This Serial over Ethernet sever will be located with changed IP address now.

	Server M	anager - Found 1	Device(s)	
No	Model	MAC Address	IP Address	Status
1	SLAN4S	0-80-4c-2b-55-22	192.168.0.152	Unlocked

• Load Factory Defaults

Please input the password to unlock the Serial over Ethernet server first, then right click on a specific the cursor over the configuration row and select the Load Factory Defaults function to restore factory default settings.

l <u>e Function S</u> erver Manager <u>V</u>	jew <u>H</u> elp					
		Server	Manager - Found 1	1 Devi	ce(s)	
	No	Model	MAC Address	IF	P Address	Status
Server Manager	1	SLAN4S	0-80-4c-2b-55-22		Search Devices	nckei
					<u>A</u> dd with IP Address	
				*	Locate	
Server Monitor					Unlock	
				manana	Configur	
Port Monitor				-	Custom <u>T</u> elnet	
				U	U <u>p</u> grade Firmware	
Fort Mapping				1	Export Configuration	
				÷	Import Configuration	
				_	<u>A</u> ssign IP Address	
Auto IP Address Report					Load <u>Factory</u> Defaults	

Note:

Remember to export the configuration file using SLAN Utility when you finish the configuration. By using the Import Configuration function of SLAN Utility, your configuration can be re-loaded into Serial over Ethernet services after using "Load Factory Defaults".

Note:

Modify any configuration, you must first click in the modify box to activate the parameter setting box.



Custom Telnet

Custom Telnet is implemented as part of SLAN Utility GUI & the same can be accessed. Please input the password to unlock the Serial over Ethernet server first, then right click on a specific the cursor over the configuration row and select the Custom Telnet function to configure Serial over Ethernet server settings.

il <u>e F</u> unction <u>S</u> erver Manager <u>V</u> i	ew <u>H</u> elp				
		Server	Manager - Found 1	Device(s)	
	No	Model	MAC Address	IP Address	Status
Server Manager	1.0000000000000000000000000000000000000	SLAN4S	0-80-4c-2b-55-22	Search Devices	'' 'ocke
	-			Add with IP Address	
Server Monitor				Locate	
				Unlock	
				🛠 Configur	
Port Monitor				Custom Ielnet	
				Upgrade Firmware	
Port Mapping				Export Configuration	

When custom telnet console opens, entry the password and press enter.

C:\WINDOWS\CustomTelnet.exe	_ 🗆 🗙
Password :	

Custom Telnet main menu will show up as below, after password approved.

C:\WINDOWS\Custom	[elnet.exe	- 🗆 🗙
Serial No	: 0:80:4c:2b:55:22	
< <main menu="">> (1) Network Sett; (2) Serial Settin (3) Monitor (4) Ping (5) Change Passwe (6) Load Factory (0) Uiew Setting; (r) Restart (q) Quit</main>	ngs ord Defaults	
Key in your selection	on: _	

• Network Settings:

Press "1" in the main menu, and you can entry the network settings, including IP address, Netmask, Gateway, and IP configuration.



Press "V" in the main network settings menu, and you can view all network settings of Serial over Ethernet server.



Press "1" in the main network settings menu, and you can set IP Address.

Press "2" in the main network settings menu, and you can set Netmask.

Press "3" in the main network settings menu, and you can set Gateway.

Press "4" in the main network settings menu, and you can switch between Static IP and DHCP mode.

Press "q" in the main network settings menu, and you can back to the custom telnet main menu.

• Serial Settings:

Press "2" in the main menu, and you can entry the each serial port's settings, including baud rate, data bit, stop, parity, and flow control.



Press "V" in the serial port settings menu, and you can view settings.



Press "q" in the menu, and you can back to the custom telnet main menu. 5-25

• Monitor:

Press "3" in the main menu, and you can monitor the status of Serial over Ethernet server or serial port.



Press "1" to entry Device Network status monitor.

C:\WINDOW	SVCustom Telnet.exe		- 🗆 🗙
Press any ke	y to exit		
Port	IP	ConnectionState	
1234	192.168.0.153	Established	
1235	192.168.0.153	Established	
0	0.0.0.0	Closed	
0	0.0.0	Closed	

Press "2" to entry Port line status monitor.

_	NDOWS\CustomTelne			
rress an	y key to exit .	••		
Port	TotalTxCnt	TotalRxCnt	DSR	
SP1	114574	116967	ON	
SP2	118340	113091	ON	
SP3	Ø	Ø	OFF	
SP4	Ø	6	OFF	

Press "3" to entry Port settings monitor.

C.inii	IDOWS\CustomTeln	ICL.CAC					
Press an	y key to exit						
Port	BaudRate	Bits	Stop	Parity	RTS/CTS	XON/XOFF	
1	9600	8	1	None	ON	None	
2	9600	8	1	None	ON	None	
3	9600	8	1	None	OFF	None	
4	9600	8	1	None	OFF	None	

Press "q" in the menu, and you can back to the custom telnet main menu.

• Ping:

Press "4" in the main menu, and you can check (pin) with any PC or Serial over Ethernet Server under the same subnet.



• Change Password:

Press "5" in the main menu, and you can change password.



Please entry "Old Password", "New Password", and "Retype Password".

• Load Factory Defaults:

Press "6" in the main menu, and you can load factory default settings.

• View Settings:

Press "v" in the main menu, and you can load factory default settings.

