SifoWorks U200 User Manual 1.0

OD7200UME01 – 1.0

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Getting Started

The SifoWorks U200 system supports Web-based administration, thus enabling you to configure the system from different operating systems simply through a standard web browser.

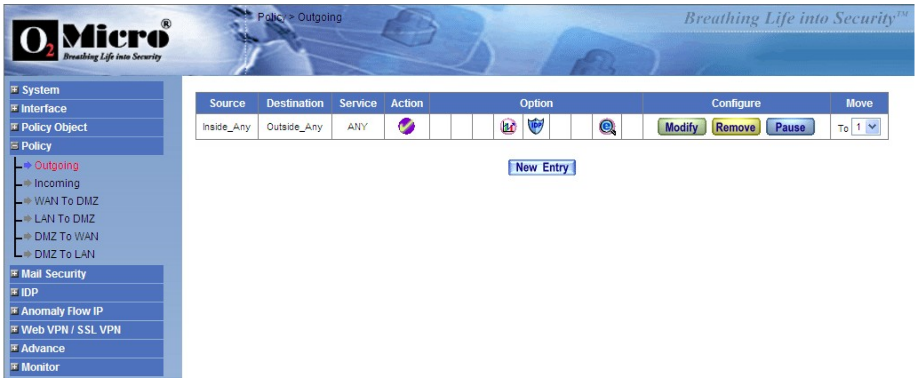
Logging into the System

Activate your preferred web browser (such as Internet Explorer, Firefox etc.) and enter the system's IP address into the address bar.

You can use the HTTP (http://IP) or HTTPS (https://IP) procotols to access the WebUI if enabled in the system's interface configuration. Please refer to *chapter 3, section 3.1* for details on enabling access through the required protocol.

> **Note:** *On your first login, you should connect to the device's LAN interface with default IP address 192.168.1.1. You can then proceed to configure the system for administrator access via the other interfaces. Please refer to the SifoWorks UTM Quick Start Guide for details on setting up access to the SifoWorks web UI.*

At the prompt, login with your administrator account **username** and **password**. Upon successful login, you will be greeted with the system's web interface as shown in the figure below:



Source	Destination	Service	Action	Option	Configure	Move
Inside_Any	Outside_Any	ANY	✓		Modify Remove Pause	To 1

You can navigate the system functions via the menu displayed on the left column of the interface.

Logging Out from the System

For security reasons, you should logout of the system after you have completed your configuration operations. From the left menu, select **“System > Logout > Logout”**. At the prompt, confirm that you want to logout of the system.

You will need to restart your browser if you wish to re-login.

Chapter

1

Administrator Management

1.1 Administrator Accounts

SifoWorks U200 comes with a default administrator account with the **username** “admin” and **password** “admin”. This account cannot be deleted from the system. For security purposes, we recommend that you change the default password of this account. Please refer to *section 1.1.2* for information on changing account password.

The SifoWorks U200 default administrator account acts as a main administrator with read-write authority. This means that this administrator account is authorized to perform configurations on the system.

You can add multiple administrator accounts. There are two types of administrators in the system. Sub-administrators are assigned with a read authority. Hence, these administrators are only authorized to view the system settings and access the “Monitor” function. Main administrators are authorized to access all functions in the system.

From the left menu bar, select **“System > Administration > Admin”** to view the list of administrators. You can edit or delete an account by clicking the **[Modify]** or **[Remove]** button corresponding to an administrator account in the list respectively.

1.1.1 Adding a New Administrator Account

From the bottom of the list, click **[New Sub Admin]** to add a new administrator account. Enter the **admin name** and account **password** in the next screen. Retype the password to **confirm**. Enable the options **write access** and **view log & report privilege** to add the account as a main administrator account. Click **[OK]** to add the new administrator account.

Note: *Main administrators can remove his write privilege to change a main administrator account into a sub administrator account.*

1.1.2 Changing an Account Password

From the administrator list, click the **[Modify]** corresponding to the account you want to edit. In the next screen, enter the account's current **password**, **new password** and retype the new password to **confirm**. Click **[OK]** to save the changes.

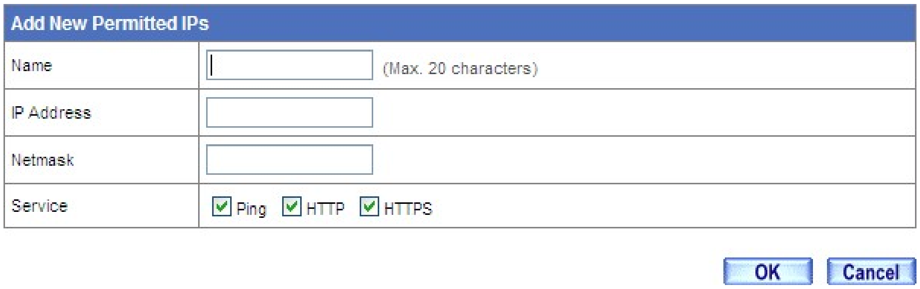
1.2 Permitted Login IPs

SifoWorks U200 enables the main administrator to restrict the IP addresses from which administrators can log into the system.

Select **"System > Administration > Permitted IPs"** to view the list of permitted IP addresses. You can edit or delete permitted IP addresses by clicking the appropriate **[Modify]** or **[Remove]** buttons respectively.

1.2.1 Adding Permitted IP Addresses

Click **[New Entry]** from the bottom of the list to display the Add permitted IP address UI.



Add New Permitted IPs

Name	(Max. 20 characters)
IP Address	
Netmask	
Service	☑ Ping ☑ HTTP ☑ HTTPS

Fig. 1.1

Enter the **name**, allowed **IP address** and the corresponding **netmask**. Select whether to allow users logged in through this IP address to access the **Ping**, **HTTP** and **HTTPS** services.

Note: *After configuring the permitted IP, you must disable* ***Ping****,* ***HTTP*** *and* ***HTTPS*** *system management services from the "Interface" function. Please refer to Chapter 3, section 3.1 for configuration details.*

Chapter

2

Basic System Configurations

2.1 Basic Settings

Select **“System > Configure > Setting”** from the left menu. Here, the main administrator can setup a number of basic system settings described in the following sections.

2.1.1 Importing/Exporting System Settings

In the “SifoWorks Configuration” portion on the top of the page, you can import a previously saved configuration file into the system. Click **[Browse…]** to select the file to import and click **[OK]** from the bottom of the page.

Click the **[Download]** button to export the current configurations into a file to be stored in the local disk.

Select **Reset factory setting** and click **[OK]** from the bottom of the page to reset all system configurations to the default factory setting.

Select **Format Hard Disk** and click **[OK]** from the bottom of the page to format the SifoWorks U200’s harddisk.

> **Note:** *The system will be automatically rebooted after importing the configuration file. A warning message will be displayed and users will be able to re-login to the system in about 2 minutes.*

2.1.2 Email Alert Notification Settings

This function enables the system to send email alerts informing administrators of detected attacks or network emergency conditions. In the "System Name Setting" portion, enter your **company name** and the **device name** used to identify this SifoWorks U200 device.

In the "E-mail Setting" portion, select **enable E-mail alert notification** and setup the corresponding parameters including the **sender's address**, **SMTP server** address and up to 2 recipient e-mail addresses.

