AccessGain DSLAM 16

SA-ACE16

16 Ports' IP-DSLAM

USER'S GUIDE

Version 1.0

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About This Guide

Audience

This book is intended for anyone who installs, manages, and configures the SA-ACE16, one product of S-Access GmbH AccessGain Series, via CID/RS232 or Telnet/Ethernet CLI command interface. The SA-ACE16 is a standalone IP-based DSLAM which can concentrate and manage 16 DSL ports.

You must have a basic understanding of DSL and Layer 2 concentrator related technologies, be knowledgeable about data communications, and familiar with VT100 terminal emulation tools.

Purpose

This book describes how to install, manage, and configure the SA-ACE16 system via CLI command Line interface through CID/RS232 interface or Telnet/Ethernet interface.

Organization

This book provides task-based instructions for installing and using the CLI interface to configure and administrate the SA-ACE16 System. The manual is organized as follows:

Chapter	Title & Description
1	**Introduction** Provides an overview of SA-ACE16 System, including features, fucntions, applications of the IP DSLAM.
2	**Getting started** Presents platform and system requirements as well as procedures and instructions for installing the SA-ACE16.
3	**System administration with emweb** Provides all the instructions and procedures necessary for you to administer your SA-ACE16 with EmWeb interface.
4	**System administration with cli** Provides all the instructions and procedures necessary for you to administer your SA-ACE16 with CLI interface.
6	**Configuration back up and restore** Provides the procedures to back up configuration settings from SA-ACE16 and restore to SA-ACE16.
7	**Troubleshooting** Provides some potential problems and possible remedies and helps you diagnose and solve the problems.
8	**Appendix a** Presents the pin assignment for SA-ACE16

Document Conventions

Screen displays use these conventions:

#	Login with administrator privilege
%	Login with operator privilege
>	Login with guest privilege

Commands descriptions use these conventions:

[ ]	Elements in square brackets are optional
< >	Essential values
< x | y | z >	Alternative keywords are grouped in < > and separated by vertical bars

Others

Note! *Means reader take note. Notes contain helptul suggestions.*

1. INTRODUCTION

1.1. General

This chapter will help you understand the function and application of your IP-DSLAM. It covers.

- SA-ACE16 Overview

This section describes the overview of your SA-ACE16. The SA-ACE16 is cost effective solution for you to complete immediate implementation of multiple of services in private and public networks.

- SA-ACE16 Application

SA-ACE16 can be applied in MTU/MDU/MHU and Ethernet-all-the-way application.

- SA-ACE16 Features

This section describes the features of SA-ACE16 and its specification.

1.2. AccessGain DSLAM Overview

Today's bandwidth-hungry application such as Internet access, remote LAN Access, teleconferencing, workgroup and data sharing, telecommuting and numerous varieties of digital video services are driving today's demand for high-speed data network Access.

S-Access GmbH designs, develops and markets transmission systems based on Digital Subscriber Line (DSL) technology for copper wire plant. They support all contemporary data rates, from 64 kbps to multi-megabit symmetric and asymmetric transmission for voice, video and data communications over a single copper pair. S-Access GmbH Access systems link enterprise LANs and Network Service Providers over private and public networks across the local loop, the connection between the customer and the first network node.

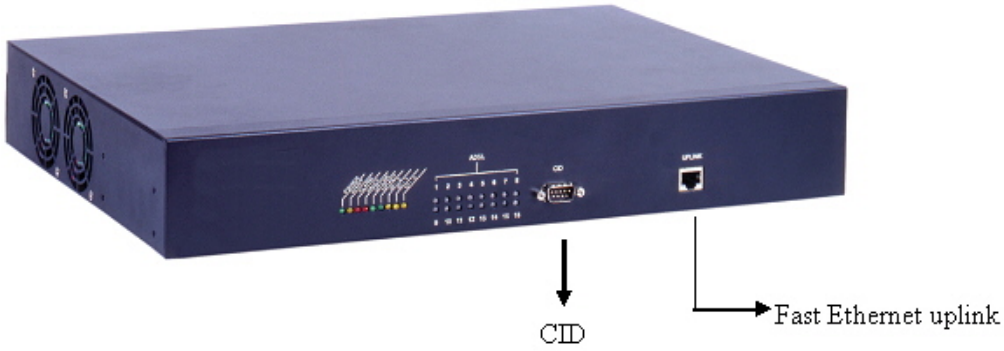
Using the latest DSL technology, S-ACCESS GMBH AccessGain series offers service providers a very cost-effective solution for immediate implementation of multiple services in private and public networks.

SA-ACE16 is one product of the AccessGain series, it acts as a standalone IP-based DSLAM, which can concentrate and manage up to 16 DSL lines. User can use local RS232 CID and/or remote TELNET/SNMP to manage the SA-ACE16 directly.

Since the ATM backbone coverage is not so general in the real broadband network environment. Instead of traditional DSLAM system provides ATM uplink interface, the SA-ACE16 concentrates 16 ports of the ATM over DSL traffic which is encapsulated by DSL CPEs, and maps each user's data encapsulated in ATM-PVC to Ethernet-with/without VLAN-tag packet (depends on the VLAN was enabled or not for the specified ATM ports), and then uplink to Telco or ISP directly, User can enable VLAN-PVC mapping capability for each DSL port independently. The SA-ACE16 acts as bridge for the DSL ports without enabling the VLAN-PVC mapping feature. In addition, it also acts as a manageable SNMP- based layer2 concentrator.

SA-ACE16 provides both Ethernet-VLAN and non-VLAN to ATM-PVC mapping feature and bridge mode for the ISP to isolate user's data with security and to provide lots of service enhancement capabilities. SA-ACE16 supports 2 ATM PVC links for each DSL CPE.

Fig. 1.1. SA-ACE16 Front View



As fig. 1.1. displays, In the front view of SA-ACE16, there are several LEDs to indicate current system and link status and one 10/100 Mega Ethernet interface for uplink.

Instead of selecting or for centralized management purpose like SA-ACE16. The SA-ACE16 can be managed via SNMP, but each SA-ACE16 will cost one IP address, and the performance of the SA-ACE16 will be little affected due to CPU usage for the SNMP agent processing.

Fig. 1.2. displays the LED identification of SA-ACE16, and Table 1.1. describes its color definition and status description.

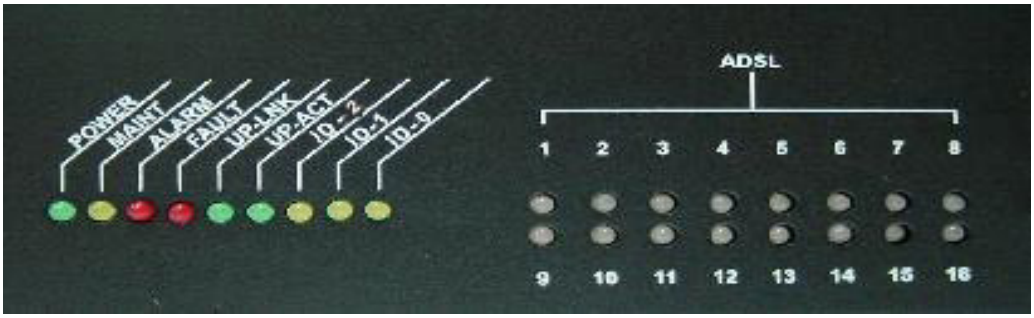


Fig. 1.2. SA-ACE16 LED Identification

Table 1.1. SA-ACE16 LED Description

<LED ID>	Color	Description
POWER	Green	Lit when power on
MAINT	Yellow	Lit when maintenance commands were issued
ALARM	Red	Lit when MJ/MN events happen
FAULT	Red	Lit when system error is detected
UP-LNK	Green	Lit when Uplink Ethernet interface was connected
UP-ACT	Green	Blink when information is transmitted through uplink Ethernet interface November
ID-2	Yellow	Only applicable for
ID-0 & ID-1	Yellow	Not used
DSL1 – DSL16	R/Y/G	Lit Red when no carrier is detected in the specified DSL link; Lit Green when DSL link is in active state; Lit Yellow when the specified DSL link is in connection training state; LED off when DSL link is not in service

Note! *Do not power off your SA-ACE16 when LEDs "MAINT", "ALARM" and "FAULT" are blinking simultaneously because the system is saving configuration and updating firmware.*

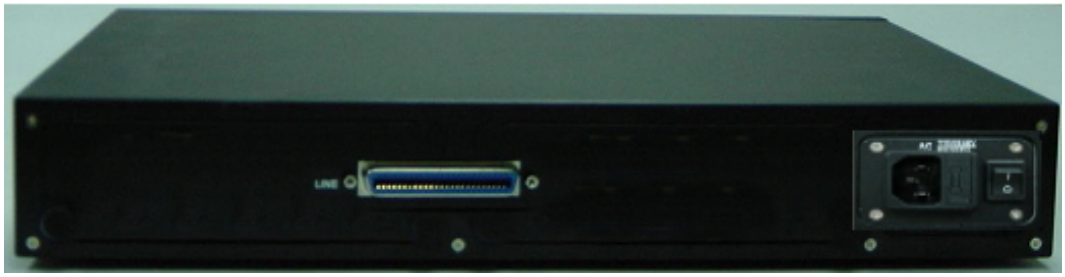


Fig. 1.3. SA-ACE16 Rear View

As fig. 1.3. displays, in the rear-panel, there is one power adaptor, both –42 V ~ -68 V DC or 90 V ~ 240 V AC power module can be selected. Totally 16 DSL CPE users can be supported in one SA-ACE16.

1.3. SA-ACE16 Application

MTU/MDU Application

As fig. 1.4. displays, because of the growth of Internet population, band- width becomes more and more important for people that live or work in the buildings. SA-ACE16 enables people inside the buildings to share the expensive uplink bandwidth and moves the Internet point of presence (POP) into the buildings.

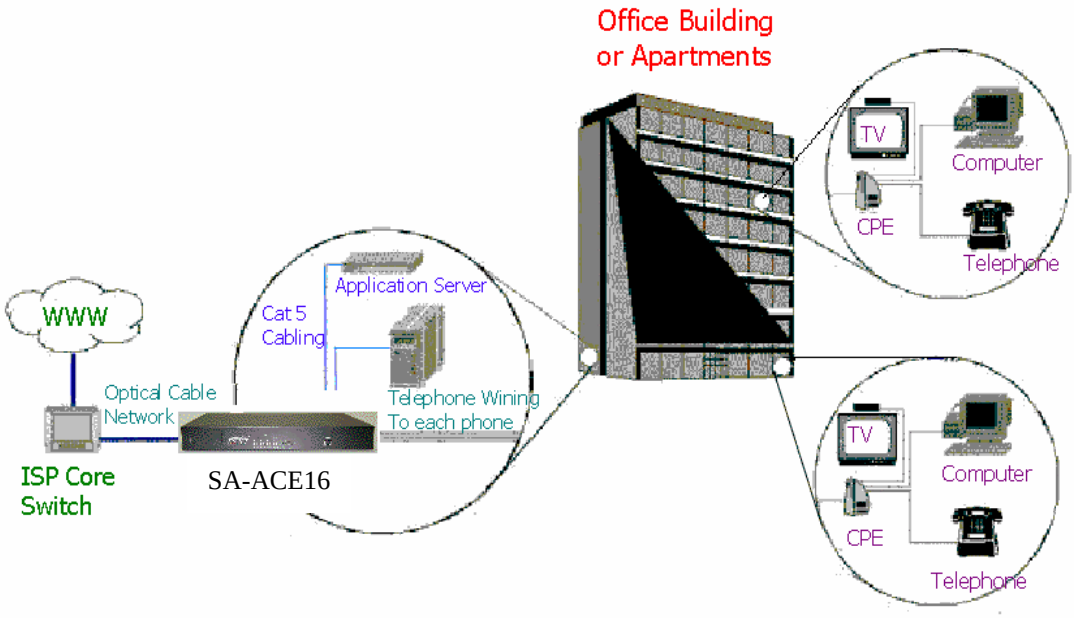


Fig. 1.4. SA-ACE16 MTU/MDU Application

Ethernet-All-the-Way application

As fig. 1.5. displays, SA-ACE16 can also be used in Ethernet-All-the-Way application. SA-ACE16 terminated all the DSL ATM circuits and converts the traffic to Ethernet-with/without VLAN- tagged packets. All Ethernet-with/without VLAN-tag traffic goes directly to ISP internal Ethernet environment, and then is routed to the Internet.

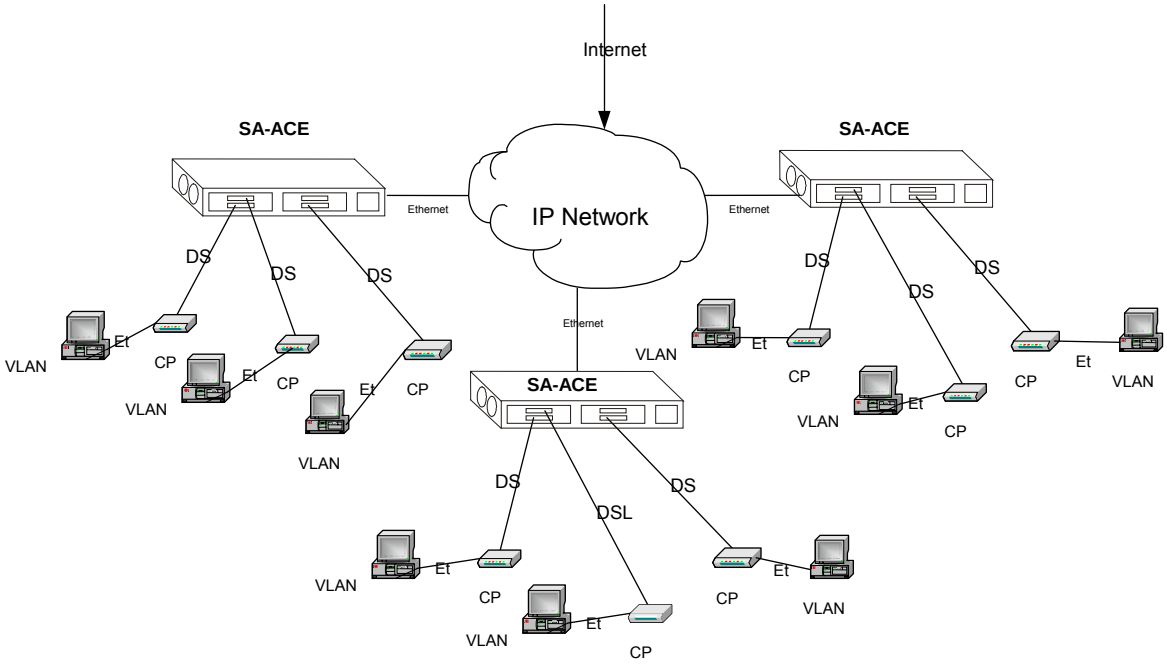


Fig. 1.5. SA-ACE16 Ethernet-All-the-Way Application

1.4. SA-ACE16 Features

VLAN support

The SA-ACE16 supports mapping of Ethernet-VLAN to ATM-PVC feature for security concern.

Compact design for limited space

The SA-ACE16 occupies 1.5 U of standard Telco rack space. Its compactness is perfect for collocation and basement installation. With the built-in POTS splitters, service providers even no need to allocate extra space for POTS splitter shelves.

Standalone System Design

For the area of less than 16 subscribers, network designer can use SA-ACE16 to provide service directly.

1.5. SA-ACE16 Specifications

SA-ACE16

Interface:

16 port G.SHDSL

LAN Interface: 10/100TX Ethernet

Power Supply: Built-in –48 V DC or 90 V-240 V AC

Mechanical:

Dimension: 429mm(W) x 300mm(D) x 66mm(H)

Weight: 5 kg

Operating position: Horizontal

Environment:

Operating Temperature: 0… +50^{0}C

Storage Temperature: -30^{0}C…+70^{0}C

Operating Relative Humidity (Non-Condensing): 0%…90%

Storage Relative Humidity (Non-Condensing): 0%…95%

Electrical:

Supply Voltage/Current: -42 V ~ -68 V DC or 90 V-240 V AC, 50-60 Hz, 50 Watts max.

Subscriber Interface:

16 x G.SHDSL 2-wire (ITU-T G.992.1).

2. GETTING STARTED

2.1. General

This chapter provides the installation instruction for the hardware installation and system configuration of your SA-ACE16 so that you can start up quickly. It includes the following sections:

- Unpacking your SA-ACE16

This section describes how to unpacking your SA-ACE16, and part number explanation.

- Hardware Installation

This section describes the power connection, loop connection and CID connection.

2.2. Unpacking your SA-ACE16

This section describes how to unpack your SA-ACE16.

For a box of SA-ACE16, there may contains the following materials:

Fig. 2.1. SA-ACE16 Packing Content

SA-ACE16 box (As fig. 2.1. displays)

- Mounting bracket package
- RJ-45 Ethernet cable
- Power cord (AC power module only)
- Mounting brackets 19”
- Documentation in CD or hard copy (optional)
- Any other accessories requested at time of ordering.

Check the contents of the package and inspect the unit for any signs of damage. Report any defects to vendor’s customer service representative. Retain all packing materials for future shipment.

2.3. Hardware Installation

- The SA-ACE16 can be installed in a standard 19-inch rack, by using the mounting brackets provided.
- Mount the shelf on the rack using the large screws provided.
- Follows the following procedures to connect and wire the system.