C:\WINDOWS\Custon	Telnet.exe	_ 🗆 🗙
Key in your select:	.on: v	▲
IP address	: 192.168.110.16	
Netmask	: 255.255.255.0	
Gateway	: 192.168.110.254	· · · · · · · · · · · · · · · · · · ·
IP Configuration	: Static	
Press any key to co Port 1	ntinue	
Baud rate	: 9600	
Data bits	: 8	
Stop bits	: 1	
Parity	: None	
Flow control	: None	
Interface	: RS232	
Press any key to c	intinue	

• Restart:

Press "r" in the main menu, and you can restart Serial over Ethernet Server.



• Quit:

Press "q" in the main menu, and you can quit custom telnet function.

Server Monitor

Server Monitor is used to monitor one or more of the same model Serial over Ethernet servers' status, including Alive, IP Address, Model, MAC Address, and COM number.



Add Devices

The Add Devices function is used to locate all Serial over Ethernet servers that are connected to the same subnet as your computer by broadcast or specify IP address features. Place the cursor over the configuration row, and right click the Add Devices function.

l <u>e F</u> unction Server <u>M</u> onitor <u>V</u> ie	w <u>H</u> elp					
_8			Serve	er Monito	r Stopped	
	No	Alive	IP Addr	ess	Model	MAC Address
Server Manager						
			A	<u>A</u> dd Device		
				<u>R</u> emove Devic	:e 1/2	
Server Monitor				<u>L</u> oad Configu	red Ports	
			*	Settings		
Port Monitor				24		

• Broadcast Search:

Press "Search" button and the Scan SLANs window will open and display the Serial over Ethernet servers in the same subnet.

No	Model	MAC Address	IP Address
7 1	SLAN4S	0-80-4c-2b-55-22	192.168.110.16

• Specify IP address:

Select "Add Manually" option to start specifies IP address process. Please input IP address and select device name, then press "OK" to continue.

IP Address	192 . 168 . 110 . 16
Device name	SLAN4S
vailable ports	4S
	Ok Cancel

Device name depends on how many ports Serial over Ethernet server equips, such that SLAN**4S** represents 4 serial ports.

Load Configured Ports

Users can entry "Load Configured Ports" process to reload the pervious Serial over Ethernet servers' locations. Please place the cursor over the configuration row, and right click the Load Configured Port function.

l <u>e F</u> unction Server <u>M</u> onitor <u>V</u> iew	<u>H</u> elp				
_8			Server Monitor St	opped	
	No	Alive	IP Address	Model	MAC Addres
Server Manager				🔍 <u>A</u> dd De	vice
				Remove	Device
Server Monitor				Load C	onfigured Ports
				13 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0

SLAN Utility File Function Server Monitor	<u>Y</u> iew <u>H</u> elp				
E			Server Monitor St	opped	
	No	Alive	IP Address	Model	MAC Address
	1	Not Alive	192.168.110.184	SLAN2S	00:00:00:00:00
Server Manager	2	Not Alive	192.168.110.202	SLANPR08S	00:00:00:00:00
and the second					
Server Monitor					

Settings

Serial over Ethernet servers list will now appear on the Server Monitor screen. Please right click the SLAN and select Settings.

il <u>e F</u> unction Server <u>M</u> onitor <u>V</u> ie	w <u>H</u> elp				
			Server Monito	or Stopped	
	No	Alive	IP Address	Model	MAC Address
Server Manager	1	Not Alive	192.168.110.202	R	dd Device G emove Device pad Configured Ports
Server Monitor				* 50	ttings

• Monitoring items:

Users can select monitoring items of Serial over Ethernet servers, including Alive check, IP Address, Model, MAC address, and COM number.

Moni	itor Settings				
			×		
	Monitor Items	General Settings	Advanced Se	ttings	
	De-selecte	ed Items		Selected Items	
	COM Num LPT Numb	nber ber	>	Alive IP Address Model MAC Address	•
	, Load De	fault		ј Ганинициј	
				Ok	Cancel



• General Settings:

Please select "Refresh Rate" in this page. You can enter the parameter range form 3 to 99 seconds and the default is 3 seconds.

Moni	tor Settings				×
1	Monitor Items	General Settings	Advanced Settings		
			3		
		Refresh Rate		Second(s)	
				Ok Cancel	

• Advanced Settings:

Please select Display warning message or Play the warning music in WAV format when a new event occurs in advanced settings page. New event means one of the Serial over Ethernet server in the monitor is "Alive" or "Not Alive," or has lost connection with the Monitor program.

Monitor Settings	×
Monitor Items General Settings Advanced Settings	
Ok Cancel	

When one of the Serial over Ethernet server loses connection with the Monitor program, a warning alert will display automatically. The warning music will be played at the same time.

Alerts : New Monitor Event: 1 Event(s)	
New Monitor Levent. 1 Event(s) Monitor Message List contains complete information	
24-10-2005, 21:29:46, SLAN, SLAN2S, (192.168.110.202), Disconnected	



After setting all monitoring items of Serial over Ethernet servers, right click the SLAN and select Go to start monitoring.

	· · · · · · · · · · · · · · · · · · ·		Server Monitor S	topped	0	
	No	Alive	IP Address	М	odel	MAC Addres
Server Manager	1	Not Alive	192.168.110.16		<u>A</u> dd Device <u>R</u> emove Dev <u>L</u> oad Config <u>S</u> ettings	
Port Monitor					<u>G</u> o Stop	

In the Monitor screen, you can see the "Not Alive" Serial over Ethernet server is marked with red color. Blue color to represent that the monitor is active and red color to represent that the item being monitored is disconnected.