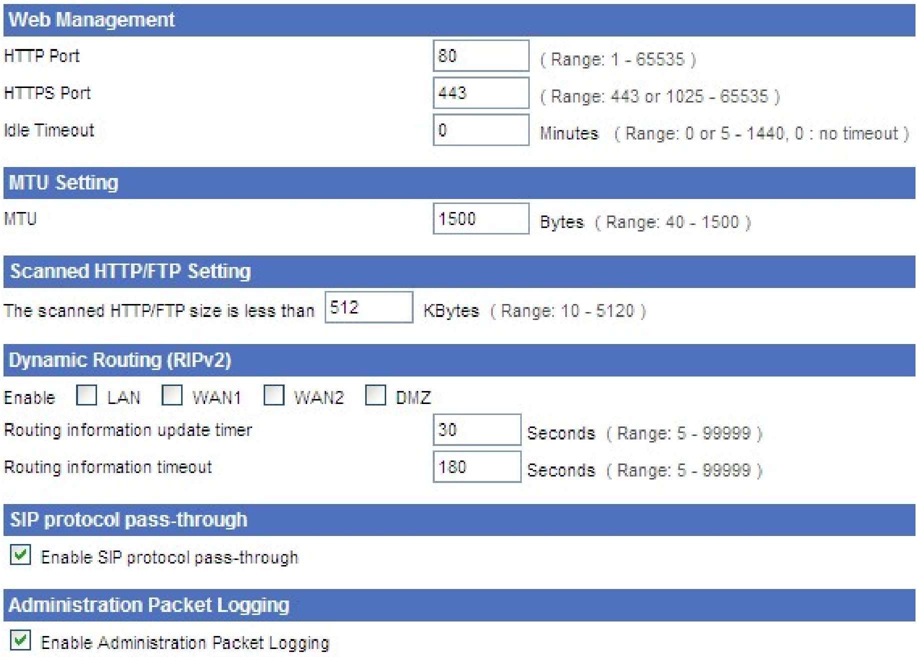
If the system must be authenticated by the SMTP server, **enable SMTP server authentication** and enter the **username** and **password**.

Click **[Mail Test]** to check that the configured recipients are able to receive the alert notification emails. Click **[OK]** from the bottom of the page to save the setting.

2.1.3 Reboot System

From the bottom of the page, click **[Reboot]** to restart the SifoWorks U200 device.

2.1.4 Basic Network Settings



Web Management

HTTP Port 80 (Range: 1 - 65535)

HTTPS Port 443 (Range: 443 or 1025 - 65535)

Idle Timeout 0 Minutes (Range: 0 or 5 - 1440, 0 : no timeout)

MTU Setting

MTU 1500 Bytes (Range: 40 - 1500)

Scanned HTTP/FTP Setting

The scanned HTTP/FTP size is less than 512 KBytes (Range: 10 - 5120)

Dynamic Routing (RIPv2)

Enable □ LAN □ WAN1 □ WAN2 □ DMZ

Routing information update timer 30 Seconds (Range: 5 - 99999)

Routing information timeout 180 Seconds (Range: 5 - 99999)

SIP protocol pass-through

☑ Enable SIP protocol pass-through

Administration Packet Logging

☑ Enable Administration Packet Logging

Fig. 2.1

“Web Management (WAN Interface)”

Here you can change the **HTTP** and **HTTPS port** numbers. Note that when this is modified, the administrator must change his browser’s port number accordingly when attempting to enter the SifoWorks U200 WebUI (for example, http://192.168.1.1:8080). You can also set the **idle timeout** for administrator logins.

“MTU Setting”

You can edit the maximum size of a network packet here.

“Scanned HTTP/FTP Setting”

Specify the size of HTTP/FTP files that are to be scanned by the system.

“Dynamic Routing (RIPv2)”

Select the ports to **enable** dynamic routing on. With dynamic routing enabled, the system will route packets based on the RIP protocol. Set the **routing information update timer** and **timeout**.

“SIP Protocol pass-through”

Select whether to **enable** session initiation protocol pass-through.

“Administration Packet Logging”

Select whether to **enable** logging of administration packets. When this is enabled, SifoWorks will record all packets with SifoWorks’ IP address as the source or destination IP address. This record can be viewed by selecting **“Monitor > Log > Event”** from the left menu. Please refer to *Chapter 12* for more information.

Click **[OK]** from the bottom of the page to save the configurations.

2.2 System Date and Time Settings

From the left menu, select **“System > Configure > Date/Time”** to setup the device’s date and time. You can choose to synchronize the device’s clock with either an Internet Time Server or the administrator’s system clock.

Synchronize system clock with an Internet Time Server

Select to **enable synchronize with an Internet time Server** and setup the parameters accordingly including:

- **GMT offset**. Click the **[Assist]** link to view a list of countries and their respective GMT offset value.
- **IP** address of the time server. Click the **[Assist]** link to view a list of available time servers and their IP addresses.
- Date during which **daylight saving** is in effect
- Time interval for updating the system clock.

Click **[OK]** to save the changes.

Synchronize device’s clock with administrator PC’s system clock

Click the **[Sync]** button next to **Synchronize system clock with this client** to synchronize SifoWorks’ clock with the system clock of the administrator’s PC.

2.3 Language Settings

Select **“System > Configure > Language”** from the left menu. The SifoWorks U200’s system can be displayed in 1 of 3 languages including English, Simplified Chinese and Traditional Chinese. Select your desired language and click **[OK]** to change the UI display to the selected language.

2.4 Software Update

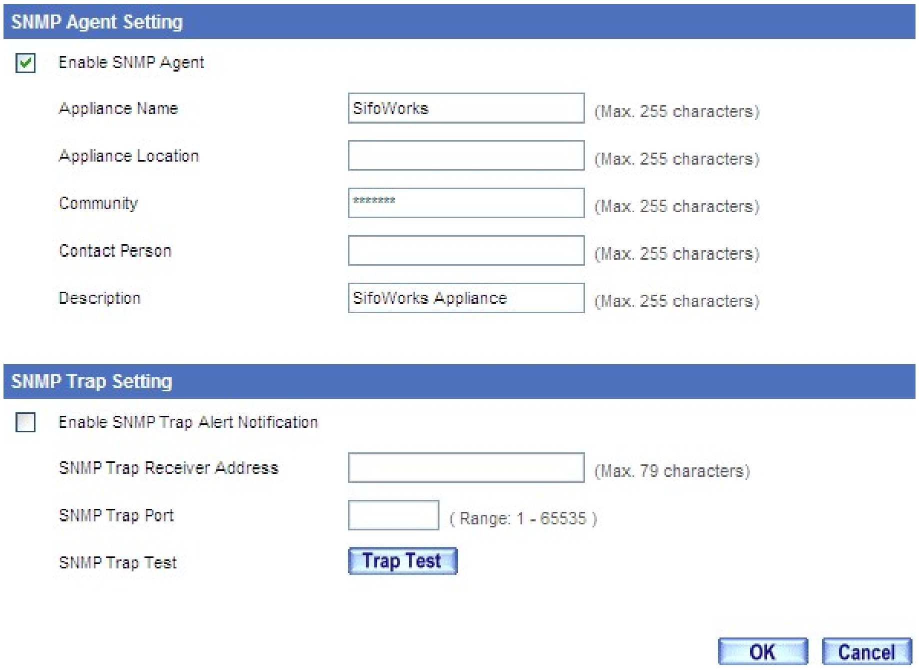
You can update the system's software using the appropriate update files here. Select **"System > Administration > Software Update"**. Click **[Browse…]** and select the upgrade file. Click **[OK]** to begin the update.

> **Note:** *The update process takes roughly 3 minutes. The system will be automatically rebooted after the update is completed.*
>
> *We strongly recommend that you do not turn off the PC or leave the webUI during this period as it may result in unexpected system problems.*

2.5 SNMP

Using the SNMP function, the system can be configured to send notifications to the specified recipients when system events such as attack alerts occur. This keeps the administrators informed of events happening in the network.

Select **"System > Configure > SNMP"** to view the current SNMP configuration.



SNMP Agent Setting

☑ Enable SNMP Agent

Appliance Name	SifoWorks	(Max. 255 characters)
Appliance Location		(Max. 255 characters)
Community	*******	(Max. 255 characters)
Contact Person		(Max. 255 characters)
Description	SifoWorks Appliance	(Max. 255 characters)

SNMP Trap Setting

□ Enable SNMP Trap Alert Notification

SNMP Trap Receiver Address		(Max. 79 characters)
SNMP Trap Port		(Range: 1 - 65535)
SNMP Trap Test	Trap Test	

Fig. 2.2

“SNMP Agent Setting”

Setup the basic settings of the SNMP function in this area. **Enable SNMP Agent** and enter the **name** and **location** of this SifoWorks device. Configure the remaining parameters and click **[OK]** to save the settings.