2.4. Safety Instruction

The following is the safety instructions for IP-DSLAM before installation:

1. Read and follows all warning notices and instructions of this user manual.
2. The maximum recommended operating temperature for the IP-DSLAM is 50ºC. Care must be taken to allow sufficient air circulation or space between units when the IP-DSLAM is installed inside a closed rack assembly and racks should safely support the combined weight of all IP-DSLAM.
3. The connections and equipment that supply power to the IP-DSLAM should be capable of operating safely with the maximum power requirements of the IP-DSLAM. In the event of a power overload, the supply circuits and supply wiring should not become hazardous.
4. The AC adapter must plug in to the right supply voltage. Make sure that the supplied AC voltage is correct and stable. If the input AC voltage is over 10% lower than the standard may cause the IP-DSLAM to malfunction.
5. Do not allow anything to rest on the power cord of the AC adapter, and do not locate the product where anyone can walk on the power cord.
6. Generally, when installed after the final configuration, the product must comply with the applicable safety standards and regulatory requirements of the country in which it is installed. If necessary, consult for technical support.
7. A rare condition can create a voltage potential between the earth grounds of two or more buildings. If products installed in separate building are interconnected, the voltage potential can cause a hazardous condition. Consult a qualified electrical consultant to determine whether or not this phenomenon exists and, if necessary, implement corrective action before interconnecting the products. If the equipment is to be used with telecommunications circuit, take the following precautions:
   - Never install telephone wiring during a lightning storm.
   - Never install telephone jacks in wet location unless the jack is specially designed for wet location.
   - Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
   - Use caution when installing or modifying telephone lines (other than a cordless telephone) during an electrical storm. There is a remote risk of electric shock from lightning.
   - Do not use a telephone or other equipment connected to telephone lines to report a gas leak in the vicinity of the leak.

2.5. Power Connection

Fig. 2.2. DC & AC Power connector

The SA-ACE16 provide both AC and DC power model (As fig. 2.3. displays). Use the following procedures to connect the office power to the SA-ACE16 system.

DC Power

1. Power off the voltage supply connection. Caution is needed since there may be dangerous levels of voltage and current present.
2. Use 16 AWG stranded wire to connect office battery supply leads from the fuse panel on the equipment rack to the terminal “-48 V” on the power connector of SA-ACE16.
3. Use 16 AWG stranded wire to connect RTN leads from the fuse panel on the equipment rack to the terminals “RTN” on the power connector of SA-ACE16.
4. Grounding the terminals “F.GND” on the power connector of SA-ACE16.
5. Power on the voltage supply connection.

AC Power

1. Use the provided AC power code to connect to the AC power.
2. Make sure the ground is provided at power inlet.

2.6. Loop Connection

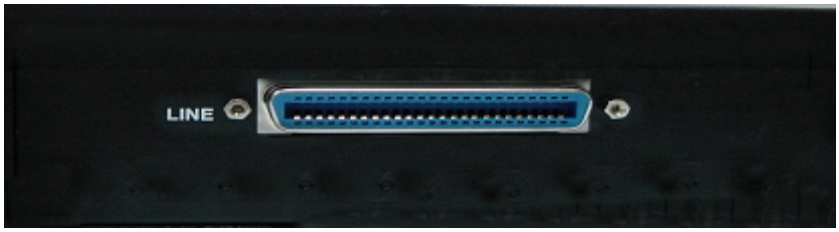


Fig. 2.3. SA-ACE16 Rear View

SA-ACE16 Loop Connection

As fig. 2.3. displays, there is a 50-pin female Centronics connector marked “LINE” connects the G.SHDSL loops to the DSL CPEs.

2.7. CID Connection

Connect the cable between your PC and CID port on the front panel of the SA-ACE16. Please refer to the Appendix-A for pin assignment.

2.8. Installation with CPE and B-RAS

Step 1 Connecting line connector to the G.SHDSL line with DSL patch cord

Step 2 Connecting CPE from G.SHDSL line

Step 3 Connecting the power adapter to SA-ACE16

Step 4 Connecting SA-ACE16 to B-RAS or Router

Step 5 Connecting the console port for CLI

2.9. Ways of Management Connection

This section will tell you how to connect and manage your SA-ACE16 through EmWeb and CLI.

2.10. Embedded Web Interface (EmWeb)

The embedded Web Interface (EmWeb), comprised of HTML files, is more user- friendly than CLI for your configuring SA-ACE16. The HTML files embedded in SA-ACE16 are dynamically linked to the system’s functional command sets. You can access the EmWeb from any Web Browser.

Following the following procedure to connect the embedded Web management interface:

Establish a connection to the internet

Open the Web browser

Enter the IP-address of the SA-ACE16 (Default IP: 192.168.100.111)

Log in as usual. (User account: **admin**; Password: **admin**)

To access any menu item on EmWeb, simply click on the item you want. The corresponding work screen will then appear on the right side frame. By pressing the Apply button will allow you to achieve your configuration, whereas pressing Cancel button will clear all your changes without applying them. In some menus, there will be Modify item will allow you to modify the existing configuration.

2.11. Command Line Interface (CLI)

The Command Line Interface is the most primary character based configuration interface. Some of configurations not provided in EmWeb can be configured through CLI. You can access CLI from the terminal emulation software.

The procedure of connecting to the CLI is as follows:

Start up the terminal emulation software on the management station.

If necessary, reconfigure the terminal-emulation software to match the switch console port settings.

Bits per second	9600
Data bits	8
Parity	None
Stop bits	1
Flow control	None

Log in as usual.

2.12. Telnet Client

SA-ACE16 supports only one Telnet client that you can use to connect with. Telnet provides a simple terminal emulation that allows you to see and interact with the CLI of SA-ACE16. As with any remote connection, the network interface IP-address for the SA-ACE16 must be established.

3. SYSTEM ADMINISTRATION WITH EMWEB

This chapter provides all the instruction and procedure necessary for you to administer your SA-ACE16 with EmWeb interface.

3.1. Log In with Embedded Web Interface

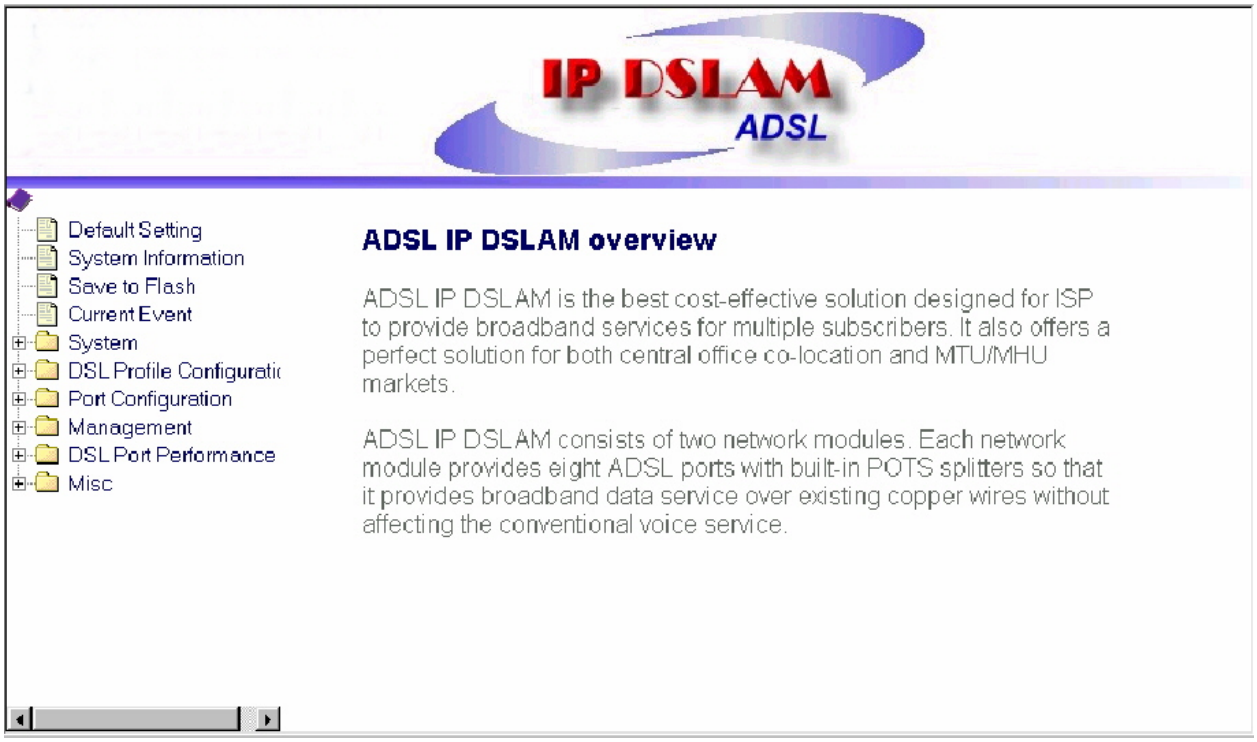
This section describes how to log into Embedded Web Interface.

Open a web browser with the default IP address: http://192.168.100.111

The log in screen appears as follows:

Enter your user name. If it is an initial installation, enter admin for user name.

Enter your password. If it is an initial installation, enter admin for password.



Note! *For safety concern, it is recommended to change the password. For changing the password, go to the Changing Password in the System menu.*

3.2. Embedded Web Interface Menu

This section describes the overview of the embedded Web interface menu, EmWeb. After your successfully logging into the EmWeb, the screen will appears as follows:

Default Setting

Display the information of default (factory) setting of your SA-ACE16. *See page 22.*

System Information

Display the system time, system up time, system up period of your SA-ACE16. It also provides you with the information of software version, hardware version. *See page 23.*

Save to Flash

Allow you to save your configuration in Flash. *See page 24.*

Current Event

Allow you to view the alarm and event status of your SA-ACE16. *See page 25*.

System

Set Port Filter: Allow you configure the port filtering function. See page 26.

System IP / Location: Allow you to configure the IP-address and location of your SA-ACE16. See page 26.

System Date and Time: Allow you to configure the date and time of your SA-ACE16. *See page 27.*

Changing Password: Allow you to change your password. *See page 28.*

DSL Profile Configuration

Create Line Profile: Allow you to create DSL line profile. *See page 28.*

Create Alarm Profile: Allow you to create DSL alarm profile. *See page 30.*

Current Line Profile: Allow you to view, modify, or delete existing DSL line profiles. *See page 30.*

Current Alarm Profile: Allow you to view, modify, or delete existing DSL alarm profiles. *See page 31.*

Port Configuration

DSL Port configuration: Allow you to display, modify and delete the status of the port. It provides the configuration of a port's status. *See page 31.*

PVC Configuration: Allow you to configure PVC and VID on a port and set the priority. It also provides the modification and delete function. *See page 32.*

List of Subscriber: Allow you to view the existing information of subscribers and modify them. *See page 33.*

Management

SNMP: Allow you to configure SNMP access parameters and trap IPs. *See page 34.*

Management IP: Allow you to configure the management IPs so that only with those configured management IPs can access to your SA-ACE16 remotely. *See page 34.*

DSL Port Performance

Physical Layer Info: Allow you to view the performance information on physical layer by specifying the definite unit. *See page 35.*

Channel Layer Info: Allow you to view the performance information on channel layer by specifying the definite unit. *See page 36.*

Current Phy-Layer PM: Allow you to view the physical layer performance collected within current 15 minutes and a day duration. *See page 35.*

Current Channel-Layer PM: Allow you to view the channel layer performance collected within current 15 minutes and a day duration. *See page 38.*

15 MIN Phy-Layer PM: Allow you to view the physical layer performance during previous 15 minutes interval. *See page 37.*

1 DAY Phy-Layer PM: Allow you to view the physical layer performance during previous 1 day interval. *See page 42.*

15 MIN Channel-Layer PM: Allow you to view the channel layer performance during previous 15 minutes interval. *See page 43.*

1 DAY Channel-Layer PM: Allow you to view the channel layer performance during previous 1 day interval. *See page 44.*

3.3. Default (Factory) Configuration Settings {Default Setting}

This section describes how to get the information of the default setting of your SA-ACE16.

Click on “Default Setting” from the SA-ACE16 Main Menu.

The Default Setting screen appears as follows:

Default Settings	
SNMP:	community: “public” no In-band management channel
IP	IP: 192.168.100.111 Mask: 255.255.255.0 Gateway: 192.168.100.1
System	Bridge–mode Port-Filter (Port-based VLAN) : Enable
DSL Port	“up” for all ports
VCC connection	8/81 (vpi/vci) for all ports VLAN – tag: disable
DSL profile	named “DEFAULT” 1) tx mode: “adapt At Startup” 2) Line type: “Interleaved” 3) Target SNR margin: “6 dB” 4) mim tx rate: “32 Kbps” 5) max tx rate at ATU-C: “2304 Kbps” 6) max tx rate at ATU-R: “2304 Kbps”. 7) interleave delay: “16 milliseconds”
Alarm profile	named “DEFAULT” ATU-C side: Thresh15MinLofs – 0 sec Thresh15MinLoss – 0 sec Thresh15MinLols – 0 sec Thresh15MinLprs – 0 sec Thresh15MinEss – 0 sec initial failure trap – Enable ATU-R side: Thresh15MinLofs – 0 sec Thresh15MinLoss – 0 sec Thresh15MinLols – 0 sec Thresh15MinLprs – 0 sec

3.4. Displaying the System Information of your SA-ACE16 {System Information}

This section describes how to get the information of your SA-ACE16.

Click on “System Information” from the IP DSLAM Main Menu.

The System Information screen appears as follows:

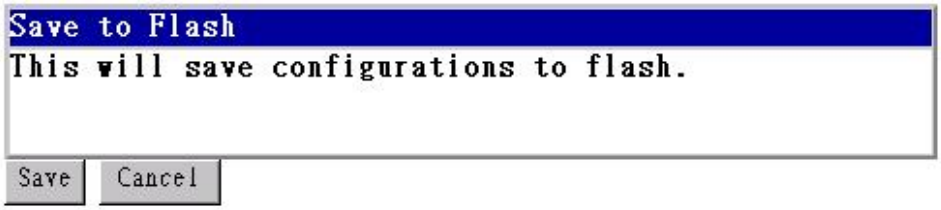
System Information			
Current Time:	2005/02/16 12:16:33		
System Up Time:	2005/02/16 10:49:40		
System Up Period:	0 day 01:26:53		
	Hardware Version	*Software Version*	*Serial Number*
AccessGain	2.0-2-GSI1.0(A)-GSI1.0(A)-2M-60	3.03	04-00-49

3.5. Save your Configuration to Flash {Save to Flash}

This section describes how to save the configuration you have configured to flash. This function will be needed whenever you want to restart your SA-ACE16 with the updated configuration.

Click on “Save to Flash” from the IP-DSLAM Main Menu.

The Save to Flash screen appears as follows:



2. Submit the Save button.

3.6. Displaying Current Event {Current Event}

This section describes how to view the current alarm and event status.

Click on “Current Event” from the IP-DSLAM Main Menu.

The Current Event screen appears as follows:

<next page> <last page>

Current Event

NO	Date	Time	Source {System / Unit no. / (unit no./port no.)}	Severity {Major/Minor/Inform}	Event Description
1	2005/11/07	10:23:56	p-5 atu-r	inform	port up
2	2005/11/07	10:23:56	p-5 atu-r	inform	loss of signal (off)
3	2005/11/07	10:23:56	p-5 atu-c	inform	port up
4	2005/11/07	10:23:56	p-5 atu-c	inform	loss of signal (off)
5	2005/11/07	10:23:12	p-5 atu-r	major	loss of signal
6	2005/11/07	10:23:12	p-5 atu-c	major	loss of signal
7	2005/11/07	09:54:56	system	inform	user admin logout
8	2005/11/07	09:44:13	system	inform	user admin login
9	2005/11/07	09:19:16	p-5 atu-r	inform	port up
10	2005/11/07	09:19:16	p-5 atu-r	inform	loss of signal (off)
11	2005/11/07	09:19:16	p-5 atu-c	inform	port up
12	2005/11/07	09:19:16	p-5 atu-c	inform	loss of signal (off)
13	2005/11/07	09:18:49	p-5 atu-r	major	loss of signal
14	2005/11/07	09:18:49	p-5 atu-c	major	loss of signal
15	2005/11/06	18:28:18	p-1 atu-r	inform	port up
16	2005/11/06	18:28:18	p-1 atu-r	inform	loss of signal (off)
17	2005/11/06	18:28:18	p-1 atu-c	inform	port up
18	2005/11/06	18:28:18	p-1 atu-c	inform	loss of signal (off)
19	2005/11/06	18:27:51	p-1 atu-r	major	loss of signal
20	2005/11/06	18:27:51	p-1 atu-c	major	loss of signal

DELETE ALL

2. Click on next page item in order to view more events. The displayed data will be 20 items per page and it can display totally up to 960 items.

3. Click on DELETE ALL button in order to delete all events.

3.7. Configuring SA-ACE16

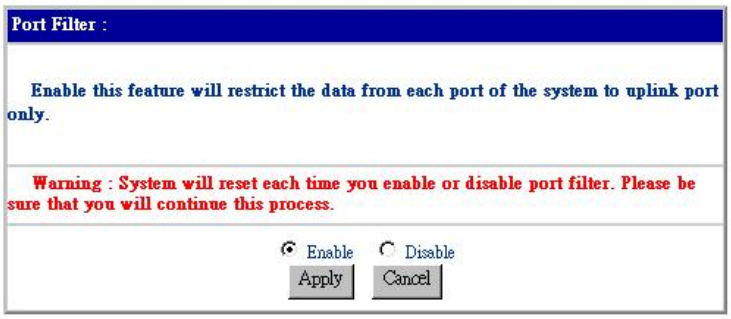
This section describes how to configure your SA-ACE16 by selecting System from EmWeb Menu. This section will cover all the function from System Menu. It includes:

3.8. Configuring Port Filtering {Set Port Filter}

Allow you to configure the port filtering function.

Click on “Set Port Filter” from the System Menu.

The Set Port Filter screen appears as follows:



Click on Enabled button to allow each DSL port to communicate back and forth with the uplink Ethernet port only.

By selecting Disabled button you allow all DSL ports to communicate with each other and also with the uplink Ethernet port.

Press Apply button in order to submit your configuration.

Note! *Make sure to save all the configurations in flash by selecting Save to Flash from main menu when you want to restart your SA-ACE16.*

3.9. Configuring IP and Location {System IP / Location}

Allow you to configure the system IP-address and location.

Click on “System IP / Location” from the System Menu.