SLAN Utility File Function Server Monitor	<u>V</u> iew <u>H</u> elp				
[]		Se	rver Monitoring - 2	Device(s)	
	No	Alive	IP Address	Model	MAC Address
	1	Alive	192.168.110.202	SLAN2S	0:a0:b:3:55:ac
Server Manager	2	Not Alive	192.168.110.184	SLAN2S	00:00:00:00:00:
Server Monitor					

If the Serial over Ethernet server gets connected or disconnected, a warning message will be displayed to remind users.

Alerts :	
New Monitor Event: 1 Event(s)	
Monitor Message List contains complete information	
24-10-2005, 21:22:31, SLAN, SLAN2S, (192.168.110.202), Connected	

Note:

Be sure to entry "Go" procedure to start Server Monitor function.

Port Monitor

Port Monitor is used to monitor COM ports' statuses, including Model, Alive Check, IP Address, Model, MAC Address, and COM number, Tx/RX Thought......and so on.



Add Devices

The Add Devices function is used to locate all Serial over Ethernet servers that are connected to the same subnet as your computer by broadcast or specify IP address features. Place the cursor over the configuration row, and right click the Add Devices function.

File Function Port Monitor View	<u>H</u> elp				
1			Port Monitoring	Stopped	
	No	Model	MAC Address	IP Address	Port
Server Manager				🔍 <u>A</u> dd Device 📐	
				Remove Device	
Server Monitor				Load Configured Port	s

• Broadcast Search:

Press "Search" button and the Scan SLANs window will open and display the Serial over Ethernet servers in the same subnet.

No	Model	MAC Address	IP Address
1	SLAN4S	0-80-4c-2b-55-22	192.168.110.16

• Specify IP address:

Select "Add Manually" option to start specifies IP address process. Please input IP address and select device name, then press "OK" to continue.

IP Address	192 . 168 . 110 . 16
Device name	SLAN4S
Available ports	4S
	Ok Cancel

Device name depends on how many ports Serial over Ethernet server equips, such that SLAN**4S** represents 4 serial ports.

Load Configured Ports

Users can entry "Load Configured Ports" process to reload the pervious COM ports' locations. Please place the cursor over the configuration row, and right click the Load Configured Port function.

<u>Function</u> Port Monitor <u>View</u>	w <u>H</u> elp				
_==			Port Monitoring S	Stopped	
	No	Model	MAC Address	IP Address	Port
Server Manager				Add Device	
3	-			<u>R</u> emove Dev	ice
				Load Config	ured Ports
Server Monitor	-			Settings	- VZ

Function Port Monitor	<u>/</u> iew <u>H</u> elp				
目			Port Monitoring S	Stopped	
	No	Model	MAC Address	IP Address	Port
Server Manager		SLAN2S	00:00:00:00:00:00	192.168.110.184	1
Server Manager	2	SLAN2S	00:00:00:00:00:00	192.168.110.184	2
	I 3	SLANPR08S	00:00:00:00:00:00	192.168.110.202	1
	☑ 4	SLANPRO8S	00:00:00:00:00:00	192.168.110.202	2
	5	SLANPRO8S	00:00:00:00:00:00	192.168.110.202	3
Server Monitor	⊡ 6	SLANPRO8S	00:00:00:00:00:00	192.168.110.202	4
	7	SLANPR08S	00:00:00:00:00:00	192.168.110.202	5
	8	SLANPRO8S	00:00:00:00:00:00	192.168.110.202	6
	9	SLANPR08S	00:00:00:00:00:00	192.168.110.202	7
Port Monitor	10	SLANPRO8S	00:00:00:00:00:00	192.168.110.202	8
Crockel Crock					

Settings

Serial over Ethernet servers' COM port list will now appear on the Port Monitor screen. Please right click the SLAN and select Settings.

il <u>e F</u> unction <u>P</u> ort Monitor <u>V</u> iew	<u>H</u> elp				
			Port Monitoring S	topped	
	No	Model	MAC Address	IP Address	Port
Server Manager		SLAN2S	0-a0-b-3-55-ac	19	-
perver montager	2	SLAN2S	0-a0-b-3-55-ac	1 Add Device	
				<u>R</u> emove Device	
				I.J.C.	Dente
Server Monitor				Load Configured	FOITS
11 27				Settings	N
					17
				Go	80

• Monitoring items:

Users can select monitoring items of COM port, including Model, MAC address, IP Address, COM port number, OP Mode, Alive check, Connection Status, Remote IP, Serial Parameter, Line Status, Tx/Rx after Connection, Tx/Rx after amount, Tx/Rx Interval Throughput, and Tx/Rx Throughput.

Port	Monitor Settings						×
Port	Monitor Items De-selecte Conn Stat Remote IF Serial Par Line Statu Tx/Rx afte Tx/Rx Afte Tx/Rx Int COM Num LPT Numb	ameter s er Conn er mon ou v Throu ber er	Advanced Set	tings Selected Items Model MAC Address IP Address Port OP Mode Alive		•	
	Load De						
					Ok	Cancel	

Up and down buttons are used to change the order of items under Monitor display screen.

