



# ISCOM4300 Configuration Guide

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# 1. Preface

## 1.1. Audience

This guide is for experienced network administrators who are responsible for configuring and maintaining ISCOM4300, and it provides a systematic instruction of modules and features of ISCOM4300, as well as the configuration guide for each module.

## 1.2. Organization

There are mainly 7 chapters in this guide:

Chapter 2: **Abstract**

Describe the function features of ISCOM4300

Chapter 3: **How to use command-line**

Describe how to configure the device through command-line and the application features

Chapter 4: **System commands configuration**

Describe system command function of ISCOM4300 and how to configure.

Chapter 5: **Configuring network protocols**

Describe network protocol function of ISCOM4300 and how to configure.

Chapter 6: **Configuring Ethernet interfaces**

Describe Ethernet interface function of ISCOM4300 and how to configure.

Chapter 7: **Configuring SDH interfaces**

Describe SDH interface function of ISCOM4300 and how to configure.

Chapter 8: **Configuring VCG services**

Describe VCG function of ISCOM4300 and how to configure.

Chapter 9: **Example of application configuration**

Describe examples of how to configure ISCOM4300.

## 1.3. Definitions

Describe the definitions of professional terminologies and the original words of the alphabet abbreviations

EOS	Ethernet over SDH
GFP	Generic Framing Procedure
LAPS	Link Access Procedure--SDH
LCAS	Link Capacity Adjustment Scheme
PPP	Point-to-Point Protocol
VCG	Virtual Concatenation Group

## 1.4. References

- 1, ISCOM series Ethernet switches
- 2, ISCOM4124 Command Guide version2.3

## 2. Abstract

ISCOM4300 is an SDH access device which supports Ethernet services, and is developed as an edge access device for the purpose of full use of the resource of SDH networks. At present, it only provides one access method: Ethernet services and supports service level division. ISCOM4300 can aggregate the user data flows and converge them to SDH data flows and access to SDH transmission networks. You can access ISCOM4300 via the device's serial port RS232 or network management interface: Telnet, and it also provides standard SNMP management interface and can be field upgraded.

There are two kinds of service interfaces of ISCOM4300: 16 Ethernet interfaces of 10/100M and 2 SDH interfaces of 155M (1+1 protection mode or 2 separated work mode). And it supports LCAS protocol, which can provide a flexible and hitless increase or decrease of the payload bandwidth. Encapsulation modes of EOS include GFP, LAPS and PPP. There are at most 64 VCs in a VCG which corresponds Ethernet interface one to one, and each VC supports both VC3 (low order) and VC12.

### 3. How to use command-line

#### 3.1. Requirements of software and hardware

Operation environment of hardware: platform of ISCOM4300,  
Computer serial interface;

Operation environment of software: WIN98/WIN2000/WINDOWS XP

#### 3.2. Modes of command-line

Mode	Mode description	Access	Prompt
User EXEC	Configuring the basic information and show the parameters and etc.	Login the device and enter the user name and password	iscom4300>
Privileged EXEC(enable)	Configuring the basic information such as system time and show the parameters but not the running information of ISCOM4300	Form user EXEC mode, enter <b>enable</b> command and password	Iscom4300#
Global configuration	Configuring all the running parameters of ISCOM4300	From privileged EXEC mode, enter <b>config</b> command	iscom4300(config)#
Interface configuration	Configuring the interface parameters of ISCOM4300	In global configuration mode, enter <b>interface</b> command. <i>[ETH PORTID /SDH 1-2]</i>	iscom4300(config-if)#
SNMP interface configuration mode	Configuring the network management interface parameters of ISCOM4300	<b>Interface</b> <i>SNMP</i>	iscom4300(config-snmp)#
VCG command mode	Configuring the relevant properties of ISCOM4300 VCG	In global configuration mode, enter <b>vcg</b>	iscom4300(config-vcg)#

### 3.3. Getting help

Command	Function description
<b>help</b>	Getting a brief description from help system
abbreviated-command-entry?	Obtaining a list of commands that begin with a particular character sequence ( <i>abbreviated-command-entry</i> ) For example: iscom4300# <b>en</b> ? <b>english</b> <b>enable</b>
abbreviated-command-entry<Tab>	Supplementing an unfinished command. For example: iscom4300# <b>show mac</b> <TAB> iscom4300# <b>show mac-address-table</b>
?	Listing all the commands in this mode For example: iscom4300#?
command?	Listing all the key words, options and brief help information of a command. iscom4300# <b>show?</b>

### 3.4. Use history commands

There are 20 history commands in system memory of by default. User can configure the number of history commands that system can save by command-line:

ISCOM4300> **terminal history** <0-20>

Use **history** to show commands that has been entered.

### 3.5. Editing properties

up arrow:	last entered command
down arrow:	next entered command
left arrow:	move a character left
right arrow:	move a character right
backspace:	delete a character in front of the cursor
Ctrl+d:	delete a character at the cursor
Ctrl+a:	move the cursor to the beginning of the command line

Ctrl+e:	move the cursor to the end of the command line
Ctrl+k:	delete all the characters on the right side the cursor
Ctrl+w:	delete all the characters on the left side of the cursor
Ctrl+u:	delete the row all
Ctrl+z:	exit from other modes to privileged mode

#### Configuring system commands

Basic system configuration and user management.