The System IP / Location screen appears with the default setting and can be configured as follows:

IP / System Information Settings	
IP-address:	10.20.0.1 (format) (***.***.***.***)
Subnet Mask:	255.0.0.0 (format) (***.***.***.***)
Gateway:	10.20.0.1 (format) (***.***.***.***)
System Name:	AccessGain
Location:	
Contact:	

Configure the IP-address you want to set, say *192.168.0.76*

Configure the subnet mask with reference to IP-address, say *255.255.255.0*

Configure the gateway with reference to IP-address, say *192.168.0.1*

Configure the system name you want to set, say *IP-DSLAM*

Configure the location of your SA-ACE16, say *Main Building*

Configure the contact information for servicing SA-ACE16, say *help@ISP.com*

Click on the Apply button to submit your changes, or click on the Cancel button if you want to clear all the values you have configured.

3.10. Configuring Date and Time {System Date and Time}

Allow you to configure the date and time of the system.

Click on “System Date and Time” from the System Menu.

The System Date and Time screen appears with the default setting and can be configured as follows:

System Date and Time Settings		
Year:	2001	(1970~2050)
Month:	01	(1~12)
Day:	01	(1~31)
Hour:	01	(0~23)
Minute:	01	(0~59)
Second:	01	(0~59)

Apply Cancel

Configure the year you want to set, say *2005*

Configure the month you want to set, say *02*

Configure the day you want to set, say *01*

Configure the hour you want to set, say *20*

Configure the minute you want to set, say *01*

Configure the second you want to set, say *01*

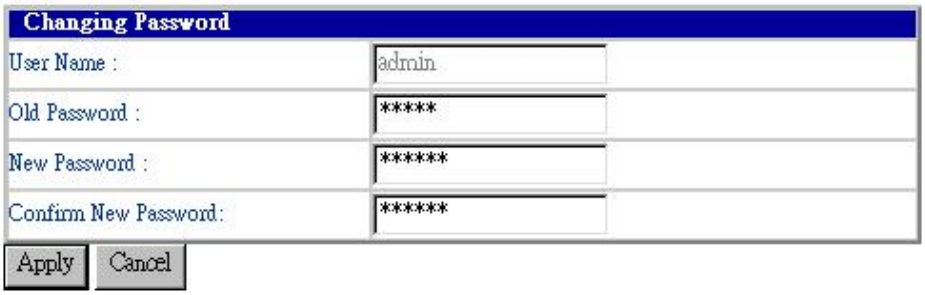
Click on the Apply button to submit your changes, or click on the Cancel button if you want to clear all the values you have configured.

3.11. Changing your Password {Changing Password}

Allow you to change your password.

Click on “Changing Password” from the System Menu.

The Changing Password screen appears with your user name and your password can be changed as follows:



Enter your old password.

Enter your new password that you want to change.

Enter your new password again to confirm.

Click on the Apply button to submit your changes, or click on the Cancel button if you want to clear all the values you have configured.

3.12. DSL Line Configuration

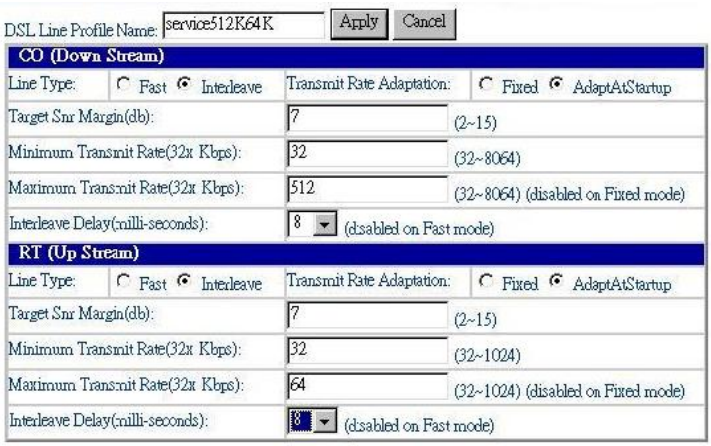
This section covers how to create, display, modify, or delete the line profile and alarm profile by selecting DSL Line Configuration from EmWeb Menu. This section will cover all the function from DSL Line Configuration Menu.

3.13. Creating a Line Profile {Create Line Profile}

This section describes how to create an DSL line profile.

Click on “Create Line Profile” of DSL Profile configuration Menu.

The Create Line Profile screen appears as follows:



Configure the name of line profile, say *SERVICE512K64K*.

Configure the line profile on CO side (Down Stream). For example,

Configure the line type, transmit rate adaptation, target SNR margin, minimum transmit rate, maximum transmit rate, and interleave delay as *Interleaved, AdaptAtStartup, 7* db, *32* Kbps, *512* Kbps, and *8* milli-seconds.

Configure the line profile on RT side (Up Stream). For example,

Configure the line type, transmit rate adaptation, target SNR margin, minimum transmit rate, maximum transmit rate, and interleave delay as *Interleaved, AdaptAtStartup, 7* db, *32* Kbps, *64* Kbps, and *8* milliseconds.

Click on the Apply button to submit your changes, or click on the Cancel button if you want to clear all the values you have configured.

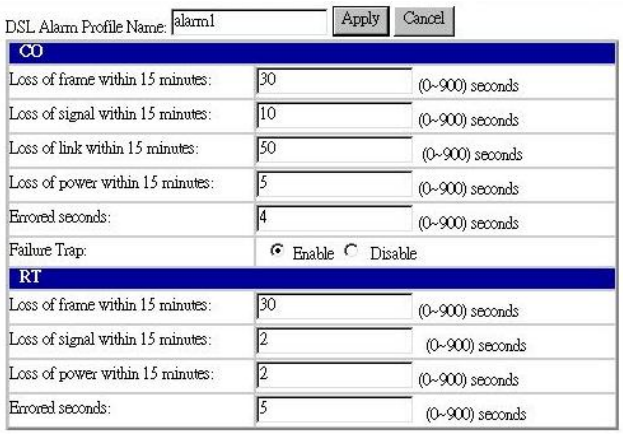
Note! *(1) If you configure "Transmit Rate Adaptation" as "Fixed", it is recommended to configure the value of "minimum transmit rate" and "maximum transmit rate" on CO side or RT side the same. However, the value of CO side and RT side may not be the same. 2) Line profile can be created maximum up to 10 profiles.*

3.14. Creating a Alarm Profile {Create Alarm Profile}

This section describes how to create an DSL alarm profile.

Click on “Create Alarm Profile” of DSL Profile configuration Menu.

The Create Alarm Profile screen appears as follows:



Configure the name of alarm profile as *alarm1*.

Configure the alarm profile on CO side (Down Stream). For example,

Configure the Lofs, Loss, Lols, Lprs, Ess, and initial failure trap as *30 sec, 10 sec, 50 sec*, *5 sec*, *4 sec*, and *Enable* initial failure trap.

Configure the alarm profile on RT side (Up Stream). For example,

Configure the Lofs, Loss, Lprs, and Ess as *30 sec, 2 sec, 2 sec*, and *5 sec*.

Click on the Apply button to submit your changes, or click on the Cancel button if you want to clear all the values you have configured.

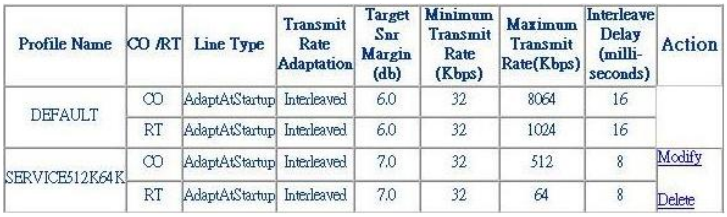
Note! *The alarm profile can be created maximum up to 10 profiles.*

3.15. Displaying and Modifying a Line Profile {Current Line Profile}

Allow you to view, modify, or delete existing DSL line profiles.

Click on “Current Line Profile” of the DSL Profile configuration Menu.

The Current Line Profile screen appears as follows:



Profile Name	CO /RT	Line Type	Transmit Rate Adaptation	Target Snr Margin (db)	Minimum Transmit Rate (Kbps)	Maximum Transmit Rate(Kbps)	Interleave Delay (milli-seconds)	Action
DEFAULT	CO	AdaptAtStartup	Interleaved	6.0	32	8064	16	
	RT	AdaptAtStartup	Interleaved	6.0	32	1024	16	
SERVICE512K64K	CO	AdaptAtStartup	Interleaved	7.0	32	512	8	Modify
	RT	AdaptAtStartup	Interleaved	7.0	32	64	8	Delete

Click on Modify button to modify the specified profile.

Click on Delete button to delete the specified profile.

3.16. Displaying and Modifying a Alarm Profile {Current Alarm Profile}

Allow you to view, modify, or delete existing DSL alarm profiles.

Click on “Current Alarm Profile” of the DSL Profile configuration Menu.

The Current Alarm Profile screen appears as follows:

Profile Name	CO /RT	Loss of frame within 15 minutes	Loss of signal within 15 minutes	Loss of link within 15 minutes	Loss of power within 15 minutes	Errored seconds	Failure Trap	Action
DEFAULT	CO	0	0	0	0	0	disable	
	RT	0	0	-	0	0	-	
ALARM1	CO	30	10	50	5	4	enable	Modify
	RT	30	2	-	2	5	-	Delete

Click on Modify button to modify the specified profile.

Click on Delete button to delete the specified profile.

3.17. Port Configuration

This section covers how to configure ports and subscriber information by selecting Port Configuration from EmWeb Menu. This chapter will cover all the function from Port Configuration Menu.

3.18. DSL Port Configuration {DSL Port Configuration}

Allow you to display, modify and delete the status of the port. It also provides the configuration of enabling or disabling a port and attaching the specific line profile and alarm profile to a port. The procedures are as follows:

1. Click on “DSL Port Configuration” of the Port configuration Menu.

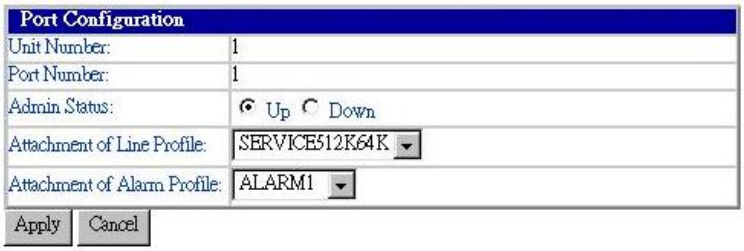
For first time configuration, the DSL Port Configuration screen appears with the default setting as follows:

Port Settings:

Unit No 1 Apply

Unit No.	Port No.	Admin Status	Line Profile Name	Alarm Profile Name	Operating Status	Alarm Status	Trap	Action
1	1	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	2	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	3	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	4	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	5	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	6	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	7	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	8	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	9	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	10	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	11	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	12	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	13	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	14	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	15	up	DEFAULT	DEFAULT	down	LPR	enable	Modify
1	16	up	DEFAULT	DEFAULT	down	LPR	enable	Modify

2. Click on Modify button to configure the specific port, says port 1. The screen will appear as follows:



3. Configure the administration status as “Up” or “Down”. Here in example, “Up” is configured.

4. Attach the line profile, says “SERVICE512K64K”

5. Attach the alarm profile, says “ALARM1”

Click on the Apply button to submit your changes, or click on the Cancel button if you want to clear all the values you have configured.

3.19. PVC Configuration {PVC Configuration}

Allow you to configure PVC (Permanent Virtual Connection) and VID (VLAN ID) on a port and setting the priority. It also provides the modification and delete function. The procedures are as follows:

1. Click on “PVC Configuration” of the Port configuration Menu.

For the first time configuration, the PVC Configuration screen appears with the default setting as follows:

PVC Settings:

Unit No 1 Apply

Unit No.	Port No.	PVC					Action
		VPI	VCI	Connection Status	VID	Priority	
1	1	8	81	up	-	-	Modify Delete
1	1	-	-	-	-	-	Modify Delete
1	2	8	81	up	-	-	Modify Delete
1	2	-	-	-	-	-	Modify Delete
1	3	8	81	up	-	-	Modify Delete
1	3	-	-	-	-	-	Modify Delete
1	4	8	81	up	-	-	Modify Delete
1	4	-	-	-	-	-	Modify Delete
1	5	8	81	up	-	-	Modify Delete
1	5	-	-	-	-	-	Modify Delete
1	6	8	81	up	-	-	Modify Delete
1	6	-	-	-	-	-	Modify Delete
1	7	8	81	up	-	-	Modify Delete
1	7	-	-	-	-	-	Modify Delete
1	8	8	81	up	-	-	Modify Delete
1	8	-	-	-	-	-	Modify Delete
1	9	8	81	up	-	-	Modify Delete
1	9	-	-	-	-	-	Modify Delete
1	10	8	81	up	-	-	Modify Delete
1	10	-	-	-	-	-	Modify Delete
1	11	8	81	up	-	-	Modify Delete
1	11	-	-	-	-	-	Modify Delete
1	12	8	81	up	-	-	Modify Delete
1	12	-	-	-	-	-	Modify Delete
1	13	8	81	up	-	-	Modify Delete
1	13	-	-	-	-	-	Modify Delete
1	14	8	81	up	-	-	Modify Delete
1	14	-	-	-	-	-	Modify Delete
1	15	8	81	up	-	-	Modify Delete
1	15	-	-	-	-	-	Modify Delete
1	16	8	81	up	-	-	Modify Delete
1	16	-	-	-	-	-	Modify Delete

2. Click on Modify button to configure the specific port, says port1. The screen will appear as follows:

3. Configure the VPI, says 0

4. Configure the VCI, says 50

5. Configure the administration status of PVC “Up” or “Down”, says “Up.

6. Configure the VID of the port. Here in example, “4002” is configured.

7. Configure the priority of PVC, says 7. The priority of 0 to 7 is from the lowest to the highest.

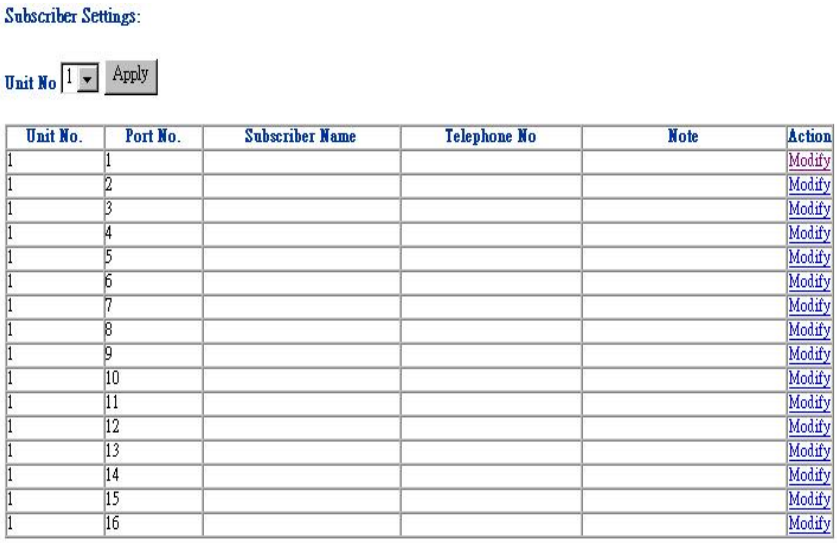
8. Click on the Apply button to submit your changes, or click on the Cancel button. If you want to clear all the values you have configured.

3.20. List of Subscriber {List of Subscriber}

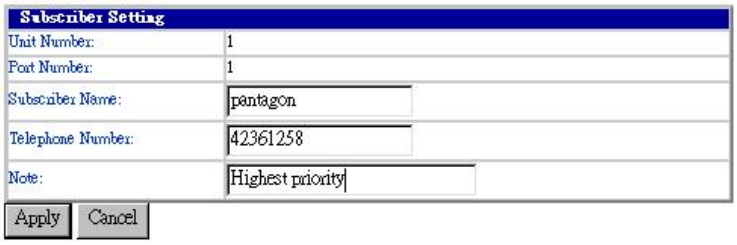
Allow you to view the existing information of subscribers and modify them. The procedures are as follows:

1. Click on “List of Subscriber” of the Port configuration Menu.

For the first time configuration, the List of Subscriber screen appears with the default setting as follows:



2. Click on Modify button to configure the specific port, says port1. The screen will appear as follows:



3. Configure the subscriber name as you want, says Pentagon.

4. Configure the telephone number of subscriber, says 42361258.

5. Write Note for your reference if you need.

6. Click on the Apply button to submit your changes, or click on the Cancel button if you want to clear all the values you have configured.

3.21. Management Configuration

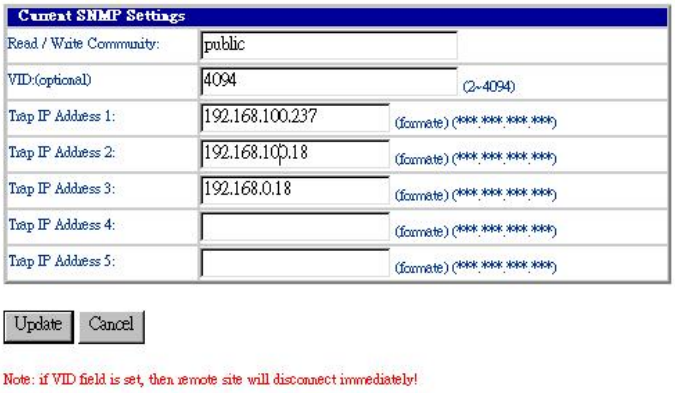
This section covers how to configure SNMP access parameters and management IP by selecting Management from EmWeb Menu. This section will cover all the function from Management Menu. It includes:

3.22. Configuring SNMP Access Parameters and Trap IPs {SNMP}

Allow you to configure the SNMP access parameters and trap IPs. The procedures are as follows:

1. Click on “SNMP” of the Management Menu.

For the first time configuration, the SNMP screen appears with the default setting of the community string” public” as follows:



2. Configure the VID (VLAN ID) of the system, says 4094.

3. Configure the trap IP Addresses, as you want. Here in example, we create 3 IPs. The trap IP can be created maximum up to 5.

4. Click on the Apply button to submit your changes, or click on the Cancel button if you want to clear all the values you have configured.

3.23. Configuring Management IP {Management IP}

Allow you to configure the management IPs so that only with those configured management IPs can access to your SA-ACE16 remotely. The procedures are as follows:

Click on “Management IP” of the Management Menu.

The Management IP screen appears as follows:

Configure the management group, as you want. The management IP group can be created maximum up to 5 groups. Here we take 3 groups as example.
Click on the Update button to submit your changes, or click on the Cancel button if you want to clear all the values you have configured.