“SNMP Trap Setting”

Select to **enable SNMP Trap alert notification**. The system will send alert events to the trap recipient specified here. Specify the **receiver address** and the **trap port** and click **[OK]** to save the configuration.

Click **[Trap Test]** to test that the SNMP trap is working correctly.

Chapter

3

Network Settings

3.1 Configuring the Physical Interfaces

SifoWorks U200 provides 4 interface ports for connection to the network. This includes 1 LAN port, 2 WAN ports and 1 DMZ ports. You must first setup the IP address of each port before SifoWorks can successfully communicate with each connected network.

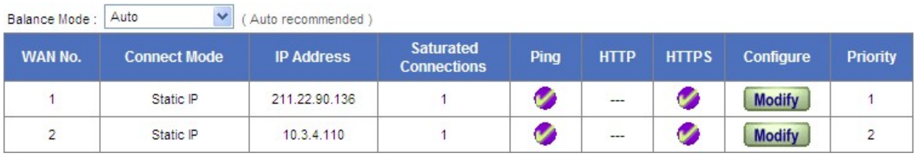
3.1.1 LAN Interface

Select **"Interface > LAN"** to configure the LAN interface port. Enter the **IP address** and **netmask** of the connected LAN. Enabling **Ping** will allow users on the connected LAN to ping this interface's address. Enable **HTTP** and/or **HTTPS** to allow administrators to login to the device's WebUI from the connected LAN via the HTTP and/or HTTPS protocol.

Click **[OK]** to save the configurations. Please restart the system for the new LAN IP address to be effective.

3.1.2 WAN Interface

Select **"Interface > WAN"** to configure the WAN interface ports. The list shows the current configurations for the two WAN ports. Note that the "WAN1" port cannot be disabled while the "WAN2" port is disabled by default.



Balance Mode : Auto (Auto recommended)

WAN No.	Connect Mode	IP Address	Saturated Connections	Ping	HTTP	HTTPS	Configure	Priority
1	Static IP	211.22.90.136	1	✓	---	✓	Modify	1
2	Static IP	10.3.4.110	1	✓	---	✓	Modify	2

Fig. 3.1

From the top of the list, select the **balance mode** between the two WAN ports. The available modes include:

- Auto: SifoWorks will automatically adjust the downstream/upstream bandwidth between the two WAN ports.
- Round-Robin: SifoWorks distributes the WAN download bandwidth in order.
- By Traffic: Bandwidth is distributed based on the accumulative traffic on each port.
- By Session: Bandwidth is distributed based on the number of connections on each port.
- By Packet: Bandwidth is distributed based on the number of packets and connections on each port
- By Source IP: Bandwidth is distributed based on the source IP of the packets.
- By Destination IP: Bandwidth is distributed based on the destination IP of the packets.

You can also select the maximum number of sessions on each WAN port from the **Saturated Connections** column of the list. When this number is reached, SifoWorks will direct subsequent connections to the next port.

Set the port's priority of access to the Internet from the **Priority** column.

Click **[Modify]** to edit the configuration of the corresponding WAN port. Note that the settings for WAN1 and WAN2 are similar except that the WAN2 interface has an additional option of being disabled.

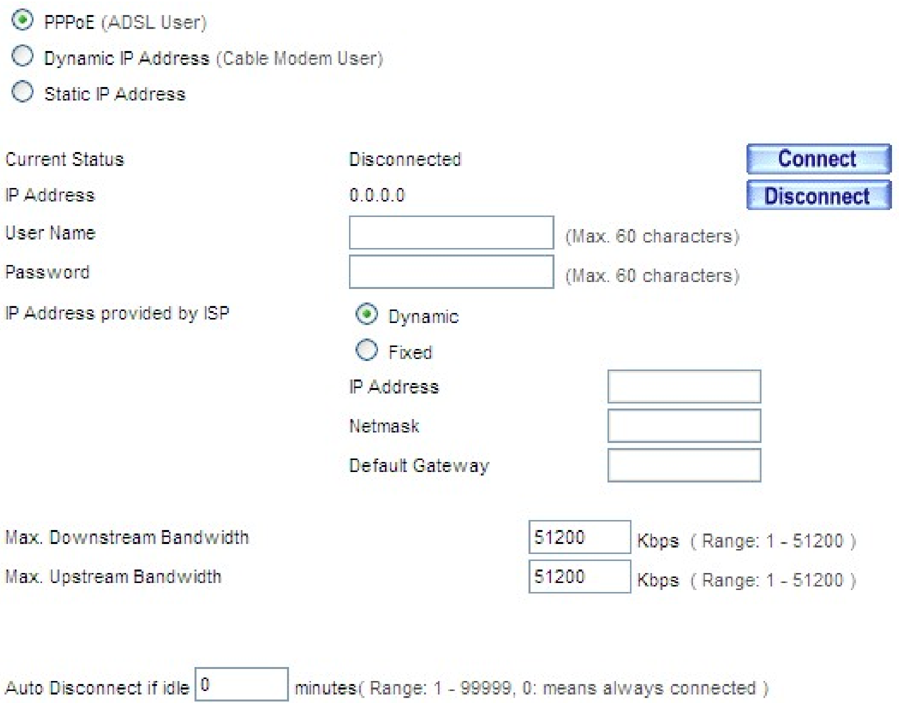
Configure the WAN Interface

Setup the **service** used to perform connection tests on the WAN interface. If "DNS" is selected, enter the **DNS Server IP address** and corresponding **Domain name**. If "ICMP" is selected, enter the **Alive Indicator Site IP** address. You can click the **[Assist]** link next to the **DNS Server IP Address**, **Domain name** or **Alive Indicator Site IP** to view a list of the available DNS Server IP addresses/DNS Server Domain Name/Alive Indicator Site IP addresses respectively. Specify the time interval between the sending of each alive packet.

Select the Internet connection mode from the three methods available, including:

1. “PPPoE”

This refers to ADSL modem connections. The configuration interface is shown below:



● PPPoE (ADSL User)
○ Dynamic IP Address (Cable Modem User)
○ Static IP Address

Current Status	Disconnected	Connect
IP Address	0.0.0.0	Disconnect
User Name		(Max. 60 characters)
Password		(Max. 60 characters)
IP Address provided by ISP	● Dynamic ○ Fixed	
	IP Address	
	Netmask	
	Default Gateway	
Max. Downstream Bandwidth	51200	Kbps (Range: 1 - 51200)
Max. Upstream Bandwidth	51200	Kbps (Range: 1 - 51200)

Auto Disconnect if idle 0 minutes(Range: 1 - 99999, 0: means always connected)

Fig. 3.2

Current Status: The current connection status. You can click the **[Connect]** or **[Disconnect]** button to connect or disconnect the connection respectively.

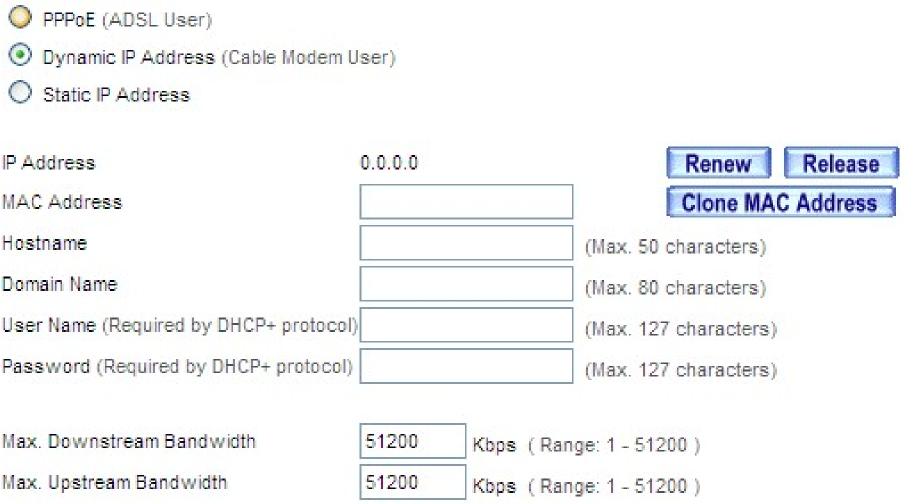
IP Address: Displays the IP address of the connection.