Please read the detail of these statistic are calculated as below:

Tx/Rx after Connection:

This is the cumulative data count processed on particular TCP port from the time Monitoring has started. If monitoring is stopped and started then only this value will be reset. A unit is Bytes.

Tx/Rx after Mon :

Indicates the amount of data transferred in the polling interval time. The count will become zero if there is no data transfer. A unit is Bytes.

Tx/Rx Interval Throughput :

This is the interval throughput calculated on every refresh rate setting of GUI. Tx/Rx Interval throughput = ((Tx/Rx after Mon) * (DataBits + StopBits + 2)) /Polling Interval. Unit to be bits / sec.

This count resets to zero if there is no FT.

Tx/Rx Throughput :

This is the average throughput calculated based on the total data transferred from the beginning of monitoring and the total time taken.

Tx/Rx throughput =((Tx Rx after connection)* (DataBits + StopBits + 2))/ Cumulative Polling Interval time. Units is Bits per second.

Since it is average, the throughput varies (reduces) when there is no file transfer.

• General Settings:

Please select "Refresh Rate" in this page. You can enter the parameter range form 3 to 99 seconds and the default is 3 seconds.

Port Monitor Settin	<u>3</u> 8		×
Monitor Item	s General Settings Advanced Set Refresh Rate ³	ttings Second(s)	
		Ok Cancel	

• Advanced Settings:

Please select Display warning message or Play the warning music in WAV format when a new event occurs in advanced settings page.

Port I	Monitor Settings	×
	Monitor Items General Settings Advanced Settings Image: Obsplay warning message for new event Image: Obsplay warning music for new event	
	Ok Cancel	



After setting all monitoring items of Serial over Ethernet servers, right click the SLAN and select Go to start monitoring.

<u>e Function Port Monitor ⊻iev</u>	/ <u>H</u> elp				
_ <u> </u>			Port Monitoring	Stopped	
	No	Model	MAC Address	IP Address	Port
Server Manager		SLAN2S	0:a0:b:3:55:ac		1
perver mengger	2	SLAN2S	0:a0:b:3:55:ac	Add Device	2
3				<u>R</u> emove Device	-
	-			1 10 5 10 1	
Server Monitor				Load Configured Ports	
				Settings	
8				Go	
Port Monitor				Stop	1

In the Monitor screen, you can see the "Not Alive" Serial over Ethernet servers' COM ports are marked with red color. Blue color to represent that the monitor is active and red one is disconnected.

<u>E</u> Function Port Monitor	<u>/iew H</u> elp				
[]		F	Port Monitoring - 1	0 Port(s)	
	No	Model	MAC Address	IP Address	Port
Server Manager	☑ 1	SLAN2S	0:a0:b:3:55:ac	192.168.110.202	1
Server Manager	2	SLAN2S	0:a0:b:3:55:ac	192.168.110.202	2
3	3	SLANPRO8S	00:00:00:00:00:00	192.168.110.88	1
	☑ 4	SLANPRO8S	00:00:00:00:00:00	192.168.110.88	2
Server Monitor	5	SLANPRO8S	00:00:00:00:00:00	192.168.110.88	3
Server Montor	6	SLANPRO8S	00:00:00:00:00:00	192.168.110.88	4
	7	SLANPRO8S	00:00:00:00:00:00	192.168.110.88	5
	8	SLANPRO8S	00:00:00:00:00:00	192.168.110.88	6
	9	SLANPRO8S	00:00:00:00:00:00	192.168.110.88	7
Port Monitor	10	SLANPRO8S	00:00:00:00:00:00	192.168.110.88	8

If the COM port gets connected or disconnected, a warning message will be displayed to remind users.

art	
	Alerts :
	New Monitor Event: 4 Event(s)
	Monitor Message List contains complete information
2	2-10-2005, 11:30:58, SLAN, SLAN2S, (192.168.110.202), PortNo: 1, alsp1 Disconnected 5-10-2005, 11:30:58, SLAN, SLAN2S, (192.168.110.202), PortNo: 2, alsp2 Disconnected 5-10-2005, 11:31:05, SLAN, SLAN2S, (192.168.110.202), PortNo: 1, alsp1 Connected 5-10-2005, 11:31:05, SLAN, SLAN2S, (192.168.110.202), PortNo: 2, alsp2 Connected
	Close

Note:

5-3 Be sure to entry "Go" procedure to start Port Monitor function.

Port Mapping

The Port Mapping feature allows Windows platform software using standard API calls to be used in an Ethernet application. After port mapping process, the COM port will look like a standard COM port to Windows software used in most applications allowing the software to open a connection with the serial port located anywhere on the LAN.



Add Devices

The Add Devices function is used to locate all Serial over Ethernet servers that are connected to the same subnet as your computer by broadcast or specify IP address features. Place the cursor over the configuration row, and right click the Add Devices function.

l <u>e F</u> unction P <u>o</u> rt Mapping	<u>V</u> iew <u>H</u> elp				
	^		Port Mapping -	0 Port(s)	_
	No	Model	IP Address	TCP Port	COM/LPT Number
Server Manager				-	
				Add Dev	
				Remove	Device V
Server Monitor				Enable	

• Broadcast Search:

Press "Search" button and the Scan SLANs window will open and display the Serial over Ethernet servers in the same subnet.

No	Model	MAC Address	IP Address
1	SLAN2S	0-a0-b-3-55-ac	192.168.110.202
2	SLAN4S	0-80-4c-2b-55-22	192.168.110.188
• Specify IP address:

Select "Add Manually" option to start specifies IP address process. Please input IP address and select device name, then press "OK" to continue.