### 3.6. Basic system commands and configuration

<b>chinese</b>	show help information of the command in Chinese
<b>english</b>	show help information of the command in English
<b>clear</b>	clear the information on the screen
<b>list</b>	show the list of all the commands in one mode
<b>settime</b>	change the system time

### 3.7. Managing configuration file and startup file

#### 1. Configuration file

- The present reserved configuration file name is *startup\_config.conf* by default.
- Use **write** command to write the configuration file into the flash file system, when the system resets next time, the reserved configuration information will be configured again.
- Use **erase** command to delete that file
- The reserved configuration information file *startup\_config.conf* can be uploaded to the server by commands *upload* and *download* through the FTP protocol or TFTP protocol, or downloaded to system to replace the old configuration information.
- Use **show startup-config** command to show configuration information.
- Use **show running-config** command to show the present configuration information.

#### 2. Startup file

- Same as program file, and the file name must begin with ISCOM4300, present program file name is: iscom4300-040109-d.Z;
- The program file can be uploaded to the server by commands *upload*

and *download* through the FTP protocol or TFTP protocol, or downloaded to system.

- Use **show version** to check the version information.

### 3. Upgrade the program file from bootrom

There are two ways to upgrade the program file, one is using the serial port through Xmodem protocol, and the other is using network through FTP protocol, the specific operations are as follows:

#### Upgrade the program file by serial port

**A:** The user who has management privilege can login and enter the privileged EXEC by the serial port;

**B:** Enter **reboot** command;

**C:** Press the **space** key to enter the [raisecom] interface, enter? to show the command list.

```

?      show this list
h      show this list
e      erase Flash
i      modify network manage port ip address
c      choose default image file
s      show network manage interface information
u      update your system
m      update microcode
r      reboot system
    
```

**D:** Enter **u** to upgrade program file, the interface is as follows:  
choose mode for updating core file.

```

-----
-      1.  |      serial      -
-----
-      2.  |      network     -
-----
    
```

please input mode choose..

**E:** Enter **1** to choose serial port for downloading, the interface is as follows:

choose serial baud rate for updating core file.

```

-----
-      1.  |      9600       -
-----
-      2.  |      14400      -
-----
-      3.  |      19200      -
-----
    
```



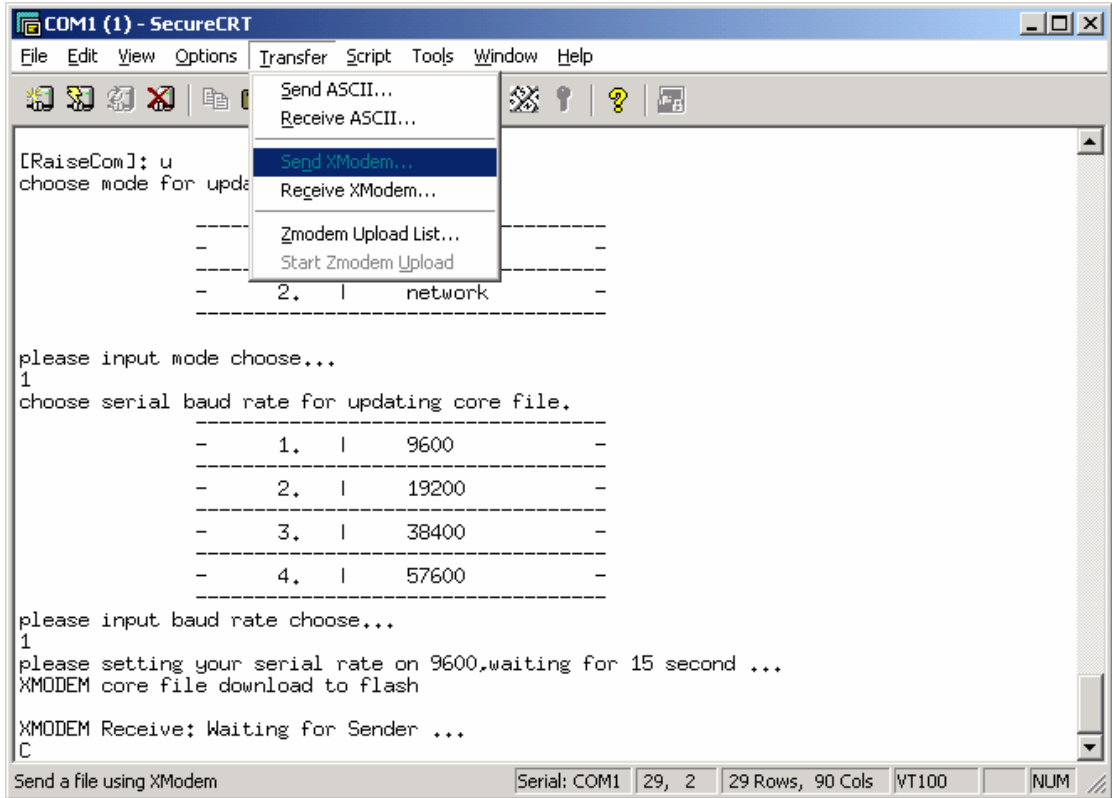
```

-      4.  |      38400      -
-----
-      5.  |      115200     -
-----

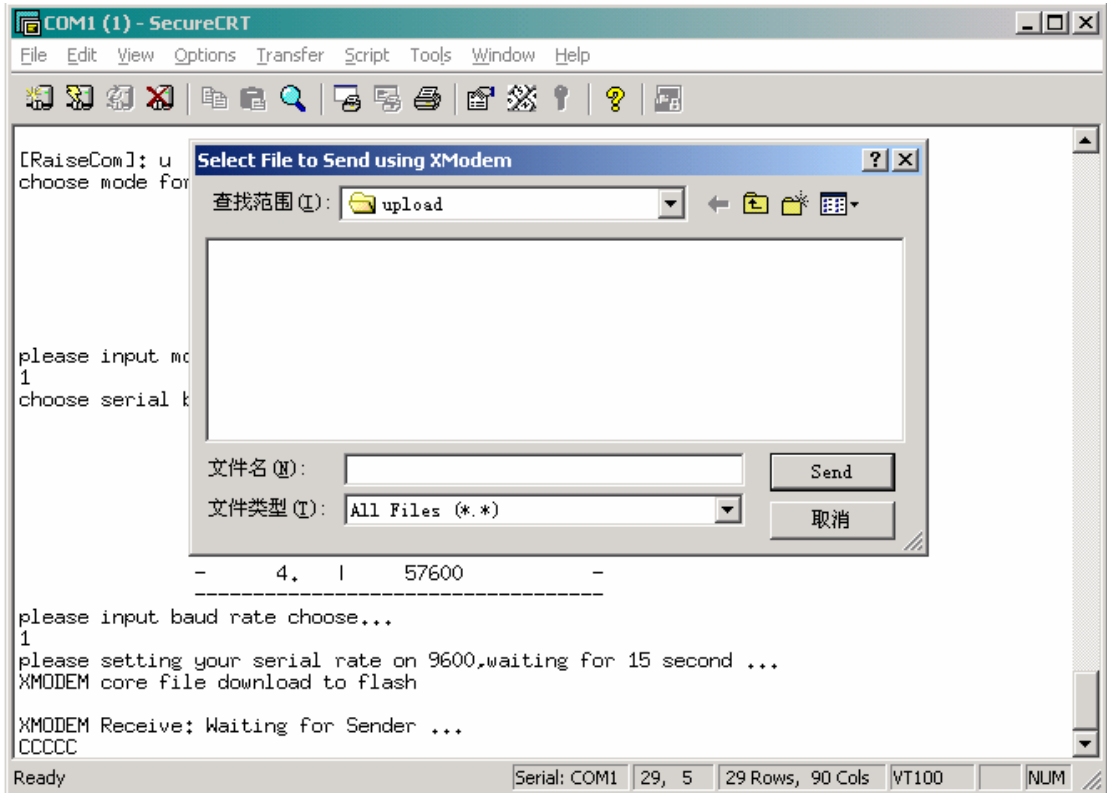
```