Enter the **user name** and **password** as registered with the Internet service provider (ISP). Specify whether the connection IP address is **fixed** or **dynamic**. Enter the **IP address**, **netmask** and **default gateway** of the connection.

Configure the **maximum downstream** and **upstream** bandwidth of the connection and set the **idle time**.

2. "Dynamic IP Address"

This is for cable modem connections. The configuration interface is shown below:



○ PPPoE (ADSL User)
● Dynamic IP Address (Cable Modem User)
○ Static IP Address

IP Address	0.0.0.0	[Renew] [Release]
MAC Address		[Clone MAC Address]
Hostname		(Max. 50 characters)
Domain Name		(Max. 80 characters)
User Name (Required by DHCP+ protocol)		(Max. 127 characters)
Password (Required by DHCP+ protocol)		(Max. 127 characters)
Max. Downstream Bandwidth	51200	Kbps (Range: 1 - 51200)
Max. Upstream Bandwidth	51200	Kbps (Range: 1 - 51200)

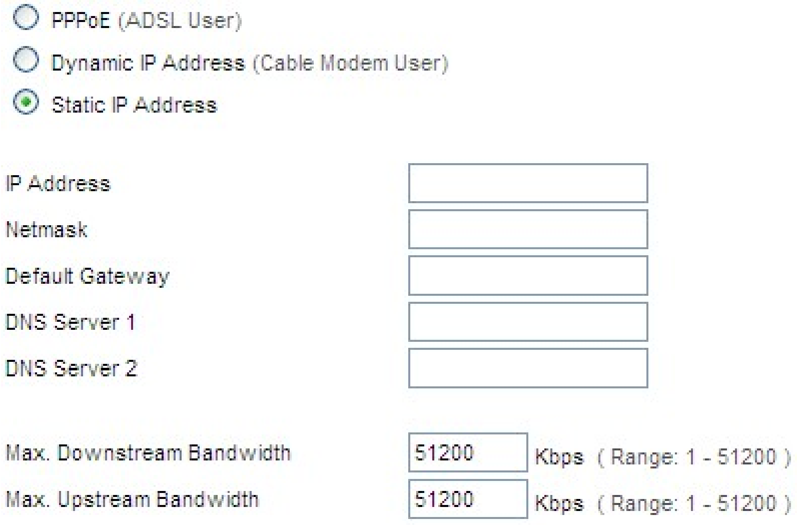
Fig. 3.3

IP Address displays the IP address currently assigned to this connection by the ISP. Click **[Renew]** to obtain an IP address from the ISP. Click **[Release]** to stop the use of this IP address and disconnect from the ISP.

If required by the ISP, click **[Clone MAC Address]** to automatically configure the system's MAC address. Enter the **hostname**, **domain name**, **user name** and **password** as provided by the ISP.

Specify the **maximum downstream** and **upstream bandwidth** of this connection.

3. “Static IP Address”



○ PPPoE (ADSL User)
○ Dynamic IP Address (Cable Modem User)
● Static IP Address

IP Address	
Netmask	
Default Gateway	
DNS Server 1	
DNS Server 2	
Max. Downstream Bandwidth	51200 Kbps (Range: 1 - 51200)
Max. Upstream Bandwidth	51200 Kbps (Range: 1 - 51200)

Fig. 3.4

Here, enter the static **IP address**, **netmask**, and the IP addresses for the **default gateway** and **DNS Servers**. Specify the **maximum downstream** and **upstream bandwidth** for this connection.

Note that specifying the IP addresses of the DNS servers is not needed for the WAN2 interface.

From the bottom of the configuration interface, enable **HTTP** and/or **HTTPS** to allow administrators to login to the device’s WebUI from the connected WAN. Enabling **Ping** will allow users on the connected WAN to ping this interface’s address.

Click **[OK]** to save the configurations.

Warning: *Allowing WAN users to access the system’s WebUI may compromise the security of the system and network. We therefore recommend that you disable* ***HTTP****,* ***HTTPS*** *and* ***PING*** *on the WAN interfaces.*

If the administrator needs to access the WebUI from the WAN network, we recommend that you setup permitted IPs instead. Please refer to Chapter 1, section 1.2 for configuration details.

3.1.3 DMZ Interface

Select **"Interface > DMZ"** to configure the DMZ interface port. Select the working mode from the drop down menu and enter the corresponding **IP address** and **netmask**. The modes include:

- "Disable": Disable the use of the DMZ port.
- "NAT": In NAT mode, DMZ exists as an independent virtual subnet. The virtual subnet must not be the same as the configuration for the LAN interface.
- "DMZ_Transparent": In this mode, the DMZ exists within the same subnet as the WAN interface. For this mode to be available, the WAN interface connection mode must be "Static IP Address".

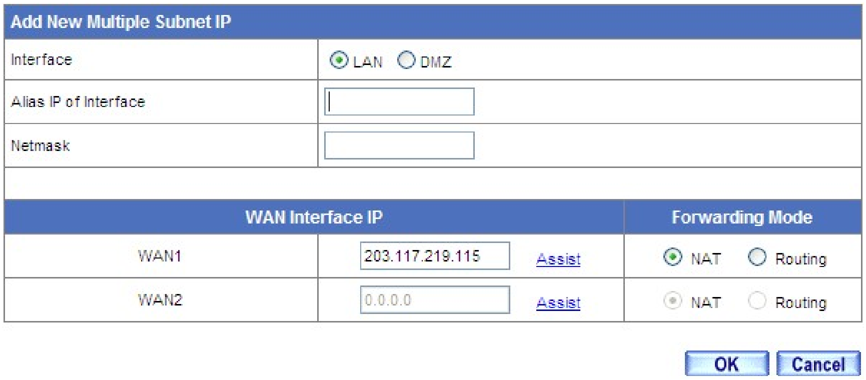
From the bottom of the configuration interface, enable **HTTP** and/or **HTTPS** to allow administrators to login to the device's WebUI from the connected DMZ. Enabling **Ping** will allow users on the connected DMZ to ping this interface's address.

Click **[OK]** to save the settings.

3.2 Configuring Multiple Subnets

From the left menu, select **"System > Configure > Multiple Subnets"**. This function allows administrators to setup multiple subnets within the LAN or DMZ network.

The list displayed shows the various subnets configured in the system and their corresponding settings. You can edit or delete any subnet from the list by clicking the appropriate buttons. Click **[New Entry]** to add a new subnet.



Add New Multiple Subnet IP

Interface	● LAN ○ DMZ
Alias IP of Interface	
Netmask	

WAN Interface IP		Forwarding Mode
WAN1	203.117.219.115 Assist	● NAT ○ Routing
WAN2	0.0.0.0 Assist	● NAT ○ Routing

Fig. 3.5

Select the whether the subnet is in the "LAN" or "DMZ" **interface**. Enter the **Alias IP** address of this subnet and the corresponding **netmask**.

Setup the **WAN Interface IP** addresses of WAN1 and/or WAN2 that the subnet communicates with. Click the **[Assist]** link to view a list of the WAN IP addresses.

Select the **Forwarding Mode** for each WAN interface the subnet communicates with. **NAT** mode allows multiple subnet addresses to connect to the Internet through different WAN IP addresses. **Routing** mode

Click **[OK]** to add the new subnet.

Application Example

In this example, we set up 2 subnets such that both are able to connect to the Internet through the SifoWorks U200 WAN interfaces. WAN1 (10.10.10.1) is connected to an ISP router with IP address 10.10.10.2 and connects to the Internet via **routing** mode. WAN2 (211.22.22.22) is connected to the ADSL/Cable router and connects to the Internet via **NAT** mode. The figure below shows the topology of the network described above.