	Add Manually		
	IP Address	192 . 168 . 110 . 16	
	Device name	SLAN4S	
	Available ports	4S	
		Ok Cancel	
No	ote:		
		pends on how many ports Serial over Ethernet server t SLAN 4S represents 4 serial ports.	

SLAN Utility will show all COM ports in the Port Mapping configuration screen.

COM/LPT Number
COM10
CONTO
COM11
COM10
COM11
COM12
COM13

Port Settings

Users can entry "Port Settings" process to modify COM port's number. Please right click the SLAN and select port settings.

Function Port Mapping ⊻ie	w <u>H</u> elp				
E			Port Mapping - 2	2 Port(s)	
	No	Model	IP Address	TCP Port	COM/LPT Number
Server Manager	2	SLAN2S SLAN2S	192.168.110.202 192.168.110.202		ve Device
Server Monitor				Enable Disabl	e

You can select COM Port number form COM1 to COM255. If this COM port is using now, there is a "in use" message shown.

Port Settings	×
Port Number: 1 Port(s) are Selected 1st Port is port 1234]
Basic Settings	
COM Number LPT Number Auto Enume Selected Por COM10(current)(assigned) COM8(in use) COM9(in use) COM10(current)(assigned) COM11(assigned) COM11(assigned) COM12 COM13 COM14	
Ok Cancel	

Apply Change

After setting all COM ports, right click on the Serial over Ethernet Server and select "Apply Change" to start port mapping function.

Function Port Mapping View	Help				
目			Port Mapping -	6 Port(s)
	No	Model	IP Address	TCP Po	rt COM/LPT Numbe
a	1	SLAN2S	192.168.110.202	1234	COM10
Server Manager	2	SLAN2S	192.168.110.202		Add Device
	3	SLAN4S	192.168.110.188		Had Device
	4	SLAN4S	192.168.110.188		Remove Device
	5	SLAN4S	192.168.110.188		
Server Monitor	6	SLAN4S	192.168.110.188		Enable
				_	Disable
				*	Port Settings
Port Monitor					Apply Change
				-	Discard Change
Port Mapping				A	Export Port Mapping

Please click "OK" to enable port mapping function. After few minutes, system will respond COM port configuration is applied OK. Click "OK" to finish port mapping process.

Information 🛛	SLAN Utility
Do you really want to Apply the Changes ?	COM Port Configuration is applied.OK.
Cancel	ОК

Note:

Be sure to entry "Apply Change" procedure to start port mapping function.

Discard Change

Select "Discard Change" to make SLAN Utility NOT saving the COM Mapping configuration to the host. Right click on the Serial over Ethernet Server and select "Discard Change" to discard all configurations.

<u>Function</u> Port Mapping <u>V</u> iew	Help				
- 21			Port Mapping - 6	6 Port(s)
	No	Model	IP Address	TCP Po	rt COM/LPT Number
	1	SLAN2S	192.168.110.202	1724	COM10
Server Manager	2	SLAN2S	192.168.110.202		Add Device
	3	SLAN4S	192.168.110.188		
	4	SLAN4S	192.168.110.188	1	<u>R</u> emove Device
	5	SLAN4S	192.168.110.188	-	
Server Monitor	6	SLAN4S	192.168.110.188	1	Enable
				1	Disable
				*	Port Settings
Port Monitor					Apply Change
				1	Discard Change
Port Mapping				()	Export Port Mapping

Export / Import Configuration

Please right click on the Serial over Ethernet Server and select the Export or Import Port Mapping function to start exporting or importing the configuration text file.

• Export Configuration:

This function is used to create a text file saving the current configuration of one particular Serial over Ethernet server's COM ports. It can be saved as ini text file for quick usage on next iteration.

😂 s	LAN Utili	ty								\mathbf{X}
Fil <u>e</u>	<u>Function</u>	Port Mapping	<u>V</u> iew	<u>H</u> elp						
		a _				Port Mapping - 6	6 Port	(s)		_
	-			No	Model	IP Address	TCP	Port	COM/LPT Number	
				1	SLAN2S	192.168.110.202	- 10	~ -	0.0114.0	
	Server	Manager		2	SLAN2S	192.168.110.202	۹.,	<u>A</u> dd De	vice	
	_			3	SLAN4S	192.168.110.188				
		0		4	SLAN4S	192.168.110.188		<u>R</u> emov	e Device	
	-	2		5	SLAN4S	192.168.110.188				
	Courses	Monitor		6	SLAN4S	192.168.110.188		Enable		
	Server	MOHIOI					_			
							_	<u>D</u> isable		_
							*	Port <u>S</u> et	ttings	
	Port N	lonitor 					_	Apply (Change	
								Discard	. Change	
							100			_
	Port M	fapping					- 12	Export	Port Mapping	_
	ſ						÷	I <u>m</u> port	Port Mapping	
		2								5

Browse to give path & file name for configuration to be saved. Click OK to save this ini text file in your system. Successful export message appears. Click OK to close the same.

Select File	SLAI	N Utility 🛛 🗙
Give file path	į	Successfully exported the information !!

• Import Configuration:

This function is used to import one particular Serial over Ethernet server's COM port configuration from the text file into one or more of the same model Serial over Ethernet server. To import a configuration, please select the target ini text file that user exported before.