please input baud rate choose...

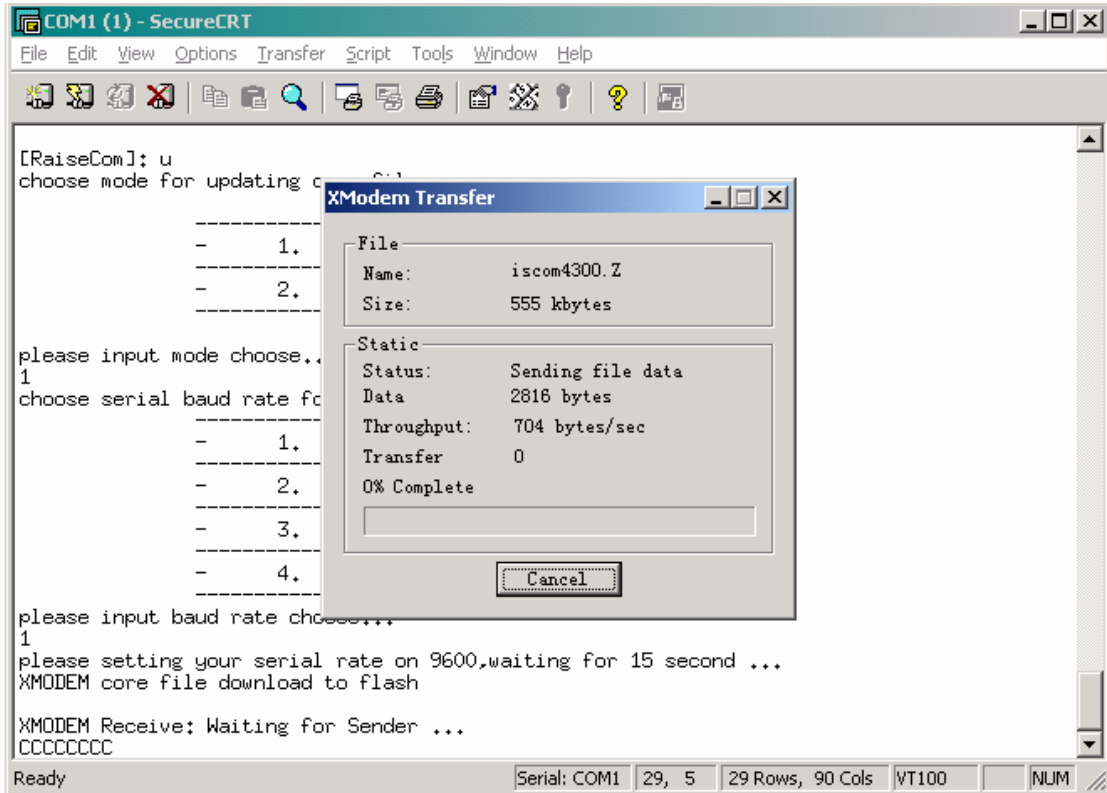
**F:** After entering the chosen baud rate, the system is waiting to transmit through the serial port, now press the [Transfer] option in the serial port as follows:



Choose the file to transmit:



Press [Browse] option to choose the program file to be downloaded, press [Send] then there will be the following interface:



After downloading there will be the command-line:  
**Do you want to update core code? <Y/N>y**

Choose **y** and then finish the program upgrading.

### Use network to upgrade the program file through FTP protocol:

**A:** The user who owns the management privilege can login and enter the privileges EXEC mode by the serial port;

**B:** Enter **reboot** command;

**C:** Press the **space** key to enter the [raisecom] interface, enter **?** to show the command list.

```

?      show this list
h      show this list
e      erase Flash
i      modify network manage port ip address
c      choose default image file
s      show network manage interface information
u      update your system
m      update microcode
r      reboot system

```

**D:** Enter **u** to upgrade program file, the interface is as follows:  
choose mode for updating core file.

```

-----
-      1.  |      serial      -
-----
-      2.  |      network     -
-----

```

please input mode choose...