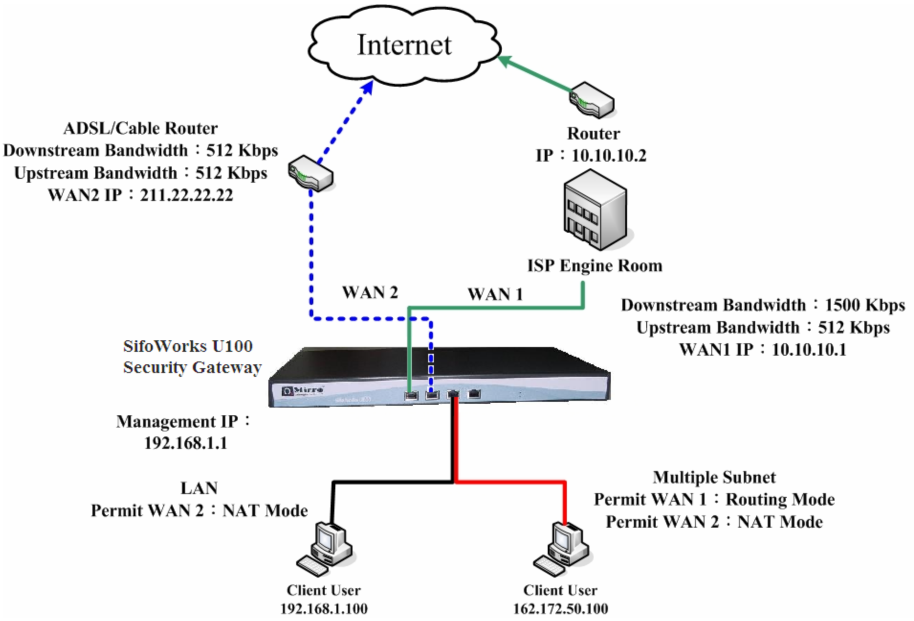


Fig. 3.6

From the left menu, select "**System > Configure > Multiple Subnet**". From the bottom of the list displayed, click **[New Entry]** and setup as follows:

Alias IP of LAN Interface: 162.172.50.1

Netmask: 255.255.255.0

WAN1: Select **Routing** for **Forwarding Mode**

WAN2: Select **NAT** for **Forwarding Mode** and enter the IP address 211.22.22.22.

Click **[OK]** to save the new subnet.

We now have 2 subnets in the LAN, the default LAN subnet with address 192.168.1.0/24 and the subnet we configured earlier 162.172.50.0/24.

Setup the relevant outgoing Policy rules in “**Policy > Outgoing**” such that:

1. All hosts in the default subnet with IP address 192.168.1.xxx can only access the Internet through the WAN2 interface via NAT mode. Hosts in this subnet cannot use their private IP to access the internet via routing mode.

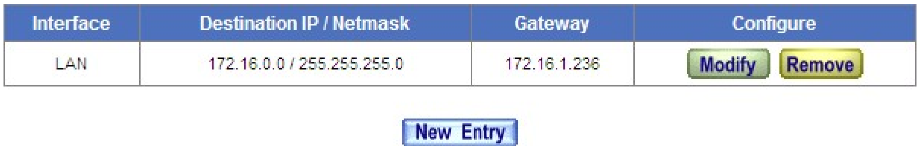
2. All hosts in the second subnet with IP address 162.172.50.xxx can access the Internet via routing mode through the WAN1 interface. In this mode, the host’s IP address (162.172.50.xxx) is made public to the Internet servers.

3. All hosts in the second subnet can also access the Internet via NAT through the WAN2 interface. Here, the internet servers will only see the WAN2 interface’s IP address.

Please refer to *chapter 7, section 7.1* for details on configuring outgoing policies.

3.3 Route Table

Select **“System > Configure > Route Table”** to view the list of static routes configured in the system. From the list, you can edit or delete the routes by clicking the appropriate buttons.



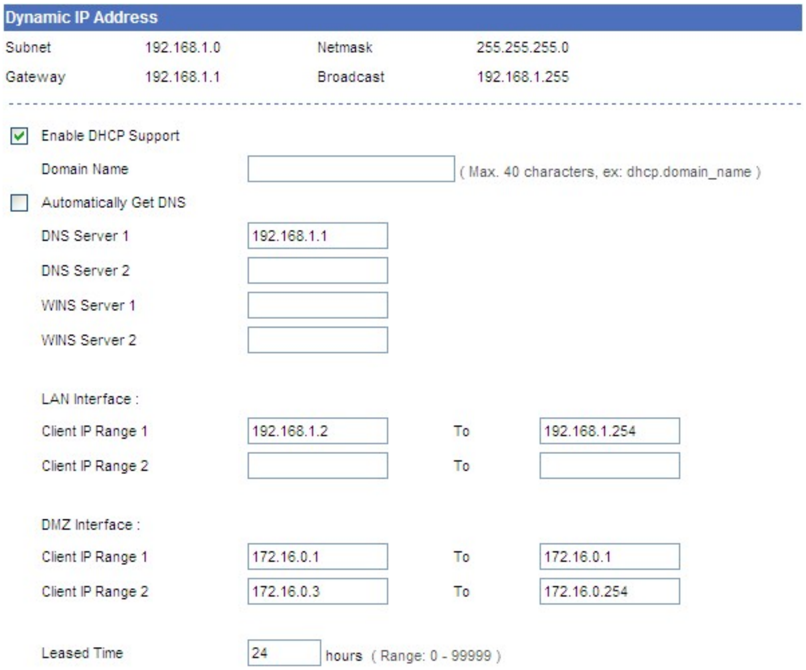
Interface	Destination IP / Netmask	Gateway	Configure
LAN	172.16.0.0 / 255.255.255.0	172.16.1.236	Modify Remove

Fig. 3.7

Click **[New Entry]** to view the add new static route configuration interface. Enter the relevant parameters including **destination IP**, **netmask**, **gateway** and **interface** of the static route. Click **[OK]** to add the new static route.

3.4 Setting DHCP

Here you can setup the DHCP server for the LAN and DMZ interfaces. Select **"System > Configure > DHCP"** from the left menu to view the configuration interface.



Dynamic IP Address

Subnet	192.168.1.0	Netmask	255.255.255.0
Gateway	192.168.1.1	Broadcast	192.168.1.255

☑ Enable DHCP Support

Domain Name (Max. 40 characters, ex: dhcp.domain_name)

□ Automatically Get DNS

DNS Server 1	192.168.1.1		
DNS Server 2			
WINS Server 1			
WINS Server 2			
LAN Interface :			
Client IP Range 1	192.168.1.2	To	192.168.1.254
Client IP Range 2		To	
DMZ Interface :			
Client IP Range 1	172.16.0.1	To	172.16.0.1
Client IP Range 2	172.16.0.3	To	172.16.0.254

Leased Time 24 hours (Range: 0 - 99999)

Fig. 3.8

Select to **Enable DHCP Support** and enter the **Domain Name** where the server is situated.

Enter the IP addresses of the primary and secondary **DNS server** and **WINS Server**. You can also select to **automatically get DNS** server's IP address. The system will use the IP address of the LAN interface as the address of the primary DNS server.

Specify the **Client IP Range** used for DHCP lease for the **LAN interface** and the **DMZ interface** separately. You can define up to 2 IP ranges for each of the 2 interfaces.

Note that

1. IP addresses within a range must be in the same subnet.

2. Addresses in **Client IP range 2** must be within the same subnet as **Range 1**.

3. **Client IP range 2** cannot contain the same IP addresses as **Client IP range 1**.