<u>Function</u> Port Mapping <u>V</u>	iew <u>H</u> elp				
_ <u>Ë</u>			Port Mapping - 6	6 Port(s)	
	No	Model	IP Address	TCP Port	COM/LPT Number
a v	1	SLAN2S	192.168.110.202	1234	Add Device
Server Manager	2	SLAN2S	192.168.110.202	1235	Add Device
	3	SLAN4S	192.168.110.188	1234	Remove Device
S	4	SLAN4S	192.168.110.188	1235	Tempte Detice
	5	SLAN4S	192.168.110.188	1236	Enable
Server Monitor	6	SLAN4S	192.168.110.188	1237	TUTT
beiver Monitor					Disable
-				*	Port <u>S</u> ettings
Port Monitor					Apply Change
					Discard Change
Port Mapping				٠	Export Port Mapping
Топтларрыд					Import Port Mapping

Configuration window appears, click on Port Settings page and enable Modify option. Now holding down the Ctrl key to select multiple ports then click on OK button to import the configuration settings.

Note:

Be sure to entry "Apply Change" procedure to start port mapping function.

Auto IP Address Report

Serial over Ethernet Server does not support "Auto IP Address Report". Please skip this function.



Note:

Auto IP Address Report feature is supported by Serial over Ethernet Server Profession version, such as 8, 16, and 32 ports model.

Port Re-Director Driver

This chapter introduces the configuration of Serial over Ethernet Server on Linux based operation system, including Linux 2.4.X (Redhat8, Redhat9), and Linux 2.6.X (Fedora Core 2.0) Kernels.

The following topics covered in this chapter:



- Install Port Re-Director Driver
- Uninstall Port Re-Director Driver

Install Port Re-Director Driver

1. Be sure to login in system as super user (root) firstly. Please insert the CD driver as bound with your SLAN product into your CD/DVD ROM, and copy the Linux wizard file on your PC. Then extract Linux wizard to root folder.

: \ SLAN \ Software \ Linux \

2. Using Terminal and execute ./mosinst in the root folder.



Mossearch:

This will scan the network and gives the output in one readable text file (SocList.txt) with the IP address of the SOC boards.

3. Execute ./mossearch

It will ask for Broadcast IP address of that network which the user will access. The generated file SOCList will have the list of the devices and the corresponding number of serial ports for each of the device.



4. Execute ./ Mosaddsrv

This will add the board with some specific IP address to the configuration file and creates the virtual port mapping for the board.

: ./mosaddsrv <lpaddress> ./mosaddsrv 192.168.110.202

```
root@localhost:~/Version1.3_RH8.0
                                                                          - 🗆 X
<u>File Edit View Terminal Go H</u>elp
SRC/README
                                                                               ٠
SRC/mossearch
[root@localhost Version1.3_RH8.0]# ./mossearch
Enter the Broadcast IP address: ex:192.xxx.xxx.255
192.168.110.255
Searching the network for SOC Boards!!!
SOC board found with address: 192.168.110.202
       Search Completed!!! See SOCList.txt for the details of the SOC boards in
the network:
[root@localhost Version1.3_RH8.0]# ./mosaddsrv 192.168.110.202
Enter 1 for auto configuration, and 0 for manual configuration
1
/dev/VCOMO
           0
                      192.168.110.202 1234
mknod /dev/VCOMO c 34 0
/dev/VCOM1
            1 192.168.110.202 1235
mknod /dev/VCOM1 c 34 1
redir: no process killed
Predir: no process killed
[root@localhost Version1.3_RH8.0]#
```

Following options available:-

1.User have option to configure the device either manual or automatic.In Manual configuration i.e User can configure only a part of ports(like 2 ports in existing available ports).

In Automatic configuration all the ports of the device are configured.

2.If the Device is already configured, it will ask the user to either replace existing board or continue.

mosaddsrv will add the entries in the Serial configuraton file(Com2eth.cfg)

The file Com2eth.cfg will have the entries of the virtual serial ports in the following format

DeviceName	ProcDevice	IPaddress	PortNo
/dev/VCOM0	0	192.168.110.202	1234

Where "/dev/VCOM0" is the Virtual Serial port for Port0 of the board 192.168.110.202 and 1234 is the port Number

5. Execute ./ Mosdelsrv:

Mosdelsrv delete the board with the specified address in the configuration files and also clears the port mapping.

Usage: ./mosdelsrv <IP address> ./mosdelsrv 192.168.110.202

```
✓ root@localhost:~/Version1.3_RH8.0
                                                                            - 🗆 X
<u>File Edit View T</u>erminal <u>Go H</u>elp
[root@localhost Version1.3_RH8.0]# ./mossearch
                                                                                 ٠
Enter the Broadcast IP address: ex:192.xxx.xxx.255
192.168.110.255
Searching the network for SOC Boards!!!
SOC board found with address: 192.168.110.202
        Search Completed!!! See SOCList.txt for the details of the SOC boards in
 the network:
[root@localhost Version1.3_RH8.0]# ./mosaddsrv 192.168.110.202
Enter 1 for auto configuration, and 0 for manual configuration
1
/dev/VCOMO 0
                      192.168.110.202 1234
mknod /dev/VCOMO c 34 0
/dev/VCOM1 1 192.168.110.202 1235
mknod /dev/VCOM1 c 34 1
redir: no process killed
Predir: no process killed
[root@localhost Version1.3_RH8.0]# ./mosdelsrv 192.168.110.202
Predir: no process killed
[root@localhost Version1.3_RH8.0]#
```

The released ports will be made available for the new devices going to be added further.