**E:** Enter 2 to choose network for downloading, the interface is as follows:

starting config network infor ...

```

host ip address: 192.168.4.250
filename: iscom4300.Z
usr: wrs
passwd: wrs

```

Enter host IP address, file name, user name and password of FTP in turn, and then get into the interface as follows:

starting connect host, please waiting...  
choose flash disk for updating core file.

```
-----  
-      1.  |   flash:      -  
-----  
-      2.  |   CORE:      -  
-----  
-      3.  |   cancel:    -  
-----
```

please input disk choose...

Put the new program file in **CORE** zone, after confirming there will be the following information:

start update core, please wait some minutes.....  
success

Now the program upgrade has been finished.

## 4. User management

The system has a default username **raisecom** and the password **raisecom**;

Add a new user, the steps are as follows:

steps	Command	Description
1	<b>user</b> USERNAME <b>password</b> { <b>no-encryption</b>   <b>md5</b> } PASSWORD	<ul style="list-style-type: none"> <li>● USERNAME user name;</li> <li>● <b>Password</b> password;</li> <li>● { <b>no-encryption</b>   <b>md5</b>} password not enciphered or enciphered by MD5;</li> <li>● PASSWORD password information;</li> </ul>
2	<b>user</b> USERNAME <b>privilege</b> [ADMINISTRANT   NORMAL   LIMITED]	<ul style="list-style-type: none"> <li>● USERNAME user name;</li> <li>● <b>Privilege</b> key word for privilege</li> <li>● [ADMINISTRANT   NORMAL   LIMITED] user privilege</li> </ul>
3	<b>write</b>	Save the configuration information
4	<b>show user</b>	Show the user information

## 5. Configuring network protocols

This chapter includes the following sections:

Configuring the mapping from IP address to physical address

Configuring aging time of ARP

Configuring IP address of SNMP interface

Configuring a static routing

Configuring COMMUNITY table of SNMP

Configuring SNMP trap-server host

### Configuring the mapping from IP address to physical address

Command	Description
<b>config</b>	Enter global configuration mode
<b>arp add</b> <i>A.B.C.D</i> <i>MACADDRESS</i>	Add a mapping from one IP address to physical address. <i>A.B.C.D</i> the IP address of the interface; <i>MACADDRESS</i> : <AA.BB.CC.DD.EE.FF>, the port's physical address for mapping
<b>exit</b>	Exit from global configuration mode to privileged mode
<b>show arp</b>	Show ARP table

Using the global configuration command **arp delete** *A.B.C.D* to delete a mapping from an IP address to a physical address.

For example: Add a mapping of a IP address 192.168.4.11 to a physical address 25:98:76:76:34:01.

```
iscom4300# config
```

*Configuration mode, one command input per times. End with CTRL-Z.*

```
iscom4300(config)# arp add 192.168.4.11 25:98:76:76:34:01
```

*Successfully add an entry in ARP table*

```
iscom4300(config)#
```

```
iscom4300# show arp
```

*arp timeout is 1200*

#### LINK LEVEL DYNAMIC ARP TABLE

<i>ipAddress</i>	<i>macAddr</i>	<i>flags</i>	<i>Refcnt</i>	<i>Use</i>	<i>Interface</i>
192.168.4.28	00:a0:88:88:88:00	ffff8405	0	8	lo0

#### LINK LEVEL STATIC ARP TABLE

<i>ipAddress</i>	<i>macAddr</i>	<i>flags</i>	<i>Refcnt</i>	<i>Use</i>
192.168.4.11	25:98:76:76:34:1	c05	0	0

### Configuring the aging-time of ARP

The ARP will be aged if not used, the time can be changed, and 180 seconds is by default.

Command	Description
<b>config</b>	Enter global configuration mode
<b>arp timeout</b> <0-14400>	Set up ARP aging time <0-14400> the range of aging time, unit is second.

For example: configuring ARP aging-time as 300s.

```
iscom4300# config
```

*Configuration mode, one command input per times. End with CTRL-Z.*

```
iscom4300(config)# arp timeout 300
```

*Set successfully!*

### Configuring IP address of SNMP interface

There is the possibility to change the IP address of network management, in this case **ip address** is available.

Command	Description
<b>config</b>	Enter global configuration mode
<b>interface snmp</b>	Enter SNMP interface configuration mode
<b>ip address</b> A.B.C.D { A.B.C.D}	Configure IP address of network management A.B.C.D IP address of network management in decimal with dot. { A .B.C.D} subnet mask of network management IP address in decimal with dot.

For example: configure IP address of network management as 192.168.2.20, subnet mask as 255.255.255.0 and serial number of network management interface as 1.

```
iscom4300# config
```

*Configuration mode, one command input per times. End with CTRL-Z.*

```
iscom4300(config)# interface snmp
```

```
iscom4300(config-snmp)# ip address 192.168.2.20 255.255.255.0
```

*Set ip address successfully*

```
iscom4300(config-snmp)# show interface snmp
```

*Interface:snmp Status:down Description:raisecom-bj*

*Duplex:half Speed:100 Autonegotiation:enable*

*IpAddr:192.168.2.20*

## Configuring a route.

Command	Description
<b>config</b>	Enter global configuration mode
<b>ip route</b> <i>A.B.C.D A.B.C.D A.B.C.D</i>	Configuring the network manager's IP address: <i>A.B.C.D</i> the first parameter is the subnet or the host IP address in decimal with dot <i>A.B.C.D</i> the second parameter is the net mask of subnet or host IP address in decimal with dot <i>A.B.C.D</i> the third parameter is the gateway's IP address in decimal with dot
<b>exit</b>	Exit from global configuration mode to privileged mode
<b>show ip route</b>	Show the routing information

Use **no ip route** *A.B.C.D A.B.C.D* to delete a routing in the global configuration mode, the *A.B.C.D A.B.C.D* are destination IP address and subnet mask.