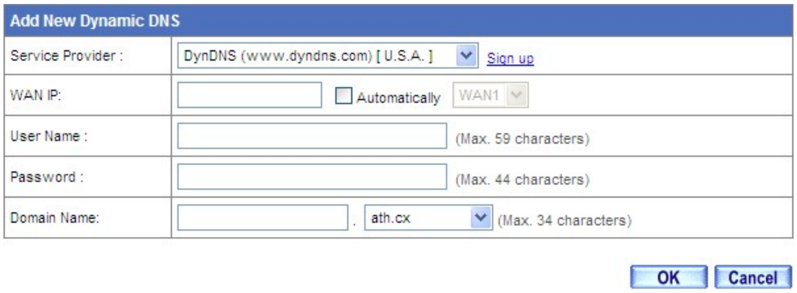
Enter the **leased time** for each IP address lease. The default lease time is 24 hours. Click **[OK]** to save the configurations.

3.5 Dynamic DNS

The dynamic DNS service translates specific domain names to the corresponding host computer which IP address is not static. Users can access the host using just the domain name without having to know the dynamic IP address provided by the computer's ISP.

From the left menu, select **"System > Configure > Dynamic DNS"**. You can setup the use of dynamic DNS (DDNS) servers by the system through this function.

Click **[New Entry]** to view the configuration interface as shown in the figure below:



Add New Dynamic DNS

Service Provider :	DynDNS (www.dyndns.com) [U.S.A.] Sign up
WAN IP:	□ Automatically WAN1
User Name :	(Max. 59 characters)
Password :	(Max. 44 characters)
Domain Name:	. ath.cx (Max. 34 characters)

Fig. 3.9

Select the **Service Provider** you are registered with. You can click the **[sign up]** link to enter the service provider's website to sign up for the DDNS service.

Enter the **WAN IP** address or select to **automatically** fill in the IP according to the address of WAN interface selected.

Enter the registered **user name**, **password**, and the **domain name** of the host. Click **[OK]** to add the new dynamic DNS.

The icon in the leftmost column of the DDNS list displays the status of the corresponding DDNS. The icons include:

✓	✗	🖥	⚠
Update Successful	Incorrect username or password	Connecting to server	Unknown error

3.6 Host Table

Select **"System > Configure > Host Table"** to setup mappings between virtual IP addresses and the host name. The virtual IP address must be the IP address of SifoWorks' LAN or DMZ interface.

Internal users will be able to access services on this host using the virtual IP address mapped to it.

Note: *The IP address of the user's primary DNS server must be the same as SifoWorks' LAN port or DMZ Port IP address.*

3.7 Switch MAC Table

Select **"System > Configure > Switch MAC Table"** to setup a list of IP addresses corresponding to switches in the network. You can modify or remove any entry in the list by clicking on the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new switch. Enter the switch **name** and **IP address**. Enter the **SNMP community** the switch is assigned to and click **[OK]** to add the new entry.

You can click the **[Test]** link to test if the SNMP community configuration is accurate.

Chapter

4

Policy Object Management

In the SifoWorks system, objects refer to the various components that make up the system's rules. These include addresses, services as well as address groups and service groups, but exclude the type of actions (such as permission, prohibition, forwarding, etc.) specified by rules. An object definition consists of a name, which is a character string arbitrarily defined by the administrator when it is created; and its entity, which might be the IP Address, the group of IP Address, service or service group associated with the defined object.

Defining an object essentially associates a name that is easier to remember to an entity or a group of entities. This way, not only are administrators relieved from remembering all the components, the process of making rules is also simplified and more intuitive since security policies can now be managed in an object oriented perspective.

After objects are defined, you can use them directly in subsequent rule-making process when defining policies and VPN.

The use of objects allows different pieces of information to be linked together by a specific object relationship. The linked information can then be easily managed by referring to a single object. This concept is useful in a network environment where there are a large number of IP addresses, different logic working groups, and different network services. For example, you can define the IP Address groups of a logic team as a single object even if the groups are located in different network segments. This way, you can directly refer to an address object when defining a rule, instead of entering multiple IP addresses. Also, when the members of the logic team change, you can modify the object definition rather than modify the SifoWorks system's policy rules.

This chapter introduces the various objects available in the SifoWorks system.

4.1 Address Objects

The use of address objects allows administrators to associate a name to IP addresses. These can be the address of a host in the network or the address of a sub network. Depending on the network it belongs to, you can define a single LAN IP address, WAN IP address or a DMZ IP address object.

To further simplify the policy making process, the system also allows the definition of address groups for each of the 3 networks. Address groups allow you to group single IP address objects into 1 group object. Therefore, you must first define the necessary single address objects before defining address groups.

4.1.1 Single Address Objects

LAN Address Objects

From the left menu, select **“Policy Object > Address > LAN”** to view the list of address objects for the LAN network. You can modify or delete the objects by clicking the appropriate button in the **Configure** column on the list. Note that the default address object *Inside_Any* cannot be edited or deleted.

Click **[New Entry]** to add a new LAN address object. In the “Add New Address” interface, enter the **name** of the object, **IP address** and corresponding **netmask**. You can also enter a specific **MAC address** to be mapped to the IP address. You can also select whether to get a static IP address from the DHCP server.

Tip: *Click **[Clone MAC Address]** for the system to automatically enter the current user PC’s MAC address.*

Click **[OK]** to add the new address object.

WAN Address Objects

From the left menu, select **“Policy Object > Address > WAN”** to view the list of address objects for the WAN network. You can modify or delete the objects by clicking the appropriate button in the **Configure** column on the list. Note that the default address object *Outside_Any* cannot be edited or deleted.

Click **[New Entry]** to add a new WAN address object. In the “Add New Address” interface, enter the **name** of the object, **IP address** and corresponding **netmask**.

Click **[OK]** to add the new address object.

DMZ Address Objects

From the left menu, select **“Policy Object > Address > DMZ”** to view the list of address objects for the LAN network. You can modify or delete the objects by clicking the appropriate button in the **Configure** column on the list. Note that the default address object *DMZ_Any* cannot be edited or deleted.

Click **[New Entry]** to add a new DMZ address object. In the “Add New Address” interface, enter the **name** of the object, **IP address** and corresponding **netmask**. You can also enter a specific **MAC address**. You can also select whether to get a static IP address from the DHCP server.

Click **[OK]** to add the new address object.

4.1.2 Address Group Objects

From the left menu, select **“Policy Object > Address > LAN Group”** to view the list of address group objects for the LAN network. You can edit or delete any object from the list by clicking on the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new address group object. Enter the object’s **name**. Select the addresses to add into the group from the left **<---Available address --->** list and click the **[Add >>]** button to add it into the **<--- Selected address --->** list on the right. Select the addresses from the list on the right and click **[<<Remove]** to remove the selected addresses from the group.

Click **[OK]** to add the new address group.

This configuration interface is similar for all three types of groups (**LAN Group**, **WAN Group**, **and DMZ Group**).

4.2 Service Objects

Service embedded objects are defined by TCP, UDP services provided in the network.

4.2.1 System Pre-defined Service Objects

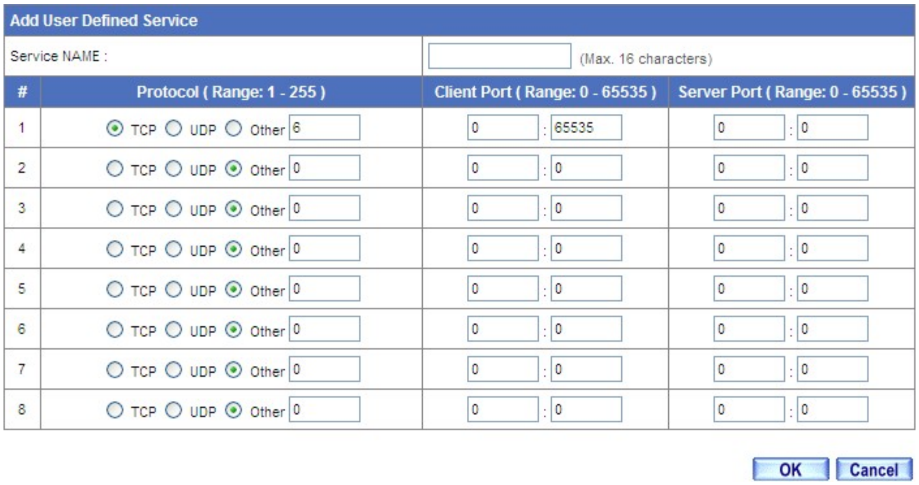
SifoWorks U200's system predefines a number of commonly used TCP and UDP services such as DNS, HTTP, and LDAP etc. These services cannot be modified or deleted.