Uninstall Port Re-Director Driver

1. Execute ./ Mosuninst:

Mosuninst will uninstall the serial and parallel driver from the system. It also removes all the generated files and configuration files.



Note:

- **1.**The Configuration files are automatically generated and they should not be changed manually.
- **2.**To use the serial ports the user is supposed to check the configuration file Com2eth.cfg and select the corresponding virtual ports.

7. Troubleshooting

This chapter shows some problems that user came with usually. Also you can check it if the Serial over Ethernet Server can not work properly in your system after following hardware and software installation steps.

Troubleshooting

1. I can not search any Serial over Ethernet Server in SLAN Utility.



This problem may cause in following reason:

- 1. Please confirm your Serial over Ethernet Server's network setting firstly. Factory default IP is 192.168.1.1, be sure to configure it to match your Ethernet network settings. Please refer to chaper 3, Initial IP Configuration for detail.
- 2. If your PC and Serial over Ethernet Server are in the different subnets, please use "Add with IP Address " function, instead of "Seach Devices" function to access Serial over Ethernet Server.
- 3. Be sure to connect power and Ethernet cable connect to Serial over Ethernet Server properly.
- 2. I can not open COM port after searching and setting all Serial over Ethernet Server.



This problem may cause in following reason:

1. Please confirm Ethernet cables connected both on Serial over Ethernet Server and PC properly.

2. Please execute port mapping function in SLAN Utility. Be sure to execuite "Apply change" procedure to start port mapping function.

Function Port Mapping Vi	ew <u>H</u> elp				
目			Port Mapping - 6	S Port(s)	
	No	Model	IP Address	TCP Port	COM/LPT Number
	1	SLAN2S	192.168.110.202	1234	COM10
Server Manager	2	SLAN2S	192.168.110.202	bbA 🔝	Device
	3	SLAN4S	192.168.110.188		Device
3	4	SLAN4S	192.168.110.188	Ren	nove Device
and the second se	5	SLAN4S	192.168.110.188	<u>11</u> 011	DIC DOILD
C	6	SLAN4S	192.168.110.188	Ena	blo
Server Monitor				12110	010
				Dise	ble
				📯 Port	Settings
Port Monitor				~	Formale
1011101000				Anr	ly Change
				Disc	ard Change
Port Mapping				Exp	ort Port Mapping

Please click "OK" to enable port mapping function. After few minutes, system will respond COM port configuration is applied OK. Click "OK" to finish port mapping process.

Information 🔀	SLAN Utility
Do you really want to Apply the Changes?	COM Port Configuration is applied.OK.
Cancel	С

After mapping port fuction starting, you can check the "Redirector Status" windows pup-up when open assigned COM port.



3. When apply change completed under port mapping fu nction, it is lunch a fail message windows as blow.



A: This issue resolved by updating COM number of one of the SLAN port to some un-used COM port, under Port Mapping function. Please change the COM port number to another one to solve this problem.

Port conflict was observed in Registry under Serial COM which was not reported in Windows COMDB. Such issue would occur when ever Serial applications don't report the COM numbers claimed by them to Windows COMDB.

Port Settings	×
Port Number: 1 Port(s) are Selected 1st Port is port 1234	
Basic Settings	
COM Number LPT Number Auto Enumer Selected Por COM10(current)(assigned) COM8(in use) COM9(in use) COM10(current)(assigned) COM10(current)(assigned) COM11 (assigned) COM12 COM13 COM14	
Ok Cancel	

How to check COM Number conflicts :

In registry windows maintains the installed COM port information at two places, which is as mentioned below.

HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\SERIALCOMM

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\COM Name Arbiter

When ever some one claims a COM port, they have to make entry in COMDB under COM Name Arbiter. If some one has an entry under SERIALCOMM and not have any entry under COM Name Arbiter then that port can cause conflict to other softwares when they try to occupy the port by refering to COMDB.

4. I can not configure Serial over Ethernet Server through console port.

Be sure to use Straight-Through RS-232 Serial cable connect between Serial over Ethenr Server and PC' COM port. Please refer to chapter 8, cable wiring section for detail. Remembering, always set baud rate at 57600 bpse level when access console port.

5. Can I use telnet or web console to access Serial over Ethernet Server.

No, Serial over Ethenet Server only supports Windows SLAN Utility and serial console for configuration.

6. How many Serial over Ethernet Servers that I can configure in the same SLAN Utility windows.

There is no limitation for users access and configure Serial over Ethenet Servers, even different SLAN models or different interface.

8. Appendix

This chapter shows Serial over Ethernet Server core technologies and shows you how to contact with us for information about this and other products.

In this appendix, we cover the following topics.

- Core Technologies
- Cable Wiring Diagrams
- Safety Guide
- Contract Information

Core Technologies

Our R&D team is experienced and expert at many advanced technologies needed for manufacturing highly- reliable data communication products. This Serial over Ethernet Server equips many hardware and software features for users easily equipping in kinds of critical or harsh factory and industrial environment. It's also the best solution for all of industrial communication and automation application.