3.24. Performance Monitor

This section covers performance monitor by selecting DSL Port Performance from EmWeb Menu. It includes:

3.25. DSL Physical Layer PM {Physical Layer Info}

Allow you to view the performance information on physical layer by specifying the definite unit. The procedures are as follows:

1. Click on “Physical Layer Info” of DSL Port Performance Menu.

The Physical Layer Info screen appears as follows:

Physical Layer Information:

Unit No 1 Apply

Unit No.	Port No.	CO / RT	SNR Margin	Attenuation	Status	Output Power	Attainable Rate
1	1	CO	36.0	1.0	NO DEFECT	3	3552
		RT	36.0	0.0	NO DEFECT	10	704
1	2	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	3	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	4	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	5	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	6	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	7	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	8	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	9	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	10	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	11	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	12	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	13	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	14	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	15	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0
1	16	CO	0.0	0.0	LOS	0	0
		RT	0.0	0.0	LOS	0	0

Note! *In this example, only port 1 is connected with CPE and that is why only “No defect” value is displayed in the unit 1/port 1 row.*

Table 3.1. Physical Layer Info Field Definitions

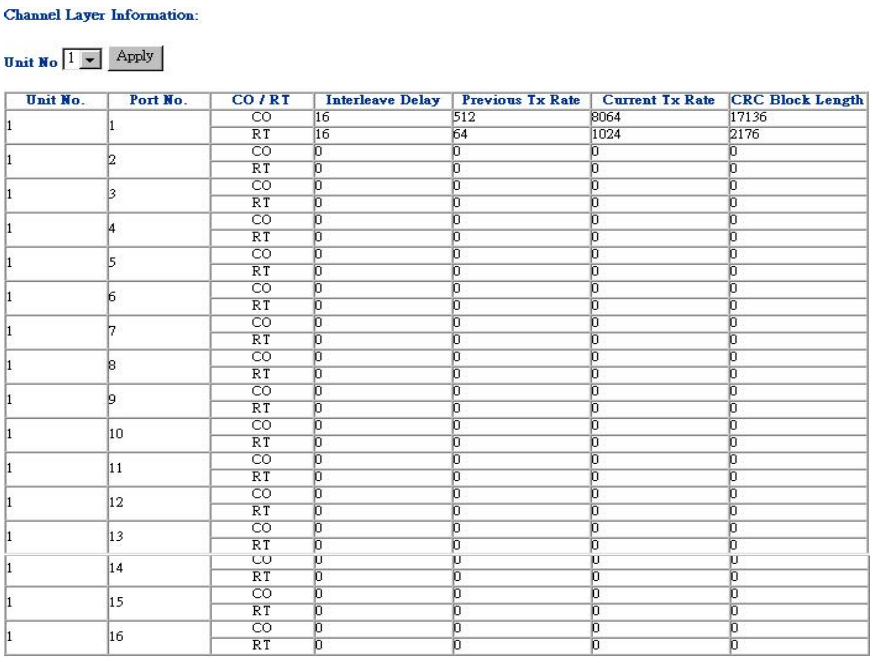
Field	*Definition*
SNR margin	Noise margin value. (dB)
Attenuation	Difference in the total power transmitted and the total power received by the peer atu. (db)
Status	Current status of the ATU line. The possible values displayed are as follows: No defect: there are no defect on the line los: atu-r failure due to not receiving signal lpr: atu-r failure due to loss of signal
output power	Total output power transmitted by atu. (dBm)
attainable rate	The maximum currently attainable data rate by the atu. (kbps)

3.26. DSL Channel Layer PM {Channel Layer Info}

Allow you to view the performance information on channel layer by specifying the definite unit. The procedures are as follows:

1. Click on “Channel Layer Info” of DSL Port Performance Menu.

The Channel Layer Info screen appears as follows:



Unit No.	Port No.	CO / RT	Interleave Delay	Previous Tx Rate	Current Tx Rate	CRC Block Length
1	1	CO	16	512	8064	17136
		RT	16	64	1024	2176
1	2	CO	0	0	0	0
		RT	0	0	0	0
1	3	CO	0	0	0	0
		RT	0	0	0	0
1	4	CO	0	0	0	0
		RT	0	0	0	0
1	5	CO	0	0	0	0
		RT	0	0	0	0
1	6	CO	0	0	0	0
		RT	0	0	0	0
1	7	CO	0	0	0	0
		RT	0	0	0	0
1	8	CO	0	0	0	0
		RT	0	0	0	0
1	9	CO	0	0	0	0
		RT	0	0	0	0
1	10	CO	0	0	0	0
		RT	0	0	0	0
1	11	CO	0	0	0	0
		RT	0	0	0	0
1	12	CO	0	0	0	0
		RT	0	0	0	0
1	13	CO	0	0	0	0
		RT	0	0	0	0
1	14	CO	0	0	0	0
		RT	0	0	0	0
1	15	CO	0	0	0	0
		RT	0	0	0	0
1	16	CO	0	0	0	0
		RT	0	0	0	0

Table 3.2. Channel Layer Information Field Definitions

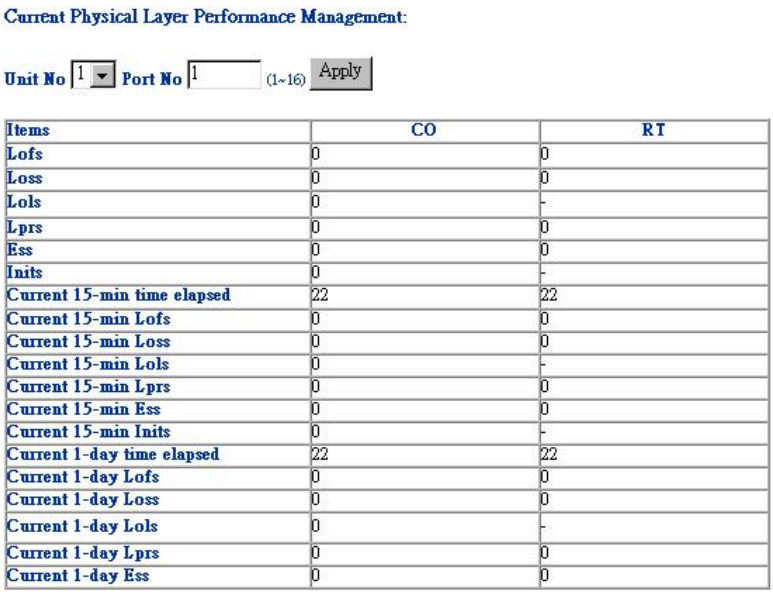
Field	*Definition*
Interleave delay	Interleave delay for this channel. (milli-seconds)
Previous TX rate	previous actual transmit rate on this channel if DSL loop retain. (kbps)
Current TX rate	Actual transmit rate on this channel. (kbps)
CRC block length	The length of the channel data-block on which the CRC operates

3.27. DSL Physical Layer PM within Current 15 Minutes and a Day Duration {Current Phy-Layer PM}

Allow you to view the physical layer performance collected within current 15 minutes and a day duration. The procedures are as follows:

1. Click on “Current Phy-Layer PM” of the DSL Port Performance Menu.

The Current Phy-Layer PM screen appears as follows:



Current Physical Layer Performance Management:

Unit No 1 Port No 1 (1~16) Apply

Items	CO	RT
Lofs	0	0
Loss	0	0
Lols	0	-
Lprs	0	0
Ess	0	0
Inits	0	-
Current 15-min time elapsed	22	22
Current 15-min Lofs	0	0
Current 15-min Loss	0	0
Current 15-min Lols	0	-
Current 15-min Lprs	0	0
Current 15-min Ess	0	0
Current 15-min Inits	0	-
Current 1-day time elapsed	22	22
Current 1-day Lofs	0	0
Current 1-day Loss	0	0
Current 1-day Lols	0	-
Current 1-day Lprs	0	0
Current 1-day Ess	0	0

Table 3.3. Current Phy-Layer PM Information Field Definitions

Field	*Definition*
CO	down stream
RT	up stream
lofs	number of lof failures since reset
loss	number of los failures since reset
lols	number of lol failures since reset
lprs	number of lpr failures since reset
ess	number of error seconds since reset
inits	number of initialization attempts since reset. it includes both successful and failed attempts
current 15-min time elapsed	number of seconds that have elapsed within the current 15 minutes. a full interval is 900 seconds
current 15-min lofs	number of seconds in the current 15-minute interval during which lof was detected.
current 15-min loss	number of seconds in the current 15-minute interval during which los was detected
current 15-min lols	number of seconds in the current 15-minute interval during which lol was detected.
current 15-min lprs	number of seconds in the current 15-minute interval during which lpr was detected
current 15-min ess	number of error seconds in the current 15-minute interval
current 15-min inits	number of inits in the current 15-minute interval. it includes both successful and failed attempts
current 1-day time elapsed	number of seconds that have elapsed since the beginning of the current 1-day interval
current 1-day lofs	number of seconds in the current 1 day interval during which lof was detected
current 1-day loss	number of seconds in the current 1 day interval during which los was detected
current 1-day lols	number of seconds in the current 1 day interval during which lol was detected
current 1-day lprs	number of seconds in the current 1 day interval during which lpr was detected
current 1-day ess	number of error seconds in the current 1 day interval

3.28. DSL Channel Layer PM within Current 15 Minutes and a Day Duration {Current Channel-Layer PM}

Allow you to view the channel layer performance collected within current 15 minutes and 1-day duration.

1. Click on “Current Channel-Layer PM” of the DSL Port Performance Menu.

The Current Channel-Layer PM screen appears as follows:

Current Channel Layer Performance Management:

Unit No 1 Port No 1 (1~16) Apply

Items	CO	RT
In error blocks	15	15
Out error blocks	3	3
Received blocks	6159	6159
Transmitted blocks	6159	6159
Corrected blocks	12	1
Uncorrected blocks	0	0
Current 15-min time elapsed	105	105
Current 15-min received blocks	6159	6159
Current 15-min transmitted blocks	6159	6159
Current 15-min corrected blocks	12	1
Current 15-min uncorrected blocks	0	0
Current 1-day time elapsed	105	105
Current 1-day received blocks	6159	6159
Current 1-day transmitted blocks	6159	6159
Current 1-day corrected blocks	12	1
Current 1-day uncorrected blocks	0	0

Table 3.4. Current Channel-Layer PM Information Field Definitions

Field	*Definition*
CO	down stream
RT	up stream
in octets	the total number of bytes received since the last agent reset
out octets	the total number of bytes transmitted since the last agent reset
in error blocks	the total number of blocks received with errors since the last agent reset
out error blocks	the total number of blocks transmitted with errors since the last agent reset
received blocks	the total number of blocks of data received since the last agent reset
transmitted blocks	the total number of blocks of data transmitted since the last agent reset
corrected blocks	number of corrected blocks of data transmitted since the last agent reset
uncorrected blocks	number of corrected blocks of data transmitted since the last agent reset
current 15-min time elapsed	number of seconds that have elapsed since the start of the current 15-minute interval.
current 15-min received blocks	number of blocks of data received during the current 15-minute interval
current 15-min transmitted blocks	number of blocks of data transmitted during the current 15-minute interval
current 15-min corrected blocks	number of corrected blocks of data transmitted during the current 15-minute interval
current 15-min uncorrected blocks	number of uncorrected blocks of data transmitted during the current 15-minute interval
current 1-day time elapsed	number of seconds that have elapsed since the start of the current day interval
current 1-day received blocks	number of blocks of data received during the current day interval.
current 1-day transmitted blocks	number of blocks of data transmitted during the current day interval
current 1-day corrected blocks	number of corrected blocks of data transmitted during the current day interval
current 1-day uncorrected blocks	number of uncorrected blocks of data transmitted during the current day interval

3.29. DSL Physical Layer PM within Previous 15 Minutes Duration {15 MIN Phy-Layer PM}

Allow you to view the physical layer performance during previous 15 minutes interval.

1. Click on “15 MIN Phy-Layer PM” of the DSL Port Performance Menu.

The 15 MIN Phy-Layer PM screen appears as follows:

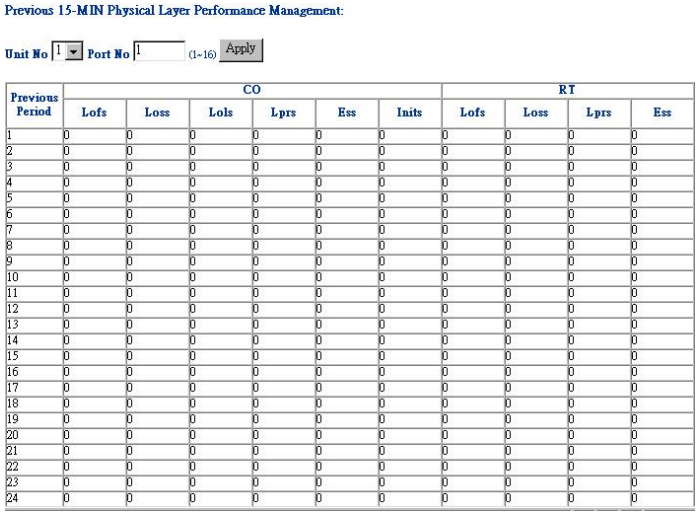


Table 3.5. 15 MIN Phy-Layer PM Information Field Definition

Field	*Definition*
CO	down stream
RT	up stream
lofs	counts of lof since agent reset within previous 15-min interval
loss	counts of los since agent reset within previous 15-min interval
lols	counts of lol since agent reset within previous 15-min interval. (but only on atu-c side)
lprs	counts of lpr since agent reset within previous 15-min interval
ess	counts of es since agent reset within previous 15-min interval
inits	counts of DSL line initialization attempts since agent reset, including both successful and failed attempts within previous 15-min interval. (but only on atu-c side)

3.30. DSL Physical Layer PM within Previous 1 Day Duration {1 DAY Phy-Layer PM}

Allow you to view the physical layer performance during previous 1 day interval.

1. Click on “1 DAY Phy-Layer PM” of the DSL Port Performance Menu.

The 1 DAY Phy-Layer PM screen appears as follows:

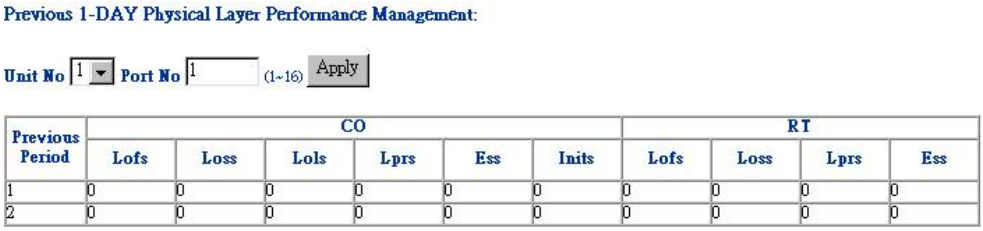


Table 3.6. 1-DAY Phy-Layer PM Information Field Definition

Field	*Definition*
CO	down stream
RT	up stream
lofs	counts of lof since agent reset within previous 1day interval
loss	counts of los since agent reset within previous 1day interval
lols	counts of lol since agent reset within previous 1day interval. (but only on atu-c side)
lprs	counts of lpr since agent reset within previous 1day interval
ess	counts of es since agent reset within previous 1day interval
inits	counts of DSL line initialization attempts since agent reset, including both successful and failed attempts within previous 1 day interval.(but only at atu-c side)

3.31. DSL Channel Layer PM within Previous 15 Minutes Duration {15 MIN Channel-Layer PM}

Allow you to view the channel layer performance during previous 15 minutes interval.

1. Click on “15 MIN Channel-Layer PM” of the DSL Port Performance Menu.

The 15 MIN Channel-Layer PM screen appears as follows:

Previous 15-MIN Channel Performance Management:

Unit No 1 Port No 1 (1~16) Apply

Previous Period	CO				RT			
	Received blocks	Transmitted blocks	Corrected blocks	Uncorrected blocks	Received blocks	Transmitted blocks	Corrected blocks	Uncorrected blocks
1	52915	52915	150	0	52915	52915	19	0
2	52952	52952	123	0	52952	52952	54	1
3	52914	52914	103	0	52914	52914	18	0
4	52953	52953	128	0	52953	52953	24	0
5	52915	52915	177	0	52915	52915	36	2
6	52950	52950	200	0	52950	52950	25	0
7	52914	52914	146	0	52914	52914	41	0
8	52953	52953	134	0	52953	52953	42	3
9	52911	52911	179	0	52911	52911	21	0
10	52969	52969	183	0	52969	52969	38	0
11	52954	52954	207	0	52954	52954	31	1
12	52971	52971	94	0	52971	52971	34	1
13	52954	52954	138	0	52954	52954	31	0
14	52912	52912	167	0	52912	52912	28	1
15	52956	52956	149	0	52956	52956	37	2
16	52911	52911	120	0	52911	52911	41	0
17	52956	52956	186	0	52956	52956	42	1
18	52910	52910	169	0	52910	52910	68	4
19	52955	52955	119	0	52955	52955	37	0
20	52910	52910	174	0	52910	52910	29	1
21	52955	52955	163	0	52955	52955	19	2
22	52911	52911	126	0	52911	52911	47	10
23	52955	52955	101	0	52955	52955	11	0

Table 3.7. 15 MIN Phy-Layer PM Information Field Definition

Field	*Definition*
CO	down stream
RT	up stream
received	the total number of blocks of data received during the previous 15min interval
transmitted	the total number of blocks of data transmitted during the previous 15min interval
corrected	number of corrected blocks of data transmitted during the previous 15min interval
uncorrected	number of uncorrected blocks of data transmitted during the previous 15min interval

3.32. DSL Channel Layer PM within Previous 1 Day Duration {1 DAY Channel-Layer PM}

Allow you to view the channel layer performance during previous 1 day interval.