For example: configure a routing from 192.168.2.8 to the destination address 192.168.2.18.

```
iscom4300# config
```

*Configuration mode, one command input per times. End with CTRL-Z.*

```
iscom4300(config)# ip route 192.168.2.18 255.255.255.0 192.168.2.8
```

*Successfully add a route*

```
iscom4300(config)# exit
```

```
iscom4300# show route
```

## ROUTE NET TABLE

destination	gateway	flags	Refcnt	Use	Interface
192.168.2.0	192.168.2.20	101	0	0	hw0
192.168.4.0	192.168.4.28	101	0	0	fei0

## ROUTE HOST TABLE

destination	gateway	flags	Refcnt	Use	Interface
127.0.0.1	127.0.0.1	5	0	0	lo0
192.168.2.18	192.168.2.8	7	0	0	hw0

## Configuring SNMP COMMUNITY table



Command	Description
<b>config</b>	Enter global configuration mode
<b>Snmp-server community</b> <i>COMMUNITYNAME</i> [RO   RW]	Add one COMMUNITY <i>COMMUNITYNAME</i> name of the COMMUNITY RO read only RW both read and write
<b>exit</b>	Exit from global configuration mode to privileged mode
<b>show snmp-server community</b>	Show COMMUNITY table

Using **no snmp-server community** *COMMUNITYNAME* to delete one COMMUNITY in global configuration mode

For example: add a COMMUNITY named *raisecom* that can be both read and written

```
iscom4300# config
```

*Configuration mode, one command input per times. End with CTRL*

```
iscom4300(config)# snmp community raisecom rw
```

*Set snmp community name successfully*

```
iscom4300(config)# exit
```

```
iscom4300# show snmp community
```

```
ID  COMMUNITYNAME  RIGHT
-----
1   public          ro
2   private         rw
3   raisecom        rw
```

Configuring SNMP trap-server host

The trap-server host is in charge of receiving TRAP, the default interface is 162

Command	Description
<b>config</b>	Enter global configuration mode
<b>snmp trap-server</b> <i>A.B.C.D</i> {<1-65535>}	Configuring a SNMP trap-server host <i>A.B.C.D</i> the IP address of the host in decimal with dot {<1-65535>} interface number for trap-server
<b>exit</b>	Exit from the global configuration mode to privileged mode
<b>show snmp trap-server</b>	Show the information of the trap-server host

Using **no snmp trap-server** *A.B.C.D* to delete a trap-server host in global configuration mode

*For example: add a trap-server host which IP address is 192.168.1.16*

*iscom4300# config*

*Configuration mode, one command input per times. End with CTRL*

*iscom4300(config)# snmp trap-server 192.168.1.16*

*Set trap server successfully*

*iscom4300(config)# exit*

*iscom4300# show snmp trap-server*

*Trap server:*

<i>ADDRESS</i>	<i>PORT</i>	<i>STATUS</i>
----------------	-------------	---------------

*-----*

<i>192.168.1.16</i>	<i>162</i>	<i>invalid</i>
---------------------	------------	----------------

## 6. Configuring Ethernet interfaces

This chapter includes:

Configuring autonegotiate of Ethernet interfaces

Configuring the speed and duplex modes of Ethernet interfaces

Configuring autonegotiate of Ethernet interfaces

Command	Description
<b>config</b>	Enter global configuration mode
<b>interface eth &lt;1-16&gt;</b>	Enter Ethernet interface configuration mode <1-16> serial number of Ethernet interface
<b>autonegotiate</b>	Enable the autonegotiate
<b>show interface eth &lt;1-16&gt;</b>	Show information of Ethernet interface.

Use **no autonegotiate** to disable autonegotiate.

For example: enable autonegotiate of Ethernet interface

```
iscom4300# config
```

*Configuration mode, one command input per times. End with CTRL-Z.*

```
iscom4300(config)# interface eth 2
```

```
iscom4300(config-if)# autonegotiate
```

*Set ethernet interface autonegotiate successfully*

```
iscom4300(config-if)# show interface eth 2
```

```
Interface:eth2 Status:down Description:raisecom-bj
```

```
Duplex:half Speed:10 Autonegotiation:enable MapVcgNo:18
```

```
InOctets:0 InUcastPkts:0 InNUcastPkts:0
```

```
InDiscards:0 InError:0 InPauseFrames:0
```

```
OutOctets:0 OutUcastPkts:0 OutNucastPkts:0
```

```
OutDiscards:0 OutPauseFrames:0
```

Configuring the speed and duplex modes of Ethernet interfaces

Command	Description
<b>config</b>	Enter global configuration mode
<b>interface eth &lt;1-16&gt;</b>	Enter Ethernet interface configuration mode <1-16> serial number of Ethernet interface
<b>speed [10   100] duplex [FULL   HALF]</b>	Configuring the speed and duplex modes 10 speed is 10Mbps; 100 speed is 100Mbps; FULL full-duplex mode; HALF half-duplex mode
<b>show interface eth 2</b>	Show information of Ethernet interface 2

For example: set interface 2 at 100M and in full-duplex mode

```
iscom4300(config-if)# speed 100 duplex full
```