Select **"Policy Object > Service > Pre-defined"** to view the details of the pre-defined services which includes the protocol type and port number of the service.

4.2.2 Custom Service Objects

In addition to pre-defined services, administrators can also define customized services to suit their needs. Select **"Policy Object > Service > Custom"** to view the list of user-defined service objects.

Click **[New Entry]** to add a new service object. Note that for custom services, the client port number ranges from 0 to 65535 while the server port number ranges from 0 to 65535.



Add User Defined Service

Service NAME : (Max. 16 characters)

#	Protocol (Range: 1 - 255)	Client Port (Range: 0 - 65535)	Server Port (Range: 0 - 65535)
1	● TCP ○ UDP ○ Other 6	0 : 65535	0 : 0
2	○ TCP ○ UDP ● Other 0	0 : 0	0 : 0
3	○ TCP ○ UDP ● Other 0	0 : 0	0 : 0
4	○ TCP ○ UDP ● Other 0	0 : 0	0 : 0
5	○ TCP ○ UDP ● Other 0	0 : 0	0 : 0
6	○ TCP ○ UDP ● Other 0	0 : 0	0 : 0
7	○ TCP ○ UDP ● Other 0	0 : 0	0 : 0
8	○ TCP ○ UDP ● Other 0	0 : 0	0 : 0

Fig. 4.1

Enter the **service name**. Select whether the service uses the "TCP" protocol, "UDP" protocol or select "other" and specify the protocol number. Enter the **client** and **server port** number range for the selected protocol. Each service object can use up to 8 **protocols**, each with their corresponding client and server port number ranges.

Click **[OK]** to add the new service object.

4.2.3 Service Group Objects

From the left menu, select **"Policy Object > Service > Group"** to view the list of service group objects. You can edit or delete any object from the list by clicking on the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new service group object. Enter the object's **name**. Select the services to add into the group from the left **<--- Available service --->** list and click the **[Add >>]** button to add it into the **<--- Selected service --->** list on the right. Select the services from the list on the right and click **[<<Remove]** to remove the selected services from the group.

Click **[OK]** to add the new service group.

4.3 Schedule Objects

You can define schedule objects to setup schedules when specific policies are in effect. From the menu, select **“Policy Object > Schedule >Setting”** to view a list of schedules.

Click **[New Entry]** to add a new schedule. Enter the **schedule name** and specify the time period for each day of the week the schedule is set to take effect. Click **[OK]** to save the new schedule.

Note that schedule objects will only take effect when used in policy definitions. Please refer to *Chapter 6* for details on managing policies.

Application Example

In this example, we want to configure SifoWorks such that LAN users can only access the FTP servers between 9am to 5pm on weekdays.

Select **“Policy Object > Schedule > Setting”** and click **[New Entry]** to add a new schedule. Enter “FTP Access” for **schedule name**. Select **Start Time** as “09:00” and **End Time** “17:00” for **Monday** to **Friday**. Click **[OK]** to save the new schedule.

Select **“Policy > Outgoing”** and click **[New Entry]** to add a new outgoing policy. In the **Schedule** field of the “Add New Policy” interface, select the “FTP Access” schedule object. Select “FTP” for **Service**. Click **[OK]** to save the new policy.

4.4 Quality of Service

Quality of Service (QoS) allows administrators to control the incoming and outgoing upstream and downstream bandwidth according to the WAN bandwidth.

You can define multiple QoS objects and assign different policies with the appropriate QoS object to control the distribution of bandwidth for that policy. An example of bandwidth distribution before and after QoS is applied is shown below:

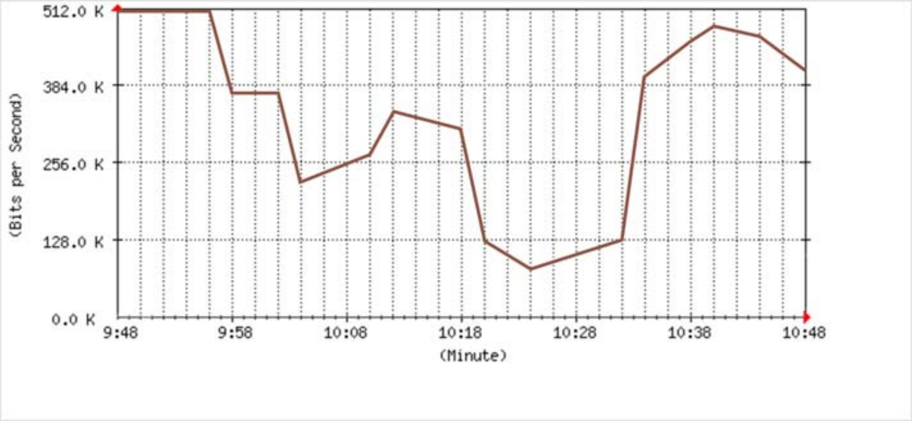


Fig. 4.2 Flow before QoS

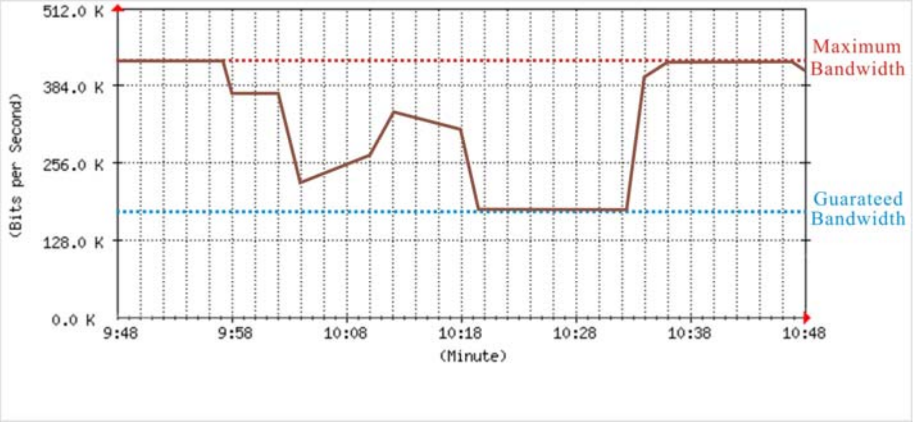


Fig. 4.3 Flow after QoS
(Max bw = 400Kbps, Guaranteed bw = 200Kbps)

As demonstrated from the two charts above, using QoS allows administrators to more efficiently utilize the network's bandwidth.

From the menu, select **"Policy Object > QoS > Setting"** to view a list of QoS objects. You can modify or remove the object by clicking on the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new QoS object.

Enter the **name** of the QoS object and configure the maximum and guaranteed **bandwidth** for the **downstream** and **upstream** bandwidth of **WAN1** and **WAN2** (if WAN2 is enabled). You should configure the bandwidth according the bandwidth provided by the connected ISP.

Set the **QoS priority** and click **[OK]** to save the new object.

Note that you must assign QoS objects to policies for the QoS settings to be effective.

4.5 Content Blocking Objects

You can setup policies to allow or block specific contents from the network through the use of content blocking objects. These include filtering based on URL, download file types etc.

You must enable **content blocking** when defining policies to activate the use of these content blocking objects.

4.5.1 URL

Select **“Policy Object > Content Blocking > URL”** to view a list of content blocking URL defined in the system. You can modify or delete URL objects by clicking the appropriate button in the **configure** column.

Click **[New Entry]** and enter the **URL string**. To restrict a particular URL, enter either the complete domain name or the keyword of the website. To allow a particular URL, add the symbol “~” before the domain name or keyword.

Click **[OK]** to save the new object.