1. Click on “1 DAY Channel-Layer PM” of the DSL Port Performance Menu.

The 1 DAY Channel-Layer PM screen appears as follows:

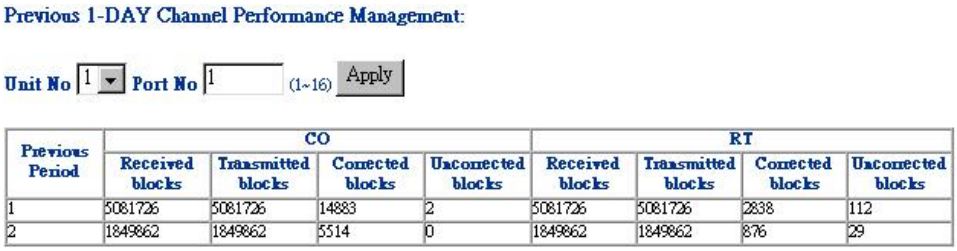


Table 3.8. 1 DAY Phy-Layer PM Information Field Definition

Field	*Definition*
co	down stream
rt	up stream
received	the total number of blocks of data received during the previous 1day interval
transmitted	the total number of blocks of data transmitted during the previous 1day interval
corrected	number of corrected blocks of data transmitted during the previous 1day interval
uncorrected	number of uncorrected blocks of data transmitted during the previous 1day interval

4. SYSTEM ADMINISTRATION WITH CLI

Command Line Interface (CLI) is the primary user interface to administrate the system. CLI can be accessed either from the CID port or telnet session. All CLI commands are simple strings designed for the administrator to manage your IP DSLAM easily.

4.1. Command Structure

There are three-level command structure used in the system. All commands have the following general format:

```
IP-DSLAM# <action>  Identifier  parameters
```

Action	Identify the specific function to be acted. For example, in the case of viewing the information of 16th port of SA-ACE16, you must enter the command “show port 16”. “show” is the <action>.
Identifier	Indicate the object of the specific function to be acted. For example, in the case of viewing the information of 16th port, you must enter the command “show port 16”; “port” is the <identifier>.
Parameter	Usually indicate the destination or configuring values. In parameter description, <> means the required fields in a command, whereas [ ] and | are the optional fields in a command. For example, in the case of viewing the information of 16th port, you must enter the command “show port 16” to; “16” is the parameters

Table 4.1. CLI Command - Action List

<action>	Description
show	Used to view information of the selected identifier and parameters.
add	Used to add configuration of objects according to the identifier and parameters. Parameters are used for selecting specific facility and arguments. For example, "16" specifies the 16th port of SA-ACE16.
config	Used to set or modify existing configuration of objects corresponding to the identifier and parameters. But lineprof name -default and alarmprof name default can not be configured.
delete	Used to delete configuration of objects corresponding to the identifier and parameters. If the delete action is confirmed, the configuration of objects will no longer exist.
help	Used to view the detailed usage of CLI commands.
history	Used to view the list of CLI commands that the user have used.
reset	Used to reset a port of system.
restart	Used to restart the system.
save	Used to save the configuration to Flash RAM.
default	Used to restore the default setting to system.
upgrade	Used to upgrade the system file.
exit	Used to terminate the CLI.

Table 4.2. CLI Command – Identifier List

<identifier>	Description
DSLchannel	Allow you to view the channel layer parameters of DSL lines.
DSLchintl	Allow you to view the performance statistics information collected on channel layer within 15-minutes or 1-day interval.
DSLchperf	Allow you to view the performance statistics collected on channel layer of DSL line.
DSLline	Allow you to configure the information of DSL line.
DSLphintl	Allow you to view the performance statistics information collected on physical layer within 15-minutes or 1-day interval.
DSLphperf	Allow you to view the performance statistics collected on physical layer of DSL lines.
DSLphysical	Allow you to view the physical layer parameters of DSL lines.
alarmprof	Allow you to configure the threshold values of all alarms.
connection	Allow you to configure the connection information of each port .
event	Allow you to view the events of system.
lineprof	Allow you to configure the DSL line profile.
manip	Allow you to configure the management IP.
port	Allow you to configure the status and information of each port.
portfilter	Allow you to set the configuration of port-based VLAN.
snmp	Allow you to configure VID and community for SNMP.
sysinfo	Allow you to configure the whole system information.
sysip	Allow you to configure IP of system.
time	Allow you to configure the current system date and time.
trapdest	Allow you to configure the trap destination.
subscriber	Allow you to configure the basic information of the subscriber of each DSL port.
user	Allow you to configure the user account.
vid	Allow you to view the vid information.

Table 4.3. Relation between <action> and <identifier>

<action>	*<identifier>*				
show	DSLchannel DSLphperf lineprof sysinfo user	DSLchintl DSLphysical manip sysip vid	DSLchperf alarmprof port subscriber	DSLline connection portfilter time	DSLphintl event snmp trapdest
add	alarmprof user	connection	lineprof	manip	trapdest
config	DSLline password sysinfo	alarmprof port sysip	connection portfilter time	lineprof snmp user	manip subscriber
delete	user alarmprof	event manip	trapdest	connection	lineprof
Help	show/add/config/delete/…… /show sysinfo/config time/……..				
history	None				
reset	port				
restart	None				
Save	None				
Default	None				
Upgrade	Enable / disable				
exit	None				

Table 4.4. CLI Command – Parameter List

<action>	*<parameter>*	*Description*
show <identifier>	all	Allow you to view all information.
	< port no.>	Allow you to view the specified port's information.
	< port no.> [c/r]	Allow you to view the CO or RT information by specifying a port (1 ~ 16).
<action>	*<parameter>*	*Description*
add alarmprof	<profile Name>	Setting alarm profile name.
(alarmprof-atuc)	<Thresh15MinLofs> <Thresh15MinLoss> <Thresh15MinLols> <Thresh15MinLprs> <Thresh15MinESs> <InitFailureTrapEnable>	Allow you to set the threshold value of CO side alarms.
(alarmprof-atur)	<Thresh15MinLofs> <Thresh15MinLoss> <Thresh15MinLprs> <Thresh15MinESs>	Allow you to set the threshold value of RT side alarms.

<action>	<parameter>	Description
add connection	< unit no./port no.> <vpi/vci> <AdminStatus>[VID] [Priority]	Allow you to create the PVC by specifying a port (1 ~ 16).
add lineprof	<profile name>	Setting Line profile name.
(lineprof-atuc)	<RateMode> <RateChanRatio> <TargetSnrMgn> <MinTxRate> <MaxTxRate> <MaxInterleaveDelay>	Allow you to add ATU-C items of line profile.
(lineprof-atur)	<RateMode> <RateChanRatio> <TargetSnrMgn> <MinTxRate> <MaxTxRate> <MaxInterleaveDelay>	Allow you to add ATU-R items of lineprof.
add manip	<IP1> [musk]	Allow you to define the management IP.
add trapdest	<IP-address>	Allow you to define trap destination.
add user	<Username><administrator|operator|guest>	Allow you to create new account of administrator or operator or guest.
config DSLline	<port no.> <lineprof> <alarmprof>	Modify DSL line configuration by arguments.
config alarmprof	<profile Name>	Modify existing alarm profile.
(alarmprof-atuc)	<Thresh15MinLofs> <Thresh15MinLoss> <Thresh15MinLols> <Thresh15MinLprs> <Thresh15MinESs> <InitFailureTrapEnable>	Modify the threshold value of CO side alarms.
(alarmprof-atur)	<Thresh15MinLofs> <Thresh15MinLoss> <Thresh15MinLprs> <Thresh15MinESs>	Modify the threshold value of RT side alarms.
config connection	< port no.> <PVC1> <PVC2> <AdminStatus> [VID] [Priority]	Modify pvc (vpi/vci) and VLAN ID by specifying a port.
config lineprof	<profile name>	Modify existing line profile.
(lineprof-atuc)	<RateMode> <RateChanRatio> <TargetSnrMargin> <MinTxRate> <MaxTxRate> <MaxInterleaveDelay>	Modify the configuration of CO side of line profile.

<action>	<parameter>	Description
(lineprof-atur)	<RateMode> <RateChanRatio> <TargetSnrMargin> <MinTxRate> <MaxTxRate> <MaxInterleaveDelay>	Modify the configuration of RT side of line profile.
config manip	<IP> [musk]	Allow you to modify the existing management IP.
config password	None	Change the user's password.
config port	<all|port#> <up | down>	Set the state of DSL port.
config portfilter	<enable|disable>	Port filttering configuration
config snmp	<community> [SNMP VID]	Modify the SNMP VID and community.
config subscriber (subscriber)	< port no.> <subscriber name> <telephone number> <Note>	Modify subscriber information for specific port. Modify subscriber information by arguments.
config sysinfo (system name) (location) (contact) (console name)		Modify the information of system by modifying system name, location, contact and console name.
config sysip	<IP> <submask> <gateway>	Modify the IP arguments of system.
config time	<date> <time>	
config user	<User-name> <administraot|operator|guest	Modify user's account and privilege.
delete alarmprof	<profile name>	Delete DSL alarm profile by selecting alarm profile name.
delete connection	</port no.> <vpi/vci>	Delete pvc by selecting (vpi/vci) of SA-ACE16 port no.
delete event	none	Delete all event information.
delete lineprof	<profile name>	Delete DSL line profile by selecting profile name.
delete manip	<IP-address>	Delete the specific IP.
delete trapdest	<IP-address>	Delete Trap destination IP.
delete user	<user name>	Delete user information by selecting user name.
help	Add, delete…..	Show usage of commands.
history	none	The used command.
reset port	< all./port no.>	Reset Port.
restart	none	Restart system.

<action>	<parameter>	Description
save	none	Save configuration to Flash Ram.
default	none	Restore the default setting.
upgrade	enable/disable	Enable/disable upgrate function.
exit	none	Restore the default setting.

4.2. Calling Commands

To recall commands from the history buffer, perform one of these tasks.

Command	Task
The up arrow key	Recall commands in the history buffer, beginning with the most recent command. Repeat the key sequence to recall successively older commands.
The down arrow key	Return to more recent commands in the history buffer after recalling commands with "the up arrow key". Repeat the key sequence to recall successively more recent commands.

4.3. General Configuration

Help Command

"Help" command can be used to get help specific to a command mode by entering help <command> or help <command> <parameter>.

```
Command: help
```

History Command

"History" command is used for to trace the command all users have entered.

```
Command: history
```

Saving the System

Describes how to save system configuration you have defined to Flash RAM.

```
Command: save
```

Note! *Before you restart the system, remember to save the system by entering the command "save" or the system will restart at the previous settings.*

4.4. Event Viewing and Deleting

Displaying the Current Event

Describes how to display the current event of system.

```
Command: show event
```

Example: This example shows how to display the current status of system.

```
IP-DSLAM# show event
-------------------------------------------------------------------------------
No     Time      Source    Severity     Description
-------------------------------------------------------------------------------
 1 2005/07/16 14:27:05    8     major    loss threshold occurs
 2 2005/07/16 14:27:15    5     inform    port down
```

Table 4.5. “show event” Field Definition

Field	*Definition*
No	Index of each event.
Time	The time when the event occurs.
Source	The port where the event occurs.
Severity	Priority of event (major/minor/inform).
Description	Description of the event information.

Deleting the Event of SA-ACE16

Describes how to delete the event of system.

`Command: delete event`

4.5. Reset Port

Reset Port

Describes how to reset the specific port.

`Command: reset port <all / port no.>`

Example: This example shows how to reset the specific unit 1/ port 8.

```
IP-DSLAM# reset port 8
Yes or No <y/n>?
```

4.6. Restart the SA-ACE16

Describes how to restart the system without turning on/off power.

`Command: restart`

Example: This example shows how to restart the system.

```
IP-DSLAM# restart
Yes or No <y/n>?
System is restarting now. Wait…
```

Note! *Before you restart the system, be sure that you save all the configurations by entering the command "save" or the system will start with the previous settings.*

4.7. Resetting all Configurations to Default Setting

Describes how to reset all configurations to default.

`Command: default`

Note! *The system will return to the original default settings.*

Example:

```
IP-DSLAM# default
Danger! This will affect your whole system.
Yes or No <y/n>?
You have restored the default setting to system.
```

4.8. System Upgrade

Describes how to enable or disable download without in-band management channel (VLAN).

`Command: upgrade <enable | disable>`

Argument List:

Parameter type	Description
Enable / disable	Enable / disable upgrade mode

Example: This example shows how to enable download without in-band management channel.

```
IP-DSLAM# upgrade enable
Yes or No <y/n>? y
System is in the "upgrade" mode now. You could start to upgrade the system file.
```

4.9. Logging Out your SA-ACE16

Describes how to log out the system.

`Command: exit`

Note! *Before you log out the system, be sure that you save all the configurations by entering the command "save" or the system will start with the previous settings.*

4.10. Configuring Your SA-ACE16

System Configuration

Displaying Hardware and Software Information

Describes how to view the hardware and software information of IP-DSLAM.

```
Command: show sysinfo
```

Example: This example shows how to display the hardware and software information of SA-ACE16. The following descriptions are default setting, of which system name, location, contact and console name can be modified.

```
IP-DSLAM# show sysinfo
System name: SA-ACE16
Location: S-Access GmbH
Contact: help@ISP.com
Console name: IP DSLAM AccessGain
Hardware version: Ver 1.0
Software version: Ver 3.03
Serial number: 00-49-00
Description: None
```

Table 4.6. Sysinfo field definition

Field	*Definition*
System name	Alias name of SA-ACE16.
Location	Location of system.
Contact	Contact person for service and how to contact.
Console name	Console name of the system.
Hardware version	Hardware version of system.
Software version	Software version of system.
Serial number	Serial number of system.
Description	Description of system.
FAN status	Normal/Alarm.

Modifying System Information

Describes how to modify the system information of system name, location, contact and console name.

```
Command:  config sysinfo
```

Argument List:

Parameter type	*Parameter data-type and field*	*Description*
System name	String, <= 32	Name of SA-ACE16.
Location	String, <= 32	Location of system.
Contact	String, <= 32	Contact person and how to contact.
Console name	String, <=16 (default: IPAM-1600)	Name of console tittle. (Empty for default)

Example: This example shows how to modify the name of system as ZTE 123, console name as DSLAM and description of system as East Building.

```
IP-DSLAM# config sysinfo
(sysinfo-name)# main IP-DSLAM
(sysinfo-location)# East Building
(sysinfo-contact)# help@ISP.com
(sysinfo-console name)# DSLAM
System name: main IP-DSLAM
Location: East Building
Contact: help@ISP.com
Console name: DSLAM
Yes or No <y/n>?
```

4.11. Port-Filtering Configuration

Displaying Port-Filtering

Describes how to display the status of port-based VLAN.

`Command: show portfilter`

Example: This example shows how to view the status of port-based VLAN

```
IP-DSLAM# show portfilter
Port filter: enable
```

Table 4.7. “show portfilter” Filed Definition

Items	*Description*
Enable/disable	Enable: Allow each DSL port to communicate back and forth with the uplink Ethernet port only. Disable: Allow all DSL ports to communicate with each other and also with the uplink Ethernet port.

Modifying Port-Filter

Describes how to configure port-filtering function whether to allow each DSL port communicate with the uplink Ethernet port only or communicate with each other and so do with the Ethernet port.

```
Command: config portfilter  <enable|disable>
```

Argument List:

Parameter type	*Parameter data-type and field*	*Description*
Status	Enable/disable	Enable: Allow each DSL port to communicate back and forth with the uplink Ethernet port only. Disable: Allow all DSL ports to communicate with each other and also with the uplink Ethernet port.

Example: This example shows how to enable the portfilter and allow each DSL port to communicate with the uplink Ethernet port only.

```
IP-DSLAM# config portfilter enable
Yes or No <y/n>?
```

This example shows how to disable the portfilter and allow all DSL port to communicate with each other and also with the uplink Ethernet port.

```
IP-DSLAM# config portfilter disable
Yes or No <y/n>?
```

Note! *The default setting is "Enable".*

4.12. IP Configuration

Displaying System IP

Describes how to view the system IP.

```
Command: show sysip
```

Example: This example shows how to display the system IP. The following descriptions are default setting.

```
IP-DSLAM# show sysip
IP: 192.168.10.2
Submask: 255.255.255.0
Gateway: 192.168.10.1
```

Table 4.8. Sysip Field Definition

Field	*Definition*
IP	IP of System.
Submask	Submask of system.
Gateway	Gateway IP.

Modifying System IP

Describes how to modify the system IP.

```
Command: config sysip <IP> <Submask> <Gateway>
```

Argument List:

Parameter type	*Parameter data-type and field*	*Description*
IP	A.B.C.D	IP of SA-ACE16
Submask	A.B.C.D	Submask of SA-ACE16
Gateway	A.B.C.D	Gateway of SA-ACE16

Example: This example shows how to modify the system IP as 192.168.10.100, submask as 255.255.255.0 and gateway as 192.168.10.1.

```
IP-DSLAM# config sysip 192.168.10.100 255.255.255.0 192.168.10.1
<IP>: 192.168.10.100
<Submask>: 255.255.255.0
<Gateway>: 192.168.10.1
Yes or No <y/n>?
```

4.13. Time Configuration

Displaying Time

Describes how to display the current system time, system up time and period

```
Command: show time
```

Example: This example shows how to display the time of DSLAM.

```
IP-DSLAM# show time
1.Current Time: 2005/07/16 11:05:35
2.System up time: 2005/7/15 10:00:25
3.System up period: 1 day 01:05:10
```

Table 4.9. Time Field Definition

Field	*Definition*
Current Time	Current system time.
System up time	System up time.
System up period	System up period.

Modifying Time

Describes how to modify the date and time of system.

`Command: config time <date> <time>`

Argument List:

Parameter type	*Parameter data-type and field*	*Description*
date	yyyy/mm/dd	e.g: 2005/02/14
time	hh:mm:ss	24-hour time format

Example: This example shows how to modify the system time to date:2005/02/14, time: 20:25:30.

```
IP-DSLAM# config time 2005/02/14 20:25:30
Date: 2005/02/14
Time: 20:25:30
Yes or No <y/n>?
```

4.14. Changing the Password

This section describes how to change own password regardless of user's privilege.

`Command: config password`

Example: This example shows how the user changes his own password.

```
IP-DSLAM# config password
Enter new password:********
Confirm password: ********
Yes or No <y/n>?
```

4.15. Configuring DSL

4.15.1 Creating Line Profile and Alarm Profile

Creating DSL Profile

Describes how to create a DSL Profile.