Set successfully

```
iscom4300(config-if)# show interface eth 2
```

```
Interface:eth2 Status:down Description:raisecom-bj
```

```
Duplex:full Speed:100 Autonegotiation:disable MapVcgNo:18
```

```
InOctets:0 InUcastPkts:0 InNUcastPkts:0
```

```
InDiscards:0 InError:0 InPauseFrames:0
```

```
OutOctets:0 OutUcastPkts:0 OutNucastPkts:0
```

```
OutDiscards:0 OutPauseFrames:0
```

## 7. Configuring SDH interfaces

This chapter includes:

Configuring the clock source

Configuring the type of SDH protection switch

Configuring the lock of SDH timeslot

### Configuring the clock source

Command	Description
<b>config</b>	Enter global configuration mode
<b>clksrc</b> [MASTER SLAVE]	Configure clock source MASTER of master clock; SLAVE of slave clock.
<b>show interface sdh 1</b>	Show information of SDH interface

For example: configure master clock as clock source

```
iscom4300# config
```

Configuration mode, one command input per times. End with CTRL-Z.

```
iscom4300(config-if)# clksrc master
```

Set sdh clksrc successfully!

### Configuring the type of SDH protection switch

Command	Description
<b>config</b>	Enter global configuration mode
<b>interface sdh</b> <1-2>	Enter SDH interface configuration mode <1-2> serial number of SDH interface
<b>sdh clksrc</b> [AUTOPS   COMPLUSIONPS]	Configure SDH protection switch type AUTOPS automatic type; COMPLUSIONPS compulsive type.
<b>show interface sdh 1</b>	Show information of SDH interface.

For example: configure SDH protection switch as automatic type

```
iscom4300# config
```

Configuration mode, one command input per times. End with CTRL-Z.

```
iscom4300(config)# interface sdh 1
```

```
iscom4300(config-if)# sdh psconfig autops
```

Set sdh psconfig successfully!

### Configuring the lock of SDH timeslot

Command	Description
<b>config</b>	Enter global configuration mode

---

<b>interface sdh &lt;1-2&gt;</b>	Enter SDH interface configuration mode <1-2> serial number of SDH interface
<b>sdh timeslot [LOCK   UNLOCK]</b>	Configure SDH protection switch type LOCK timeslot locked; UNLOCK timeslot unlocked.
<b>show interface sdh 1</b>	Show information of SDH interface.

---

For example: configure SDH timeslot in lock status

```
iscom4300# config
```

*Configuration mode, one command input per times. End with CTRL-Z.*

```
iscom4300(config)# interface sdh 1
```

```
iscom4300(config-if)# sdh timeslot lock
```

*Set sdh timeslot successfully!*

## 8. Configuring VCG service

This chapter includes:

Configuring GFP relevant properties of VCG.

Configuring encapsulation mode of VCG.

Enable or disable LCAS of VCG.

Configuring VC timeslot and the type in VCG

Configuring all the properties of VCG.

Map VCG to Ethernet interface.

Add timeslot to VCG.

Delete timeslot of VCG

### Configuring GFP relevant properties of VCG

Command	Description
<b>config</b>	Enter global configuration mode
<b>vcg</b>	Enter VCG command mode
<b>gfp crc vcg VCGNO</b>	Configure GFP relevant properties of VCG VCGNO index of VCG;

Use **gfp no crc vcg VCGNO** command to delete

For example: configure encapsulation mode of VCG 1 as GFP.

```
iscom4300# config
```

*Configuration mode, one command input per times. End with CTRL-Z.*

```
iscom4300(config)# vcg
```

```
iscom4300(config-vcg)# gfp crc vcg 1
```

```
Set crc Success
```

### Configuring encapsulation mode of VCG

Command	Description
<b>config</b>	Enter global configuration mode
<b>vcg</b>	Enter VCG command mode
<b>encapsulation [GFP   LAPS   PPP] vcg VCGNO</b>	Configure encapsulation mode of VCG VCGNO index of VCG; GFP GFP encapsulation mode; LAPS LAPS encapsulation mode; PPP PPP encapsulation mode.
<b>show vcg</b>	Show VCG configuration mode

For example: configure encapsulation mode of VCG 1 as GFP.

```
iscom4300# config
```

Configuration mode, one command input per times. End with CTRL-Z.

```
iscom4300(config)# vcg
iscom4300(config-vcg)# encapsulation gfp vcg 1
Set vcg encapsulation successfully
iscom4300(config-vcg)# show vcg
```

```
Vcg 1:
Encapsulation:gfp Lcas:on EthPort:
VcType:vc12 VcNum:0 Status:unuse SdhNo:0
Timeslot:
```

Enable or disable LCAS of VCG

Command	Description
<b>config</b>	Enter global configuration mode
<b>vcg</b>	Enter VCG command mode
<b>lcas</b> [ON   OFF] <b>vcg</b> VCGNO	Configure LCAS of VCG VCGNO index of VCG; ON enable LCAS; OFF disable LCAS.
<b>show vcg</b>	Show VCG configuration information

For example: enable LCAS of VCG 1

```
iscom4300# config
Configuration mode, one command input per times. End with CTRL-Z.
iscom4300(config)# vcg
iscom4300(config-vcg)# lcas on vcg 1
Set lcas successfully
iscom4300(config-vcg)# show vcg 1
```

```
Vcg 1:
Encapsulation:gfp Lcas:on EthPort:
VcType:vc12 VcNum:0 Status:unuse SdhNo:0
Timeslot:
```