• High Performance & Intelligent ASIC SUN8989

SUN8989 is a high performance and intelligent Serial over Ethernet SoC (System on Chip) controller. It integrates 10/100 Mbps Ethernet controller with auto-detect features. Maximum transmission bandwidth ups to 1 Mbps shared by each serial port and built-in watchdog timer to prevent system lockup. It's not only for full compatibility with Microsoft OS series and Linux, but also allowing us to offer complete support for driver and technological change on the Serial RS-232 / 422 / 485.

RS-422/485 Auto Identify & Switch Technology



Serial over Ethernet Server has built-in RS-422/485 Auto Identify & Switch technology. It can automatically identify the state of RS-422 full-duplex or RS-485 half-duplex and control the data transceiver and receiver wires at the same port without selecting jumpers or switches anymore. It's more convenient for users to avoid shutting down Serial over Ethernet Server for jumpers or switches setting.

♦ RS-485 ARSC[™] Technology



Due to the limitation of traditional RS-485 two wires half-duplex communication, system must determine when to switch the transmitter on and off. There is only one node can be switch on and off at any given time by software. ARSC[™] (Auto RTS Signal Control) technology can identify the status of data transceiver or receiver and send RTS signal automatically, instead of using software/hardware to control the transmitter.

RS-422/485 Serial over Ethernet Server has built-in ARSC[™] technology now. System can manage the RS-485 ports without writing extra code to control the half-duplex protocol by using ARSC[™] technology.



• Termination Resistors Building In

When an electrical signal travels through two different resistance junctions in a transmission line, the impedance mismatch will sometimes cause signal reflection. Signal reflection causes signal distortion, which in turn contributes to communication errors. The solution to this problem is to establish the same impedance at the line ends as in the line itself by terminating them with resistors. It is normally sufficient when the value of the termination resistor equals the characteristic impedance of the transmission line. Serial over Ethernet Server has built-in in termination resistors to prevent those problems.

• Optical Isolation Protection (Optional)



The ground loop is a common problem in many industrial environments, especially in the state of ground voltage levels differ between connected devices in the type of critical or harsh factory environment when transmission line is long. Communications devices connected by long cables may be damaged by the mismatch between ground voltage levels at the two ends of the wire. Optical isolation uses photo cells at both ends of the line to isolate the devices' sensitive components from this type of electrical damage. PC/104 serial board provides 2.5KV optical isolation for power and signals to eliminate this kind of problem.

Surge Protection (Optional)



Surges are high amplitude electrical pulses lasting only several millionths of a second in duration. They can be caused by heavy-duty equipment, power lines, short circuits, or large motors. A surge suppressor has the ability to effectively absorb the high energy in an extremely short period of time, preventing the connected devices from damage. To eliminate this problem, we provide the embedded 600W surge protection for all signals.

Cable Wiring Diagram

Please refer to the following illustration for Straight-Through and Cross-Over serial and Ethernet cable.

• Serial Cable

Please refer to the following illustration for Straight-Through and Cross-Over Serial cable.

• Cross-Over Serial cable:

A. RS-232



DB9 Female

DB9 Female



Pin NO	Signal
1	TxD-
2	TxD+
3	RxD+
4	RxD-
5	GND
6	RTS-
7	RTS+
8	CTS+
9	CTS-

1

Signal	Pin NO
TxD-	1
TxD+	2
RxD+	3
RxD-	4
GND	5
RTS-	6
RTS+	7
CTS+	8
CTS-	9



Pin NO	Signal	Signal	Pin NO
1	Data-	 Data-	1
2	Data+	 Data+	2
3	-	-	3
4	-	-	4
5	GND	 GND	5
6	RTS-	RTS-	6
7	RTS+	RTS+	7
8	CTS+	CTS+	8
9	CTS-	CTS-	9

• Straight-Through Serial cable:

A. RS-232

DB9 Female

DB9 Female





Pin NO	Signal
1	DCD
2	TxD
3	RxD
4	DTR
5	GND
	DSR
7	RTS
8	CTS
9	RI

Signal	Pin NO
DCD	1
TxD	2
RxD	3
DTR	4
GND	5
DSR	6
RTS	7
CTS	8
RI	9
	DCD TxD RxD DTR GND DSR RTS CTS

Ethernet Cable

Please refer to the following illustration for Straight-Through and Cross-Over Ethernet cable.



Safety Guide

- Read and follow all instructions and warnings provided.
- Save these instructions for future use.
- When service or replacement of parts is required, ensure work is done by a qualified technician.
- Do not use this unit near water or in a rainy/moist environment.
- Use supplied cables only.
- Do not attempt to service this product yourself. Doing so will expose you to various hazards including dangerous voltage.
- Pay attention to power using.
- Please use factory default power adapter to prevent from damage.
- Disconnect the power cable (pull plug) in the following situations :
 - * In the event of service.
 - * Power cable/plug becomes damaged.
 - * Unit is exposed to excess moisture/rain
 - * Unit has been dropped.
 - * Unit is being cleaned.
- Unit must be used with adult supervision at all times. Children must not be allowed to handle any of the cables.
- Never insert any objects other than CDs in the trays.
- Never insert any objects through ventilation holes.

Remember !! Any electrical equipment is hazardous if handled improperly.

Contract Information

Customer satisfaction is our number one concern, and to ensure that customers receive the full benefit of our products, SUNIX services has been set up to provide technical support, driver updates, product information, and user's manual updates.

The following services are provided

E-mail for technical support

World Wide Web (WWW) Site for product information:http://www.sunix.com.tw