`Command: add lineprof <profile name>`

Argument List:

Parameter type	*Parameter data-type and field*	*Description*
lineprof name	String, <= 32	The name of DSL line profile.
Rate Mode	Integer, fixed : (1) adaptAtStartup : (2)	Defines what form of transmitting rate to be adaptated.

Line Type	Fast : (1) Interleaved : (2)	The DSL line type.
TargetSnrMargin	Integer, 2 ~ 15	Target Signal / Noise Margin.
MinTxRate	Integer, ATU-C: “64 ~ 2304” ATU-R: “64 ~ 2304”	The minimum transmitting rate of ATU-C side or ATU-R side.
MaxTxRate	Integer, ATU-C: “64 ~ 2304” ATU-R: “64 ~ 2304”	The maximum transmitting rate of ATU-C side or ATU-R side.
MaxInterleaveDelay	Integer, 1,2,4,8,16,32,64	The value of Interleave Delay for this channel.

Note! *1. If you select “Line Type” as “Fast”, you cannot select the value of “MaxInterleaveDelay”. Please refer to the first example.*
2. If you select “Rate Mode” as “Fixed”, the configuration of “MinTxRate” and “MaxTxRate” must be the same. Please refer to the second example.

Example1: This example shows how to create a DSL profile named service512K64K.

```
IP-DSLAM# add lineprof service512K64K
(lineprof-atuc)# 2 2 7 32 512 8
(lineprof-atur)# 2 2 7 32 64 8
DSL Line Profile “SERVICE512K64K” content:
ATU-C:
Rate Mode: adaptAtStartup
LineType: Interleaved
TargetSnrMargin: 7
RateChanRatio: Interleaved
MinTxRate: 64
MaxTxRate: 512
MaxInterleaveDelay: 8
ATU-R:
Rate Mode: adaptAtStartup TargetSnrMargin: 7
MinTxRate: 64
MaxTxRate: 64
MaxInterleaveDelay: 8
Yes or No <y/n>
```

Example 2: This example shows how to create a DSL profile named fast.

```
IP-DSLAM# add lineprof fast
(lineprof-atuc)# 1 1 6 768 768
(lineprof-atur)# 1 1 6 128 128
DSL Line Profile “fast” content:
ATU-C:
Rate Mode: fixed
LineType: Fast
```

```
TargetSnrMargin: 6
MinTxRate: 768
MaxTxRate: 768
ATU-R:
Rate Mode: fixed mode
RateChanRatio: Fast
TargetSnrMargin: 6
MinTxRate: 128
MaxTxRate: 128
Yes or No <y/n>
```

Note! *The configuration of default DSL profile named "DEFAULT" is as follows:*

ATU-C:

RateMode: AdaptAtStartup

RateChanRatio: Interleaved

TargetSnrMargin: 6.0

MinTxRate: 64

MaxTxRate: 2304

MaxInterleaveDelay: 16

ATU-R:

Rate Mode: adaptAtStartup

RateChanRatio: Interleaved

TargetSnrMargin: 6.0

MinTxRate: 64

MaxTxRate: 2304

MaxInterleaveDelay:16

Creating Alarm Profile

This section describes how to create an alarm profile.

`Command: add alarmprof <profile name>`

Argument List:

Parameter type	*Parameter data-type and field*	*Description*
alarmprof name	String, <= 32	The name of DSL alarm profile.
Thresh15MinLofs	Integer, 0 ~ 900	The threshold of the number of "Loss of Frame Seconds" within 15 minutes performance data collection period.

Parameter type	Parameter data-type and field	Description
Thresh15MinLoss	Integer, 0 ~ 900	The threshold of the number of “Loss of Signal Seconds” within 15 minutes performance data collection period.
Thresh15MinLols	Integer, 0 ~ 900	The threshold of the number of “Loss of Link Seconds” within 15 minutes performance data collection period. (But only ATU-C side).
Thresh15MinLprs	Integer, 0 ~ 900	The threshold of the number of “Loss of Power Seconds” within 15 minutes performance data collection period.
Thresh15MinESs	Integer, 0 ~ 900	The threshold of the number of “Errored Seconds” within 15 minutes performance data collection period.
InitFailureTrapenable	enable / disable	Enable or disable the Initial Failure Trap. Default setting is disable. (Only on ATU-C side).

Example: This example shows how to create an alarm profile named test.

```
IP-DSLAM# add alarmprof test
(alarmprof-atuc)# 30 10 50 5 4 enable
(alarmprof-atur)# 30 2 2 5
DSL Alarm Profile “test” content:
ATU-C:
Thresh15MinLofs: 30
Thresh15MinLoss: 10
Thresh15MinLols: 50
Thresh15MinLprs: 5
Thresh15MinESs: 4
InitFailureTrapEnable: enable
ATU-R:
Thresh15MinLofs: 30 seconds
Thresh15MinLoss: 2 seconds
Thresh15MinLprs: 2 seconds
Thresh15MinESs: 5 seconds
Yes or No <y/n>
```

Note! *the configuration of default dsl profile named “default” is as follows:*

ATU-C:

1. Thresh15minlofs: 0
2. Thresh15minloss: 0

3. Thresh15minlols: 0
4. Thresh15minlprs: 0
5. Thresh15miness: 0
6. Initfailuretrapenable: enable

ATU-R:

1. Thresh15minlofs: 0
2. Thresh15minloss: 0
3. Thresh15minlprs: 0
4. Thresh15miness:0

4.16. Modifying DSL Profile and Alarm Profile

Modifying DSL Profile

Describes how to modify existing DSL profile but you cannot modify default profile.

`Command: config lineprof <profile name>`
Argument List: the same as Creating DSL Profile. *See page*

Example: This example shows how to modify the existing DSL line profile named service512K64K.

```
IP-DSLAM# config lineprof service512K64K
(lineprof-atuc)# 2 2 6 128 512 1
(lineprof-atur)# 2 2 6 32 64 1
DSL Line Profile “service512K64K” content:
ATU-C:
Rate Mode: adaptAtStartup
LineType: Interleaved
TargetSnrMargin: 6
MinTxRate: 128
MaxTxRate: 512
MaxInterleaveDelay: 1
ATU-R:
Rate Mode: adaptAtStartup
LineType: Interleaved
TargetSnrMargin: 6
MinTxRate: 64
MaxTxRate: 64
MaxInterleaveDelay: 1
Yes or No <y/n>?
```

Modifying Alarm Profile

Describes how to modify alarm profile but you cannot modify default profile.

`Command: config alarmprof <profile name>`
Argument List: Same as Creating Alarm Profile. *See page 59*

Example: This example shows how to modify the existing alarm profile test.

```
IP-DSLAM# config alarmprof test
(alarmprof-atuc)#5 5 5 5 5 enable
(alarmprof-atur)#5 5 5 5 5
DSL Alarm Profile “test” content:
ATU-C:
Thresh15MinLofs: 5
Thresh15MinLoss: 5
Thresh15MinLols: 5
Thresh15MinLprs: 5
Thresh15MinESs: 5
InitFailureTrapEnable: enable
ATU-R:
Thresh15MinLofs: 5
Thresh15MinLoss: 5
Thresh15MinLprs: 5
Thresh15MinESs: 5
```

1.1. Deleting a DSL Profile and Alarm Profile

Deleting DSL Profile

Describes how to delete a profile but you cannot delete the default profile.

`Command: delete lineprof <profile name>`

Example: This example shows how to delete existing line profile service512K64K.

```
IP-DSLAM# delete lineprof service512K64K
Yes or No <y/n>?
```

Deleting Alarm Profile

Describes how to delete a alarm profile but you can’t delete the default profile.

`Command: delete alarmprof <profile name>`

Example: This example shows how to delete existing alarm profile test.

```
IP-DSLAM# delete alarmprof test
Yes or No <y/n>?
```

1.2. Displying a DSL Profile and Alarm Profile

Displaying DSL Profile

This section describes how to display all DSL profile or specific profile.

```
Command: show lineprof <all | line profile name>
```

Argument List:

Parameter	Description
all	Show all information.
Line profile name	DSL line profile name.

Example:This example shows how to display default line profile.

```
IP-DSLAM# show lineprof default
ATU-C:
1. RateMode: adaptAtStartup
2. LineType: Interleaved
3. TargetSnrMargin: 6.0
4. MinTxRate: 64
5. MaxTxRate: 2304
6. MaxInterleaveDelay: 16
ATU-R:
1. Rate Mode: adaptAtStartup
2. RateChanRatio: Interleaved
3. TargetSnrMargin: 6.0
4. MinTxRate: 64
5. MaxTxRate: 1024
6. MaxInterleaveDelay: 16
```

Table 4.10. “show lineprof” Field Definition

Field	Definition
RateMode	The form of transmit rate adaptation (fixed/adaptAtStartup).
LineType	Fast or Interleaved mode.
TargetSnrMargin	Target Signal/Noise Margin. (dB).
MinTxRate	The minimum transmitting rate of ATU-C side or ATU-R side. (Kbps).
MaxTxRate	The maximum transmitting rate of ATU-C side or ATU-R side. (Kbps).
MaxInterleaveDelay	The value of Interleave Delay for this channel. (milli-seconds).

Displaying Alarm Profile

Describes how to display all alarm profile or specific alarm profile.

```
Command: show alarmprof <all | alarm profile name>
```

Argument List:

Parameter	Description
all	Show all information.

Alarm profile name	DSL alarm profile name.

Example: This example shows how to display the default alarm profile.

```
IP-DSLAM# show alarmprof default
ATU-C:
1. Thresh15MinLofs: 0
2. Thresh15MinLoss: 0
3. Thresh15MinLols: 0
4. Thresh15MinLprs: 0
5. Thresh15MinEss: 0
6. InitFailureTrapenable: enable
ATU-R:
1. Thresh15MinLofs: 0
2. Thresh15MinLoss: 0
3. Thresh15MinLprs: 0
4. Thresh15MinEss: 0
```

Table 4.11. “show alarmprof” Field Definition

Items	*Description*
Thresh15MinLofs	The threshold of the number of “Loss of Frame Seconds” within 15 minutes performance data collection period. (seconds).
Thresh15MinLoss	The threshold of the number of “Loss of Signal Seconds” within 15 minutes performance data collection period. (seconds).
Thresh15MinLols	The threshold of the number of “Loss of Link Seconds” within 15 minutes performance data collection period. (seconds) (Only ATU-C side).
Thresh15MinLprs	The threshold of the number of “Loss of Power Seconds” within 15 minutes performance data collection period. (seconds).
Thresh15MinESs	The threshold of the number of “Errored Seconds” within 15 minutes performance data collection period. (seconds).
InitFailureTrapenable	The status of the Initial Failure Trap (enable/disable). (seconds) (Only ATU-C side).

4.17. Port Configuration

4.19.1 Enabling and Disabling a port

Describes how to enable and disable a port.

```
Command: config port <all | port no.> <up | down>
```

Argument List:

Parameter	Description
all |port no.	Select destination
up | down	Enable/Disable DSL port

Example: This example shows how to set the port 8 enable.

```
IP-DSLAM# config port 8 up
Yes or No <y/n>? y
```

4.19.2 Attaching DSL Profile

Describes how to attach a profile to a port.

`Command: config DSLline < port no.> <lineProfile> <alarmProfile>`

Argument List:

Parameter type	Parameter data-type and field	Description
port no.	(1 ~ 16)	Indicated SA-ACE16 port no.
LineProfile	String, <=32	Specifies an DSL line profile name.
AlarmProfile	String, <=32	Specifies an DSL alarm profile name.

Example: This example shows how to attach the profile “service 512K64K” and alarm profile “test” to port 8, and displays the result:

```
IP-DSLAM# config DSLline 8 service512K64K test
LineProfile: SERVICE512K64K
AlarmProfile: TEST
Yes or No <y/n>?
```

4.20. Displaying the Current Status and Information of DSL Line

Displaying the Current Status of Line

Describes how to show the administration, operating, alarm and trap status.

`Command: show port <all |port no.>`

Argument List:

Parameter	Description
all	Show all information.
port no.	(1 ~ 16). Indicate the specific port.

Example: This example shows how to display the current status of port 8.

```
IP-DSLAM# show port 8
1. Port ID: 1/8
2. Admin Status: up
3. Operating Status: up
```

```
4. Alarm Status: Normal
5. Trap: disable
```

The following example shows how to display the all port status.

```
IP-DSLAM# show port all
Port ID  Admin Status  Operating Status   Alarm Status   Trap
-------------------------------------------------------------------------------
 1        up          up           Normal      enable
 2        up          up           Normal      enable
 .                 …                  …
16        up          up           Normal      enable
-------------------------------------------------------------------------------
Press ‘y’ for continue, ‘n’ for break and press Enter.
```

Table 4.12. “show port” Field Definition

Items	*Description*
Port ID	The specific SA-ACE16 port no (port no.).
Admin Status	The desired state of interface (up/down).
Operating Status	The current operational state of interface (up/down).
Alarm Status	Alarm status…normal means “no alarm”
Trap	enable/disable.

Displaying the information of DSL Line

Describes how to get the information of line coding, line type, standard compliance, channel mode and which line profile and alarm profile have attached at the specific DSL line.

`Command: show DSLline <all | port no.>`

Argument List:

Parameter	*Description*
all	Show all information
port no.	Port ID

Example: This example shows how to display the port 8 DSL line information.

```
IP-DSLAM# show DSLline 8
1. LineCoding: Multimode
2. LineType: fastOrInterleaved
3. Standard Compliance: G.dmt
4. Channel Mode: fast
3. LineProfile: default
4. AlarmProfile: default
```

Table 4.13. “show DSLline” Field Definition

Field	*Definition*
LineCoding	Multimode
LineType	fastOrInterleaved
Standard Compliance	G.SHDSL (ITU-T G.991.2)
Channel Mode	(No Channel / fast / interleaved)
LineProfile	Assigned DSL line profile name
AlarmProfile	Assigned DSL alarm profile name

4.21. PVC Configuration

Creating PVC

Describes how to configure a permanent virtual connection, virtual LAN ID, connection priority, administration status and VLAN tag on the specific port.

```
Command: add connection < port no.> <vpi/vci> <up|down> [2~4094] [priority]
```

Argument List:

Parameter type	*Parameter data-type and field*	*Description*
port no.	(1 ~ 16)	Indicated port no.
PVC	(0 ~ 4095)/ (0 ~ 65535)	VPI/VCI.
Admin Status	up/down	Used to up/down connection.
VID (optional)	2 ~ 4094	Optional VLAN ID, no element represents the connection is without VLAN tag.
Priority (optional)	0 ~ 7 (Max:7 , Min:0)	Optional Connection priority. No VLAN tag, no priority.

Example: This example shows how to configure the VPI-0, VCI-50, up administration status, enable VLAN tag with VLAN ID-4002 and highest connection priority on port 8.

```
IP-DSLAM# add connection 8 0/50 up 4002 7
Port 8
PVC: 0/50
AdminStatus: up
VID: 4002
Priority: 7
Yes or No <y/n>?
```

This example shows how to configure the VPI-0, VCI-50, up administration status, and without VLAN tag on port 8 of unit 1.

```
IP-DSLAM# add connection 8 0/50 up
Port 8
PVC: 0/50
AdminStatus: up
Yes or No <y/n>?
```

Note! *(1) Virtual Connection can be configured up to 2 connections on the same port but the VLAN ID can not overlap with the existing VLAN ID. (2) The default setting for PVC is 8/81, and you can modify and delete the default setting. (3) The default setting of VLAN ID is without VLAN tag. (4) On the same port, one PVC or two PVCs can be created. On the creation of one PVC, the configuration of VLAN ID can either be enabling VLAN tag or disabling VLAN tag. On the creation of two PVCs, the configuration of VLAN ID can either be enabling both VLAN tags or just disabling VLAN tag on a PVC whereas the other will remain with VLAN tag. The situation of both PVC without VLAN tag cannot be configured. Please refer to the table 4-13 for understanding ways of PVC configuration either with VLAN tag or without VLAN tag:*

Table 4.14. Ways of PVC configuration either with VLAN tag or without VLAN tag

Port	*1st PVC*	*2nd PVC*
The same port	With VLAN tag	With VLAN tag
		Without VLAN tag
	Without VLAN tag	With VLAN tag

Modifying PVC

Describes how to modify the virtual connection of the port.

```
Command: config connection < port no.> <vpi_old/vci_old>
<vpi_new/vci_new> <up|down> [2~4094] [priority]
```

Argument List:

Parameter type	*Parameter data-type and field*	*Description*
PVC_old	0 ~ 4095(vpi) / 0 ~ 65535(vci)	Existing old ATM PVC.
PVC_new	0 ~ 4095(vpi) / 0 ~ 65535(vci)	New ATM PVC you want to modify.
Others	Same as Creating PVC. *See page 67*	

Example: This example shows how to modify the previous example of “PVC-0/50, AdminStatus-up, VID-4002, Priority-7” to “PVC-0/40, AdminStatus-up, VID-4000, Priority-6”.

```
IP-DSLAM# config connection 8 0/50 0/40 up 4000 6
Port 8:
PVC: 0/50 -> 0/40
VID: 4000
Priority: 6
AdminStatus: up
Yes or No <y/n>?
```

This example shows how to modify the previous example of “PVC-0/50, AdminStatus-up, VID-4002, Priority-7” to “PVC-0/40, AdminStatus-up, without VLAN tag”.

```
IP-DSLAM# config connection 8 0/50 0/40 up
Port 8:
PVC: 0/50 -> 0/40
AdminStatus: up
Yes or No <y/n>?
```

Deleting PVC

Describes how to delete virtual connection you set, including the default setting.

`Command: delete connection < port no.> <vpi/vci>`

Argument List:

Parameter type	*Parameter data-type and field*	*Description*
port no.	(1 ~ 16)	Indicated SA-ACE16 port no.
PVC	(0 ~ 4095) / (0 ~ 65535)	VPI/VCI

Example: This example shows how to delete the connection of port 8.

```
IP-DSLAM# delete connection 8 0/50
Yes or No <y/n>?
```

4.22. Displying PVC

Sorted by Port ID

Describes how to display existing virtual connection on each port and sorted by port ID.