Configuring VC timeslot and the type of VCG

Command	Description
<b>config</b>	Enter global configuration mode
<b>vcg</b>	Enter VCG command mode
<b>vctype</b> [VC12   VC3] <b>sdh</b> <1-2> <b>vc4</b> 1 <b>vcstr</b> VCSTRING} <b>vcg</b> VCGNO	Configure VC timeslot and the type of VCG VCGNO index of VCG; VCSTRING VC timeslot string.
<b>show vcg</b>	Show information of VCG

For example: configure VCG 1's VC type as vc12 and timeslots as 1,2,3,4.



```
iscom4300(config)# vcg
iscom4300(config-vcg)# vctype vc12 sdh 1 vc4 1 vcstr 1,2,3,4 vcg 1
Set successfully
iscom4300(config-vcg)# sho vcg 1
```

```
Vcg 1:
Encapsulation:gfp Lcas:on EthPort:
VcType:vc12 VcNum:4 Status:unuse SdhNo:1
Timeslot:1,2,3,4
```

Configuring all VCG properties

Command	Description
<b>config</b>	Enter global configuration mode
<b>vcg</b>	Enter VCG command mode
<b>set vcg VCGNO encapsulation</b> [GFP LAPS PPP] lcas [ON OFF]	Configuring all VCG properties VCGNO 表 index of VCG; GFP GFP encapsulation mode;
<b>vctype [VC12 VC3] sdh &lt;1-2&gt;</b>	LAPS LAPS encapsulation mode;
<b>vc4 1 vcstr VCSTRING</b>	PPP PPP encapsulation mode. VCSTRING timeslot string of VC.
<b>show vcg</b>	Show VCG information

For example: Configuring all properties VCG 1

```
iscom4300(config-vcg)# set vcg 1 encapsulation gfp lcas on vctype vc12 sdh 1 vc4
1 vcstr 1,2,3,4
Set vcg successfully
iscom4300(config-vcg)# show vcg 1
```

```
Vcg 1:
Encapsulation:gfp Lcas:on EthPort:
VcType:vc12 VcNum:4 Status:unuse SdhNo:1
Timeslot:1,2,3,4
```

Map VCG to Ethernet interface

Command	Description
<b>config</b>	Enter global configuration mode
<b>vcg</b>	Enter VCG command mode
<b>Map eth ETHPORT vcg</b> VCGNO	Map VCG to Ethernet interface VCGNO VCG index ETHPORT serial number of Ethernet interface.
<b>show mappingtable</b>	Show mapping information

For example: map VCG 1 to Ethernet interface 1.

```
iscom4300(config-vcg)# map eth 1 vcg 1
Map successfully
iscom4300(config-vcg)# show map
```

```

EthPort      VcgNo
-----
1            1

```

Add timeslot to VCG

Command	Description
<b>config</b>	Enter global configuration mode
<b>vcg</b>	Enter VCG command mode
<b>timeslot add sdh &lt;1-2&gt; vc4 1</b> <i>TIMESLOTSTR vcg VCGNO</i>	Map VCG to Ethernet interface VCGNO VCG index ETHPORT serial number of Ethernet interface.
<b>show vcg</b>	Show mapping information

For example: add timeslots 5-6 to VCG 1.

```
iscom4300(config-vcg)# timeslot add sdh 1 vc4 1 5,6 vcg 1
Timeslot add successfully
iscom4300(config-vcg)# show vcg 1
```

```
Vcg 1:
Encapsulation:gfp Lcas:on EthPort:1
VcType:vc12 VcNum:6 Status:inuse SdhNo:1
Timeslot:1,2,3,4,5,6
```

Delete timeslot of VCG

Command	Description
<b>config</b>	Enter global configuration mode
<b>vcg</b>	Enter VCG command mode
<b>timeslot delete sdh &lt;1-2&gt; vc4</b> <i>1 TIMESLOTSTR vcg VCGNO</i>	Delete VCG of Ethernet interface VCGNO index of VCG; TIMESLOTSTR string of timeslot to be deleted.
<b>show mappingtable</b>	Show mapping information

For example: delete timeslots 5-6 of VCG 1.

```
iscom4300(config-vcg)# timeslot delete sdh 1 vc4 1 5,6 vcg 1
Timeslot delete successfully
iscom4300(config-vcg)# show vcg 1
```

Vcg 1:  
Encapsulation:gfp Lcas:on EthPort:1  
VcType: vc12 VcNum:4 Status:inuse SdhNo:1  
Timeslot:1,2,3,4

## 9. Examples of application configuration

This chapter includes:

Example of point to point connection configuration

Example of ring topology connection configuration

Attention: the two devices must be one in master clock mode and the other in slave clock mode.

Example of point to point connection configuration

Two PC s are connected back to back, and the following topology is recommended:

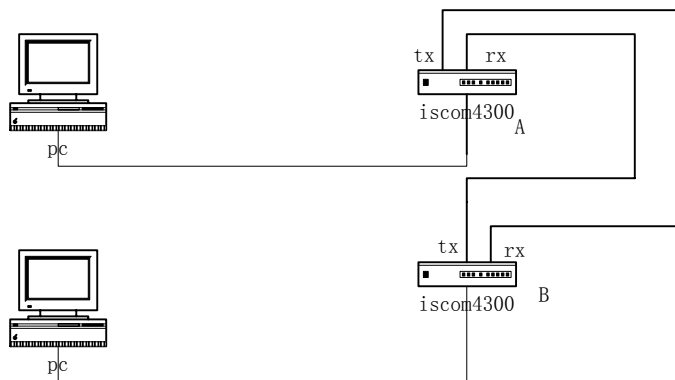


Figure 1

Two PCs are both connected to Ethernet interfaces 1 of ISCOM4300s, and map VCG1 to the Ethernet interfaces which are in autonegotiate mode. Configure VCG1 encapsulation mode as GFP and enable LCAS, the VC type is VC12 and includes timeslots 1,2,3,4.

Attention: the interconnected Ethernet interfaces must be the same VCG timeslots, that is to say, if Ethernet interface 1 of device A has the timeslots 1,2,3,4, then Ethernet interface 1 of device B must have the same ones. Timeslots and their number must be the same if disable LCAS. But if enable LCAS, the two ends are connectable in case there are same timeslots and the total rate is the sum of the same timeslots.

Configuration of control platform:

Device A:

- a. Configure VCG1 properties;
 

```
iscom4300(config)# vcg
iscom4300(config-vcg)# set vcg 1 encapsulation gfp lcas on vctype
vc12 sdh 1 vc4 1 vcstr 1,2,3,4
```
- b. Map VCG1 to Ethernet interface 1.
 

```
iscom4300(config-vcg)# map eth 1 vcg 1
```

Device B:

- c. Configure VCG1 properties;

- ```

iscom4300(config)# vcg
iscom4300(config-vcg)# set vcg 1 encapsulation gfp lcas on vctype
vc12 sdh 1 vc4 1 vcstr 1,2,3,4
d. Map VCG1 to Ethernet interface 1.
iscom4300(config-vcg)# map eth 1 vcg 1

```

Attention: for any two connected devices, VCG encapsulation mode, LCAS status and VC type must be the same.

#### Example of ring topology connection configuration

Two PCs are connected through two ADMs and ring, the topology is as follows:

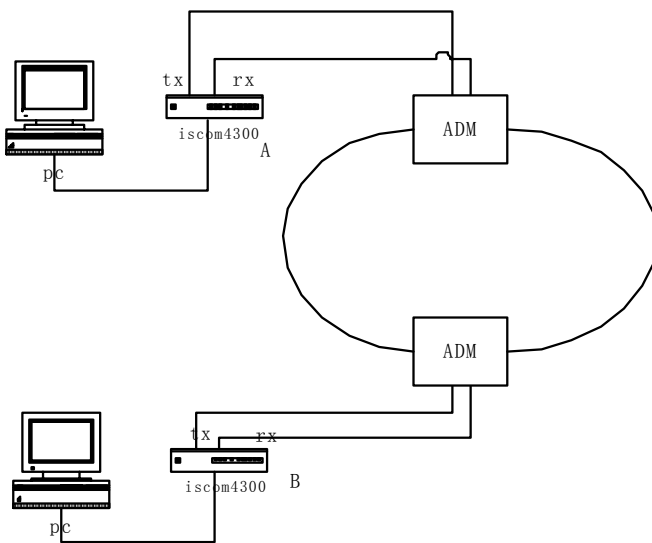


Figure 2

Two PCs are both connected to Ethernet interfaces 1 of ISCOM4300s, and map VCG1 to the Ethernet interfaces which are in auto negotiate mode

Attention: the timeslots must be the same in the upstream and downstream in ring topology, and there is no requirement for timeslots of the connected devices. Timeslots and the number must be the same if disable LCAS (considering cross connection of ADMs). But if enable LCAS, the two ends are connectable in case there are same timeslots and the total rate is the sum of the same timeslots.

Method 1:configure device A, properties of VCG mapped to Ethernet interface 1: GFP as encapsulation mode, enable LCAS, VC12 as VC type and includes timeslots 1,2,3,4 the same after transmitted by ADM; configure device B: properties of VCG mapped to Ethernet interface 1: GFP as encapsulation mode, enable LCAS, VC12 as VC type and includes timeslots 1,2,3,4

Configuration of control platform:

Device A:

- e. Configure VCG1 properties;  
iscom4300(config)# **vcg**  
iscom4300(config-vcg)# **set vcg 1 encapsulation gfp lcas on vctype**  
vc12 **sdh 1 vc4 1 vcstr 1,2,3,4**
- f. Map VCG1 to Ethernet interface 1.  
iscom4300(config-vcg)# **map eth 1 vcg 1**

Device B:

- g. Configure VCG1 properties;  
iscom4300(config)# **vcg**  
iscom4300(config-vcg)# **set vcg 1 encapsulation gfp lcas on vctype**  
vc12 **sdh 1 vc4 1 vcstr 1,2,3,4**
- h. Map VCG1 to Ethernet interface 1.  
iscom4300(config-vcg)# **map eth 1 vcg 1**

Attention: for any two connected devices, VCG encapsulation mode, LCAS status and VC type must be the same.

Method 2:configure device A, properties of VCG mapped to Ethernet interface 1: GFP as encapsulation mode, enable LCAS, VC12 as VC type and includes timeslots 1,2,3,4 changed to 5,6,7,8 after transmitted by ADM; configure device B: properties of VCG mapped to Ethernet interface 1: GFP as encapsulation mode, enable LCAS, VC12 as VC type and includes timeslots 5,6,7,8

Configuration of control platform:

Device A:

- i. Configure VCG1 properties;  
iscom4300(config)# **vcg**  
iscom4300(config-vcg)# **set vcg 1 encapsulation gfp lcas on vctype**  
vc12 **sdh 1 vc4 1 vcstr 1,2,3,4**
- j. Map VCG1 to Ethernet interface 1.  
iscom4300(config-vcg)# **map eth 1 vcg 1**

Device B:

- k. Configure VCG1 properties;  
iscom4300(config)# **vcg**  
iscom4300(config-vcg)# **set vcg 1 encapsulation gfp lcas on vctype**  
vc12 **sdh 1 vc4 1 vcstr 5,6,7,8**
- l. Map VCG1 to Ethernet interface 1.  
iscom4300(config-vcg)# **map eth 1 vcg 1**

Attention: for any two connected devices, VCG encapsulation mode, LCAS status and VC type must be the same.

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