`Command: show connection <all | port no.>`

Argument List:

Parameter	*Description*
all	Show all information.
port no.	(1 ~ 16). Indicate the port no.

Example: This example shows how to display the virtual connection of port 8.

```
IP-DSLAM# show connection 1/8
Port ID   PVC    VID   Priority  Admin Status  Operating Status
--------------------------------------------------------------------------------
 8      0/40    4000     6       up             up
 8      8/81     9       7       up            down
--------------------------------------------------------------------------------
```

Table 4.15. “show connection” Field Definition

Items	*Description*
Port ID	The specific SA-ACE16 port no.
PVC	VPI/VCI.
VID	VID.
Priority	The priority of this connection. (Max: 7 / Min:0).
Admin Status	The admin status of each connection (up/down).
Operating Status	The operating status of each connection (up/down).

Sorted by VID

Describes how to display existing virtual connection on each port and sorted by VID.

`Command: show vid <all | port no.>`

Argument List:

Parameter	*Description*
all	Show all information.
port no.	(1 ~ 16). Indicate the specific port no.

Example: This example shows how to display all virtual connection and sorted by increasing VID.

```
IP-DSLAM# show vid all
--------------------------------------------------------------------------------
  VID   Port ID   PVC  Priority  Admin Status  Operating Status
--------------------------------------------------------------------------------
  4081    1/1    0/40  7        down          down
  4082    1/2    0/40  7         up           up
  4083    1/3    0/41  7         up           up
   ..      ..     ..    ..         ..           ..                    ..
--------------------------------------------------------------------------------
Press ‘Y’ to continue, ‘N’ to break then press Enter
```

Table 4.16. “show vid” Field Definition

Field	*Definition*
VID	VID.
Port ID	The SA-ACE16 port no.
PVC	vpi/vci.
Priority	The priority of this connection. (Max:7/Min:0).
Admin Status	The desired state of each connection (up/down).
Operating Status	The current operational state of each connection (up/down).

4.23. Subscriber Configuration

Displaying the Information of Subscriber

Describes how to view the information of subscriber of each port.

`Command: show subscriber <all | / port no.>`

Argument List:

Parameter	*Description*
	Show all information.
port no.	Port ID.

Example: This example describes how to view the subscriber information on specific port.

```
IP-DSLAM# show subscriber 8
1. Subscriber name: pantagon
2. Telephone number: 4236125861
3. Note: Ok
```

Table 4.17. “show subscriber” Field Definition

Field	*Definition*
Subscriber name	Subscriber name of this port.
Telephone number	Telephone number of this port.
Note	The description of subscriber of this port.

Modifying the Information of Subscriber

Describes how to modify the information of subscriber by specifying port no.

Command: config subscriber <port no.>

Argument List:

Parameter type	*Parameter data-type and field*	*Description*
port no.	(1 ~ 16)	Indicated SA-ACE16 port no.
Subscriber name	String, <= 15	The desired subscriber name
Telephone number	String, <= 11	The desired telephone number
Note	String, <= 20	Remarks

Example: This example shows how to modify the subscriber description of port 7.

```
IP-DSLAM# config subscriber 7
(subscriber) help
< Subscriber name > < Telephone number > < Note >
(subscriber) Winner 2148485965 Test.
DSL port “1/7” subscriber information:
Subscriber name: Winner
Telephone number: 2148485965
Note: Test.
Yes or No <y/n>?
```

4.24. Management Configuration

4.24.1. Configuring SNMP Access Parameters

Displaying SNMP

Describes how to display the information of SNMP.

```
Command: show snmp
```

Example: This example shows how to display the information of SNMP.

```
IP-DSLAM# show snmp
1.VID: 4094
2.Community: public
```

Table 4.18. “show snmp” Field Definition

Field	*Definition*
VID	SNMP VID
Community	SNMP Community

Modifying SNMP

Describes how to modify the SNMP.

```
Command: config snmp <community> [VID]
```

Argument List:

Parameter type	Parameter data-type and field	Description
Community	String, <32	SNMP Community
VID	2 ~ 4094	VID for SNMP

Note! *The community string is case-sensitive.*

Example: This example shows how to modify SNMP with community string “public” and no VID.

```
IP-DSLAM# config snmp public
VID: 0
community: public
Yes or No <y/n>?
```

This example shows how to modify SNMP with the configuration of community string - “private” and VID – “4025”

```
IP-DSLAM# config snmp public 4025
VID: 4025
community: public
Yes or No <y/n>?
```

4.25. Configuring Trap IP

Creating Trap IP

Describes how to create the destination of trap IP.

`Command: add trapdest <IP>`

Argument List:

Parameter type	Parameter data-type and field	Description
IP	A.B.C.D	IP-address

Note *The trap IP can be created maximum up to 5 traps.*

Example: This section describes how to create the trap IP as 210.61.88.2

```
IP-DSLAM# add trapdest 210.61.88.2
Yes or No <y/n>
```

Displaying SNMP Trap

Describes how to display the IP of destination that SNMP trap reached.

`Command: show trapdest`

Example: This example shows how to display the IP of destination that SNMP trap reached.

```
IP-DSLAM# show trapdest
Trap destination IP as follows:
192.168.100.12
192.168.100.100
```

Table 4.19. “show trapdest” Field Definition

Field	Definition
IP	A.B.C.D (Max: 5 trap IP)

Deleting SNMP Trap

Describes how to delete a specific trap IP.

`Command: delete trapdest <IP address>`

Example: This example shows how to delete the trap IP 192.168.0.100.

```
IP-DSLAM# delete trapdest 192.168.0.100
Yes or No <y/n>?
```

4.26. Configuring Management IP

Creating Management IP

Describes how to create the management IP.

```
Command: add manip <IP-address> <mask>
```

Argument List:

Parameter type	Parameter data-type and field	Description
IP-address	A1.A2.A3.A4	IP-address
<group>	G1.G2.G3.G4	Group mask

Note! *The management IP can be created up to 5 group of IPs at most no matter you set the group mask or not. No management IP is configured in default setting, i.e., any IP can access to your IP-DSLAM.*

Example: This example shows how to create a group management IP and let all IPs within the range of "IP-address" and "mask" able to access to your IP-DSLAM.

```
IP-DSLAM# add manip 192.168.100.1 255.255.255.0
Yes or No <y/n>?
```

4.27. Displaying Management IP

Describes how to display the management IP.

```
Command: show manip
```

Example: This example shows how to display existing management IP.

```
IP-DSLAM# show manip
    IP-address          Mask
-----------------------------------------------------------------
    192.168.0.1         255.255.255.128
    192.168.100.1       255.255.255.0
    210.67.0.128        255.255.255.128
-----------------------------------------------------------------
```

Table 4.20. "show manip" Field Definition

Field	Definition
IP-address	Mask

4.28. Deleting Management IP

Describes how to delete the management IP.

```
Command: delete manip <IP-address>
```

Argument List:

Parameter type	Parameter data-type and field	Description
IP-address	A1.A2.A3.A4	IP-address

Example: This example shows how to delete management IP group of 192.168.0.1

```
IP-DSLAM# delete manip 192.168.0.1
Yes or No <y/n>?
```

4.29. Performance Monitor

Displaying the Physical Layer Information

Describes how to display physical layer information of a port, or all port on CO side, remote side or both sides.

`Command: show DSLphysical <all | port no.> [c | r]`

Argument List:

Parameter	Description
all | port no.	Show all information | show specific port
(c/r)	CO/Remote

Example: Display the physical layer information of port 8 on CO side.

```
IP-DSLAM# show DSLphysical 8 c
ATU-C:
1.InvSerialNumber: N12345678
2.InvVendorNumber: C1008
3.InvVersionNumber: 1
4. Current SNR margin: 10.5
5. Current attenuation: 0
6. Current status: NO DEFECT
7. Current output power: 8
8. Current attainable rate: 9677
```

Table 4.21. “show DSLphysical” Field Definition

Field	*Definition*
InvSerialNumber	The serial number of the product.
InvVendorID	The ID of vendor.
InvVersionNumber	The software version.
Current SNR margin	Noise margin value. (dB)
Current attenuation	Difference in the total power transmitted and the total power received by the ATU. (dB)
Current status	Current state of the ATU line.
Current output power	Total output power transmitted by the ATU. (dBM)
Current attainable rate	The maximum currently attainable data rate by the ATU. (Kbps)

4.30. Displaying the Channel Layer Information

Describes how to display the channel Layer information of a port or all ports on CO side, remote side, or both sides.

```
Command: show DSLchannel <all | port no.> [c | r]
```

Argument List:

Parameter	Description
all | port no.	Show all information | show specific port
(c/r)	CO/Remote

Example: Display the channel information of port 1/8 on CO side.

```
IP-DSLAM# show DSLchannel 8 c
ATU-C:
1. Interleave Delay: 16
2. Previous Tx rate: 2048
2. Current Tx Rate: 2304
3. CRC Block Length: 544
```

Table 4.22. “show DSLchannel” Field Definition”

Field	*Definition*
Interleave Delay	Interleave delay for this channel. (mili-seconds)
Previous Tx Rate	Previous actual transmit rate on this channel if DSL loop retrain. (Kbps)
Current Tx Rate	Actual transmit rate on this channel. (Kbps)
CRC Block Length	The length of the channel data-block on which the CRC operates.

4.31. Displaying Physical Performance Statistics within Current 15 Minutes and 1 Day Duration

Describes how to display the physical performance statistics of a port or all port on CO side, remote side, or both sides during current 15 minutes and a day duration.

```
Command: show DSLphperf <all | port no.> [c | r]
```

Argument List:

Parameter	Description
all | port no.	Show all information | show specific port
(c/r)	CO/RT

Example: Display the physical performance of port 8 on remote side during current 15 minutes and 1-day duration.

```
IP-DSLAM# show DSLphperf 8 r
ATU-R
1. Lofs: 0
2. Loss: 0
3. Lprs:0
4. Ess: 2
5. Current 15-min time elapsed: 105
6. Current 15-min Lofs: 0
7. Current 15-min Loss: 0
8. Current 15-min Lprs: 0
9. Current 15-min Ess: 2
10.Current 1-day time elapsed: 7560
11.Current 1-day Lofs: 34
12.Current 1-day Loss: 23
13.Current 1-day Lprs: 0
14.Current 1-day Ess: 89
```

Table 4.23. “show DSLphperf” Field Definition

Field	Definition
ATU-C	CO: Down Stream.
ATU-R	RT: Up Stream.
Lofs	Number of Lof failures since reset.
Loss	Number of Los failures since reset.
Lols	Number of Lol failures since reset.
Lprs	Number of Lpr failures since reset.
Ess	Number of errored seconds since reset.
Inits	Number of Initialization attempts since reset. It includes both successful and failed attempts.
Current 15-min time elapsed	Number of seconds that have elapsed within the current 15 minutes. A full interval is 900 seconds.
Current 15-min Lofs	Number of seconds in the current 15-minute interval during which Lof was detected.
Current 15-min Loss	Number of seconds in the current 15-minute interval during which Los was detected.
Current 15-min Lols	Number of seconds in the current 15-minute interval during which Lol was detected.
Current 15-min Lprs	Number of seconds in the current 15-minute interval during which Lpr was detected.
Current 15-min Ess	Number of errored seconds in the current 15-minute interval.
Current 15-min Inits	Number of Inits in the current 15-minute interval. It includes both successful and failed attempts.
Current 1-day time elapsed	Number of seconds that have elapsed since the beginning of the current 1-day interval.
Current 1-day Lofs	Number of seconds in the current 1 day interval during which Lof was detected.
Current 1-day Loss	Number of seconds in the current 1 day interval during which Los was detected.
Current 1-day Lols	Number of seconds in the current 1 day interval during which Lol was detected.
Current 1-day Lprs	Number of seconds in the current 1 day interval during which Lpr was detected.
Current 1-day Ess	Number of errored seconds in the current 1 day interval.

4.32. Displaying Channel Performance Statistics within Current 15 Minutes and 1 Day Duration

This section describes how to display the channel performance statistics of a port of all port on CO side, remote side or both sides during current 15 minutes and 1 day duration.

```
Command: show DSLchperf <all | port no.> [c | r]
```

Argument List:

Parameter	Description
all | port no.	Show all information | show specific port
(c/r)	CO/Remote

Example: This example shows the channel performance of port 8 on remote side during current 15 minutes and 1-day duration.

```
IP-DSLAM# show DSLchperf 8 r
ATU-R:
1. In octets: 561852545
2. Out octets: 521658458
3. In error blocks: 2308
4. Out error blocks: 1205
5. Received blocks: 8562145
6. Transmitted blocks: 8562145
7. Corrected blocks: 23650
8. Uncorrected blocks: 2308
9. Current 15-min time elapsed: 610
10. Current 15-min received blocks: 568598
11. Current 15-min transmitted blocks: 568598
12. Current 15-min corrected blocks: 362
13. Current 15-min uncorrected blocks: 15
14. Current 1-day time elapsed: 3056
15. Current 1-day received blocks: 9595665
16. Current 1-day transmitted blocks: 9595665
17. Current 1-day corrected blocks: 3566
18. Current 1-day uncorrected blocks: 2100
```

Table 4.24. “show DSLchperf” Field Definition

Field	Definition
In octets	The total number of bytes received since the last agent reset.
Out octets	The total number of bytes transmitted since the last agent reset.
In error blocks	The total number of blocks received with errors since the last agent reset.
Out error blocks	The total number of blocks transmitted with errors since the last agent reset.
Received blocks	The total number of blocks of data received since the last agent reset.
Transmitted blocks	The total number of blocks of data transmitted since the last agent reset.
Corrected blocks	Number of corrected blocks of data transmitted since the last agent reset.
Uncorrected blocks	Number of corrected blocks of data transmitted since the last agent reset.
Current 15-min time elapsed	Number of seconds that have elasped since the start of the current 15-minute interval.
Current 15-min received blocks	Number of blocks of data received during the current 15-minute interval.
Current 15-min transmitted blocks	Number of blocks of data transmitted during the current 15-minute interval.
Current 15-min corrected blocks	Number of corrected blocks of data transmitted during the current 15-minute interval.
Current 15-min uncorrected blocks	Number of uncorrected blocks of data transmitted during the current 15-minute interval.
Current 1-day time elapsed	Number of seconds that have elasped since the start of the current day interval.
Current 1-day received blocks	Number of blocks of data received during the current day interval.
Current 1-day transmitted blocks	Number of blocks of data transmitted during the current day interval.
Current 1-day corrected blocks	Number of corrected blocks of data transmitted during the current day interval.
Current 1-day uncorrected blocks	Number of uncorrected blocks of data transmitted during the current day interval.

4.33. Displaying Physical Performance Statistics during Previous 15 Minutes or 1 Day Duration

Describes how to display the physical performance of a port or all port on CO side, remote side or both sides during previous 15 minutes or 1-day duration. For 15 minutes duration, the system collects and displays up to 1-day interval and for 1-day duration, the system only collect and display up to 1week interval.

```
Command: show DSLphintl < port no.> <15min | 1day> [c | r]
```

Argument List:

Parameter	Description
port no.	Port ID
15 min / 1day	Interval
(c/r)	CO/Remote

Example: This example shows how to display the physical performance of port 8 on CO side during previous 1-day duration.

```
IP-DSLAM# show DSLphintl 8 1-day c
 Port 8
 ATU-C side (seconds):
----------------------------------------------------------------------------------
 No.  Lofs     Loss     Lols     Lprs     Ess     Inits
----------------------------------------------------------------------------------
 1    50       38       12       0        267     0
  …       …        …        …        …        … 7    …        …        …
…       …
```

Table 4.25 “show DSLphintl” Field Definition

Field	Definition
Lofs	Counts of Lof since agent reset within previous 15-min or 1-day interval.
Loss	Counts of Los since agent reset within previous 15-min or 1-day interval.
Lols	Counts of Lol since agent reset within previous 15-min or 1-day interval. (But only at ATU-C side)
Lprs	Counts of Lpr since agent reset within previous 15-min or 1-day interval.
Ess	Counts of ES since agent reset within previous 15-min or 1-day interval.
Inits	Counts of DSL line initialization attempts since agent reset, including both successful and failed attempts within previous 15-min or 1-day interval.(Only at ATU-C side)

4.34. Displaying Channel Performance Statistics during Previous 15 Minutes or 1 Day Duration

Describes how to display the channel performance of a port or all port on CO side, remote side, or both sides during previous 15 minutes or 1day duration. For 15 minutes duration, the system collects and displays up to 1day interval and for 1day duration, the system collects and displays up to 1 week interval.

```
Command: show DSLchintl < port no.><15min | 1day> [c | r]
```

Argument List:

Parameter	Description
port no.	Port ID
15 min / 1day	Previous 15 min or 1 day Interval
(c/r)	CO (Down Stream) / Remote (Up Stream)

Example: This example shows how to display the channel performance of port 8 on CO side during previous 15 minutes duration.

```
IP-DSLAM# show DSLchintl 8 15 min c
Port 8
ATU-C side (blocks):
-------------------------------------------------------------------------------
No.  Received     Transmitted     Corrected     Uncorrected
-------------------------------------------------------------------------------
1    15215        25835           256           28
     …            …               …
16   …                 …                 … …
```

Table 4.26. “show DSLchintl” Field Definition

Field	Definition
Received	The total number of blocks of data received during the previous 15 min or 1-day interval.
Transmitted	The total number of blocks of data transmitted during the previous 15 min or 1-day interval.
Corrected	Number of corrected blocks of data transmitted during the previous 15 min or 1-day interval.
Uncorrected	Number of uncorrected blocks of data transmitted during the previous 15 min or 1-day interval.

4.35. Configuring User Account

Creating User Account

Describes how to create a user account and setting his privilege.

```
Command: add user <user name> <administrator | operator | guest>
```

Argument List:

Parameter type	Parameter data-type and field	Description
user name	String, <= 16	User name (login account)
administrator |operator | guest	Administrator/operator/guest	User privilege
password	String, <=8	The user’s password

Note! *There are three privilege levels. (Total 5 accounts)*

User Account	Characteristics
Administrator	Those who have the highest privilege to configure the whole System but do not have the privilege to delete the default “admin” account.
Operator	Those who can execute all commands except creating a new user account, modifying and deleting the administrator accounts as well as modifying time of the system.
Guest	Those who can execute only “show” command.

Example: This example shows how to create the user named “Bill” who has the privilege of administrator.

```
IP-DSLAM# add user bill administrator
Password:********
Confirm : ********

Yes or No <y/n>?
```

4.36. Modifying User Account

Describes how to modify existing user account.

`Command: config user <user name> <administrator | operator | guest>`

Argument List:

Parameter type	*Parameter data-type and field*	*Description*
user name	String, <= 16	User name (login account)
Administrator | operator | guest	Adminstrator/operator/guest	User privilege
password	String, <=8	The user’s password

Example:This example shows how to modify Bill’s privilege of administrator to operator.

```
IP-DSLAM# config user bill operator
New password:*******
Confirm password:*******
Yes or No <y/n>?
```

Note! *Only administrator can modify the other’s privilege and password.*

4.37. Displaying the Information of User Account

Describes how to view the information of existing user account.

`Command: show user`

Example: This example shows how to display the information of user Smart.

```
IP-DSLAM# show user
------------------------------------------------------------------------
No          User name                Privilege
------------------------------------------------------------------------
  1             admin                administrator
  2             bill                 operator
  3             guest1               guest
```

4.38. Deleting User Account

Describes, how to delete a user account.

Command: delete user <user name>

Argument List:

Parameter type	Parameter data-type and field	Description
User name	None	User account

Example: This example shows how to delete the user account guest1.

```
IP-DSLAM# delete user guest1
Yes or No <y/n>?
```

Note! *You can't delete your own account.*

5. CONFIGURATION BACKUP AND RESTORE

This chapter describes how to back up your user configuration from SA-ACE16 onto your computer and restore them from computer to SA-ACE16 using configuration file "sf_user.cfg". This chapter will cover the description of control files used in TFTP operation and process of backing up and restoring:

Configuration File "sf_user.cfg"

The configuration "sf_user.cfg" is for DSL ports, bridge and SNMP settings. As soon as you restore it in IP-DSLAM, it can be applied the next time IP-DSLAM is booted.

Control Files used in TFTP Operation

In TFTP operation, you may require some specific files to achieve authentication functions. They will be provided with a CD in the packing. Listed bellows are the control files used in TFTP operation:

tftplock.key:	The file contains the SNMP write community string (password)
tftputil.bat:	The utility file designed for user to back up and restore easily.

Note!
(1) You can follow the following procedures of configuration backup and configuration restore in Windows 2000 and Windows NT system, whereas you should have tftp.exe in other Windows system.

(2) Before you back up or restore the configuration file "sf_user.cfg", make sure if those two control files and configuration file are in same directory.

Configuration Backup

This section describes how to back up your configuration settings form SA-ACE16 to computer. The following procedures will help you to back up configuration:

Step 1: Open a terminal emulation interface in order to execute CLI.

Step 2: Enter the command "upgrade enable" in Command Line Interface for executing TFTP to SA-ACE16.

Example

```
IP-DSLAM# upgrade enable
Yes or No <y/n>? y
System is in the "upgrade" mode now. You could start to upgrade the system file.
```

Note! *This step can be skipped, in case of without Ethernet-VLAN on each port.*

Step 3: Enter the command “show sysip” to get the <IP-address> of SA-ACE16. If you already know the IP-address, you can skip this step.

Example

```
IP-DSLAM# show sysip
IP: 192.168.10.2
Submask: 255.255.255.0
Gateway: 192.168.10.1
```

Note! *Make sure that the system IP and your computer is in the same subnet.*

Step 4: Open another window interface, e.g., MS-DOS interface.

Step 5: Enter the command “tftputil <IP-address> <get> <sf_user.cfg>” under the directory of configuration file and control files.

Example

```
c:\> tftputil 192.168.10.2 get sf_user.cfg
```

When uploading, three LEDs, “MAINT” “ALARM” and “FAULT”, will blink. Unless you finish uploaded, do not shut down ADMS-L231 and unlink cat 5 cable.

Step 6: Restart the system in terminal emulation interface. The system will restart according to your “sf_user.cfg”.

Example

```
IP-DSLAM# restart
Yes or No <y/n>?
System is restarting now.Wait…..
```

5.1. Configuration Restore

Describes how to restore your configuration settings from computer to IP-DSLAM. The following procedures will help you to restore configuration:

Step 1: Open the hyper terminal interface in order to execute CLI.

Step 2: Enter the command “show sysip” to get the <IP-address> of IP DSLAM. If you already know the IP-address, you can skip this step.

Example

```
IP-DSLAM# show sysip
IP: 192.168.10.2
Submask: 255.255.255.0
Gateway: 192.168.10.1
```

Note! *Make sure that the system IP and your computer is in the same subnet.*

Step 3: Enter the command “tftputil <IP-address> <get> <sf_user.cfg>” in dos interface

Example

```
c:\> tftputil 192.168.10.2 put sf_user.cfg
```

When uploading, three LEDs, “MAINT” “ALARM” and “FAULT”, will blink. Unless you finish uploaded, do not shut down AccessGain and unlink cat 5 cable.

Step 4: Restart the system in the hyper terminal interface. The system will restart according to your “sf_user.cfg”.

Example

```
IP-DSLAM# restart
Yes or No <y/n>?
System is restarting now.Wait…
```

6. TROUBLESHOOTING

This chapter describes some potential problems and possible remedies and helps you diagnose and solve the problems. It includes the problems of:

- Problems with Starting Up AccessGain
- This section describes the corrective actions of the problems with LED(s), data transmission and console port.
- Problems with Configuration
- This section describes how to solve the problems of your SA-ACE16 doesn't work with configured settings.
- Problems with SNMP
- This section describes how to solve the problem of getting information from SA-ACE16 to SNMP manager server.
- Problems with Telnet
- This section describes how to solve the problem of being unable to telnet to your SA-ACE16.
- Problems with Password
- This section describes how to solve the problem of forgetting password.

6.1. Problems with Starting up SA-ACE16

Table 6.1. Troubleshooting the Start-up your SA-ACE16

Problems	*Steps to Take*
None of the LED(s) are on	1. Check all cables connection. 2. If the LEDs remain off, contact for technical support.
The LED(s) are on, but data can not be transmitted	1. Check if all cables are well connected. 2. Check the PVC(vpi/vci) settings in CPE side. The default setting of your SA-ACE16 is described on the pade 24. 3. Ping the SA-ACE16 from the user's computer. 4. If you cannot ping, connect the DSL modem or router to another port on SA-ACE16. If the DSL modem or router works with a dfferent port, then there may be a problem with the original port. Contact for technical support. 5. If connecting with different port does not work, try a different DSL modem or router with the original port. 6. The problem still remain unsolved, contact for technical support.
You cannot access the command "tftputil <IP-address> <get> <sf_user.cfg>" in windows interface SA-ACE16 via the console port	1. Check if the SA-ACE16 is connected to your computer's serial port 2. Check if the communication program is configured correctly. Pls. Refer to "Logging into the Command Line Interface" section on page 29. 3. If the problem remain unsolved, contact for technical support.

6.2. Problems with Configuration

Table 6.2. Troubleshooting the SA-ACE16 configured setting

Problems	*Steps to Take*
Your configuration settings do not take effect at restart	1. Use the command: save to save your configuration before you restart the SA-ACE16. (See “Saving the system” section on page 65). 2. If the above corrective action doesn’t work, contact for technical support.

6.3. Problems with Telnet

Table 6.3. Troubleshooting Telnet

Problems	*Steps to Take*
You cannot telnet into the SA-ACE16	1. Make sure that telnet session is not already operating. The SA-ACE16 will only accept one telnet session at a time. 2. Ping the SA-ACE16 from your computer. If you are able to ping the SA-ACE16 but are still unable to telnet, contact the distributor. If you cannot ping the SA-ACE16, check the IP address in the SA-ACE16 and your computer. Make sure that both IP addresses are located in the same subnet. 3. If the above corrective actions don’t work, contact for technical support.

6.4. Problems with Password

Table 6.4. Troubleshooting the password

Problems	*Steps to Take*
You forgot the password	Restore the configuration file ”sf_user.cfg”. All settings will return to the configuration as “sf_user.cfg”, so any configuration you have made in CLI will be lost. If the above corrective actions don’t work, contact for technical support.

APPENDIX-A: PIN ASSIGNMENT

CID Pin Assignment

The CID port is configured as DCE. The connection for such link is given below:

Table A.1. SA-ACE16 CID port pin assignment

Pin no.	*Usage*
1	----------
2	RD
3	TD
4	DTR
5	GND
6	DSR
7	RTS
8	----------
9	----------

Note! *Connector type is DB9 male.*

Table A.2. Null modem cable pin assignment (for PC to CID port connection)

DB9 female DB9 female

Table A.3. SA-ACE16 uplink port pin assignment

Pin no.	*Usage*
1	TX+
2	TX-
3	RX+
4	---------
5	---------
6	RX-
7	---------
8	----------

Note! *Connector type is RJ-45.*

Table A.4. Uplink and downlink port (Xn) pin assignment

Pin no.	*Usage*
1	TX+
2	TX-
3	RX+
4	---------
5	---------
6	RX-
7	---------
8	----------

Note!
(1) Ports are auto-crossover. 2) Connector type is RJ-45.Transceiver connector pin assignment.

Table A.5. 8 ports DSL LINE Connector pin assignment

PIN #	*usage*	*PIN#*	*usage*
1	DSL loop#1-T	26	DSL loop#1-R
2	DSL loop#2-T	27	DSL loop#2-R
3	DSL loop#3-T	28	DSL loop#3-R
4	DSL loop#4-T	29	DSL loop#4-R
5	DSL loop#5-T	30	DSL loop#5-R
6	DSL loop#6-T	31	DSL loop#6-R
7	DSL loop#7-T	32	DSL loop#7-R
8	DSL loop#8-T	33	DSL loop#8-R
9	:	34	:
:	:	:	:
25	:	50	:

Note! *Connector type is 50 pin teleco-champ female.*

GLOSSARY

AAL

ATM adaptation layer. Service-dependent sublayer of the data link layer. The AAL accepts data from different applications and presents it to the ATM layer in the form of 48-byte ATM payload segments. AALs consist of two sublayers: CS and SAR. AALs differ on the basis of the source-destination timing used (CBR or VBR) and whether they are used for connection-oriented or connectionless mode data transfer. At present, the four types of AAL recommended by the ITU-T are AAL1, AAL2, AAL3/4, and AAL5.

AAL5

ATM adaptation layer 5. One of four AALs recommended by the ITU-T. AAL5 supports connection-oriented VBR services and is used predominantly for the transfer of classical IP over ATM and LANE traffic. AAL5 uses SEAL and is the least complex of the current AAL recommendations. It offers low bandwidth overhead and simpler processing requirements in exchange for reduced bandwidth capacity and error-recovery capability. See also *AAL*.

ADSL

Asymmetric digital subscriber line. ADSL is designed to deliver more bandwidth downstream (from the central office to the customer site) than upstream. Downstream rates range from 1.5 to 9 Mbps; upstream bandwidth ranges from 16 kbps to 1 Mbps. ADSL transmissions work at distances up to 8 km over a single copper wire twisted pair. See also DSL.

ATM

Asynchronous Transfer Mode. A cell-based data transfer technique in which channel demand determines packet allocation. ATM offers fast packet technology, real times; demand led switching for efficient use of network resources. This is an International standard for cell relay in which multiple service types (such as voice, video or data) are conveyed in fixed-length (53-byte) cells. Fixed-length cells allow cell processing to occur in hardware, thereby reducing transit delays. ATM is designed to take advantage of high-speed transmission media such as E3, SONET, and T3.

ATU-C

DSL Transmission Unit — central office.

ATU-R

DSL Transmission Unit — remote.

BAS

Broadband Access Server. Device within the DSL POP terminating PPP sessions providing access to routing or service selection. Can be the same hardware platform as the LAC.

BRAS

Broadband Remote Access Server. Device that terminates remote users at the corporate network or Internet users at the Internet Service Provider (ISP) network, such as the NetSpeed FireRunner product that provides firewall, authentication, and routing services for remote users.

Community Name

An identification used by an SNMP manager to grant an SNMP server access rights to a MIB.

CPE

Customer premises equipment. Terminating equipment at the subscriber's side of the local telephone loop. CPE is often supplied by the telephone company and is always connected to the telephone company's network. Examples of CPE include telephones, POTS splitters, terminals, modems, and the Cisco 676 router.

DSL

Digital subscriber line. A public network technology that delivers high bandwidth over conventional copper wiring (such as telephone lines) at limited distances. There are five types of DSL: ADSL, HDSL, IDSL, SDSL, and VDSL. All are provisioned through modem pairs, with one modem located at a central office and the other at the customer site. Because most DSL technologies do not use the whole bandwidth of the twisted pair, there is room left for a voice channel. See also ADSL.

DSLAM

Digital Subscriber Line Access Multiplexer. A device that concentrates traffic in DSL implementations through a process of time-division multiplexing (TDM) at the CO or remote line shelf. This device is usually located in the CO for termination of multiple customer DSL devices.

ESS (Error Seconds)

ESS is a generic term with various meanings depending on the signal standards domain in which it’s being used.

Ethernet

One of the most popular baseband LANs in widespread use. It is a carrier service multiple access collision detect (CSMA/CD) system using coaxial cable and developed by Xerox, Intel, and Digital Equipment Corporation. Introduced in 1979. Ethernet Version II is compatible with the IEEE 802.3 CSMA/CD standard.

G.SHDSL

G.SHDSL is a standards-based, multirate version of HDSL-2 and offers symmetrical service. The advantage of HDSL-2, which was developed to serve as a standard by which different vendors' equipment could interoperate, is that it is designed not to interfere with other services. However, the HDSL-2 standard addresses only services at 1.5 Mbps. Multirate HDSL-2 is part of Issue 2 of the standard known as G.SHDSL, and is ratified by the ITU. G.SHDSL builds upon the benefits of HDSL-2 by offering symmetrical rates of 2.3 Mbps.

IP

Internet Protocol. Network layer protocol in the TCP/IP stack offering a connectionless internetwork service. IP provides features for addressing, type-of-service specification, fragmentation and reassembly, and security. Defined in RFC 791.

ISP

Internet Service Provider. A company that offers individual customers or corporations dialup or leased-line connections to the Internet for a fee.

LAN (Local Area Network)

A non-public data network in which serial transmission is used without store and forward techniques for direct data communication among data stations located on the user's premises.

Lofs (Loss of Frames)

Lofs is a generic term with various meanings depending on the signal standards domain in which it's being used.

Lols (Loss of Links)

Lols is a generic term with various meanings depending on the signal standards domain in which it's being used.

Loss (Loss of Signals)

A loss of signal occurs when *n* consecutive zeros is detected on an incoming signal.

Lprs (Loss of Power failures)

Lprs is a generic term with various meanings depending on the signal standards domain in which it's being used.

MDF (Main Distribution Frame)

Hardware component in the CO, which provides an interface between outside lines (subscriber lines and trunks) and the switching equipment. The vertical side of the mainframe where the outside plant cables are terminated on connectors/protectors. Also known as mainframe.

MTU/MHU

MTU is Multi-Tenant Unit whereas MHU is Multi-Hotel Unit.

PPP (Point to Point Protocol)

A successor to Serial Line IP (SLIP), PPP provides router-to-router and host-to-network connections over synchronous and asynchronous circuits.

PPPoE

PPP over Ethernet. The transport of PPP frames over Ethernet.

PSTN (Public Switched Telephone Network)

General term referring to the variety of telephone networks and services in place worldwide. Sometimes called *POTS*.

PVC(Permanent Virtual Circuit, or connection)

Virtual circuit that is permanently established. PVCs save bandwidth associated with circuit establishment and tear down in situations where certain virtual circuits must exist all the time. In ATM terminology, called a permanent virtual connection.

Rack mount

A structure that houses shelves (usually a maximum of four). The unit or container that houses the internal modular circuitry. The shelf consists of slots that hold each module and a backplane that interconnects all modules.

SAR

Segmentation and reassembly. One of the two sub-layers of the AAL CPCS, responsible for dividing (at the source) and reassembling (at the destination) the PDUs passed from the CS. The SAR sub-layer takes the PDUs processed by the CS and, after dividing them into 48-byte pieces of payload data, passes them to the ATM layer for further processing. See also *AAL* and *ATM*.

SDU (Service Data Unit)

Unit of information from an upper-layer protocol that defines a service request to a lower-layer protocol.

Signal Noise Ratio (SNR)

This is a DSL transmission parameter, measured in dB, which indicates the Signal-to-Noise (S/N) ratio at a receiver point.

SNAP

Subnetwork Access Protocol. Internet protocol that operates between a network entity in the subnetwork and a network entity in the end system. SNAP specifies a standard method of encapsulating IP datagrams and ARP messages on IEEE networks. The SNAP entity in the end system makes use of the services of the subnetwork and performs three key functions: data transfer, connection management, and QoS selection.

SNMP (Simple Network Management Protocol)

Simple Network Management Protocol. The network management protocol used almost exclusively in TCP/IP networks. SNMP provides a means to monitor and control network devices, and to manage configurations, statistics collection, performance, and security.

SVC

Switched Virtual Circuit. Virtual circuit that is dynamically established on demand and is torn down when transmission is complete. SVCs are used in situations where data transmission is sporadic. See also virtual circuit. Called a switched virtual connection in ATM terminology.

VC

Logical circuit created to ensure reliable communication between two network devices. A virtual circuit is defined by a VPI/VCI pair, and can be either permanent (PVC) or switched (SVC). Virtual circuits are used in Frame Relay and X.25. In ATM, a virtual circuit is called a virtual channel.

VID

VLAN ID. The identification of the VLAN, which is used by the standard 802.1Q. Being on 12 bits, it allows the identification of 4096 VLANs.

VLAN

Virtual LAN. Group of devices on one or more LANs that are configured (using management software) so that they can communicate as if they were attached to the same wire, when in fact they are located on a number of different LAN segments. Because VLANs are based on logical instead of physical connections, they are extremely flexible.