SifoWorks U200 supports the use of the “*” meta-character in the URL string. That is, a URL string “www.gov.*” will match all URLs beginning with the string “www.gov.”. An object with the **URL string** as “*” only will match all URLs. Such an object represents a “forbid all” URL content filter.

Note that when a policy is enabled with content blocking, the system matches the URL to the URL objects in a top-down fashion. Hence, the forbid all (“*”) object must always be the last object in the list.

For example, the URL list has 2 objects, “*” and “~www.google.com”. The system attempts to connect to URL “www.google.com”.

Case 1: “~www.google.com” is above “*” on the list. The system will match the URL it is attempting to access with the URL object list in a top down manner. Hence, it matches the URL with the object “~www.google.com” and therefore, grants the access. The matching mechanism stops.

Case 2: “*” is above “~www.google.com” in the list. In a similar top down fashion, the system attempts to match “*” with “www.google.com”. This returns a match and the system will now forbid the access since “*” represents forbid all URLs.

4.5.2 Script

Select **“Policy Object > Content Blocking > Script”**. You can specify whether to block the use of specific scripts when accessing the Internet. These include **Popup**, **Java**, **ActiveX** and **Cookie** scripts.

Click **[OK]** to save the configuration.

4.5.3 Download Files

Select **“Content Blocking > Download”**. This function allows you to block the downloading of certain file types via the HTTP protocol. You can select the desired file **extension** from the list. Select **All Types** to block the download of all file types. You can also select **audio and video types** to block the download of audio or video files via HTTP.

Click **[OK]** to save the configuration.

4.5.4 Upload Files

Select **“Content Blocking > Upload”**. Similar to the download blocking object, this function allows you to block the uploading of certain file types via the HTTP protocol. Select the desired file **extension** from the list or click **all types** to block the uploading of all files.

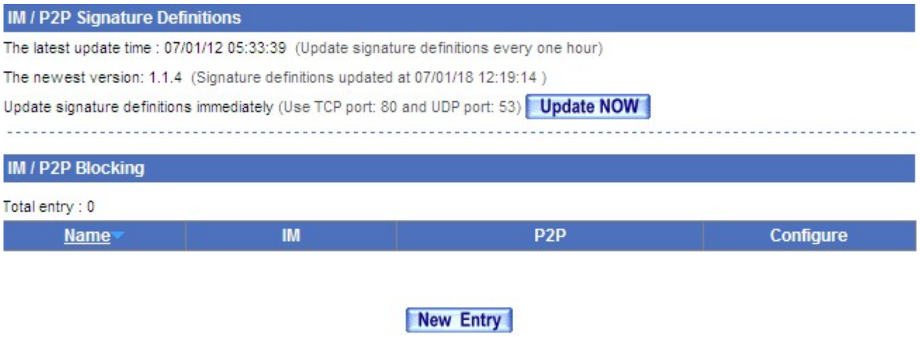
Click **[OK]** to save the configuration.

4.6 IM/P2P Content Blocking

SifoWorks U200's system further allows administrator to block the use of specific instant messaging and peer-to-peer applications.

As with content blocking, you must enable **IM/P2P blocking** when defining policies to activate the use of these objects.

Select **"Policy Object > IM/P2P Blocking > Setting"** from the left menu.



IM / P2P Signature Definitions

The latest update time : 07/01/12 05:33:39 (Update signature definitions every one hour)

The newest version: 1.1.4 (Signature definitions updated at 07/01/18 12:19:14)

Update signature definitions immediately (Use TCP port: 80 and UDP port: 53)

IM / P2P Blocking

Total entry : 0

Name	IM	P2P	Configure

Fig. 4.4

The top half of the interface displays information on the IM/P2P signature definitions in the system including the last **update time** and the current definition file version. Signature definition files are updated hourly. You can also click **[Update NOW]** to manually update the signature definitions in the system.

The second half of the interface displays a list of IM/P2P blocking objects already defined by the administrators. You can modify or delete any object from the list by clicking the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new IM/P2P blocking object. Enter the **name** of the object and select the **instant messaging** and/or **peer-to-peer** applications to be blocked. Click **[OK]** to add the new object.

Chapter

5

Authentication

In the authentication function group, you can setup basic authentication settings, authentication server settings and authentication users. Both internal and remote users can be setup to require authentication before he can access the Internet.

To activate the use of the authentication user and user group objects defined here, they must be used in firewall policies and VPN connections.

5.1 Internal Authentication Server Settings

Select **"Policy Object > Authentication > Auth Setting"** to enter the configuration interface. Here, you can manage SifoWorks U200's authentication server settings including the parameters:

Authentication Port: Port number used for the authentication server

Re-login if Idle: The idle time after which an authenticated user is required to re-login.

Re-login after user login successfully: The system will require the user to re-login when this amount of time has passed since the user was last authenticated.

Disallow re-login if the auth user has login: Select this to not forcefully re-login an authenticated user.

URL to redirect when authentication succeed: Enter the URL to redirect the user to upon successful authentication.

Message to display when user login: Enter the message to display to the user at the login page.

Click **[OK]** to save the configuration.

5.2 Using an External RADIUS Server

SifoWorks also allows administrator to use an external RADIUS server as the authentication server. RADIUS users will need to be authenticated through the external RADIUS server before he is allowed access to the Internet. You should setup your external RADIUS server accordingly.

Select **"Policy Object > Authentication > RADIUS"**. **Enable RADIUS server authentication** and enter the **server IP** address and **port**. Enter the **shared secret** key for the authentication between SifoWorks U200 and the RADIUS server.

Select whether to enable the use of the external RADIUS server via a wireless network.

Click **[OK]** to save the configuration.

Application Example

In this example, we use an external RADIUS server with IP 172.168.30.12 and port number 1812.

Setup your RADIUS server and RADIUS users accordingly.

Select **"Policy Object > Authentication > RADIUS"** and enter the RADIUS server's information accordingly.

Select **"Policy Object > Authentication > Auth Group"**. Add a new authentication user group with the **name** "Radius" representing all authentication users of the RADIUS server. From the **<--- Available Authentication User --->** list, select "(Radius User)" and click **[Add>>]** to add the RADIUS users to the group.

Select **"Policy > Outgoing"** and add a new outgoing policy. In the **Authentication User** field, select the user group "Radius" defined above from the drop down menu. Click **[OK]** to add the outgoing policy.

When a radius user attempts to access the Internet through a web browser, the browser will display an Authentication page, prompting the user for his **user name** and **password**. The user can only access the Internet after he is successfully authenticated by the RADIUS server.

5.3 Using an External POP3 Server

You can also setup a POP3 authentication server as the external authentication server. POP3 users will need to be authenticated through the external POP3 server before he is allowed access to the Internet.

Select **"Policy Object > Authentication > POP3"**. **Enable POP3 server authentication** and enter the **server IP** address or **domain name** and server **port**. Click **[OK]** to save the configuration.

5.4 LDAP Server

SifoWorks also allows administrator to use an external LDAP server as the authentication server. LDAP users will need to be authenticated through the external LDAP server before he is allowed access to the Internet. You should setup your external LDAP server accordingly.

Select **"Policy Object > Authentication > LDAP"**. **Enable LDAP server authentication** and enter the **server IP** address and **port**. Specify the LDAP **name**, **filter**. Enter the **username** and **password** for SifoWorks to authenticate itself with the LDAP server.

Click **[OK]** to save the configuration.

5.5 Authentication Users

You must setup the users who are required to be authenticated by the authentication servers for use in the formulation of firewall policies and VPN connections.

Select **"Policy Object > Authentication > User"** to view the list of authentication user objects already defined in the system. You can modify or delete an object from the list by clicking on the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new authentication user. Enter the authentication **user name** and **password**. Retype the password to **confirm** and click **[OK]** to save the new authentication user.

Note: *If an external RADIUS/POP3/LDAP server is to be used, please add the authentication users directly on your external server.*

When authentication users (internal/remote) attempt to access external websites, they will be automatically redirected to the login page where they can enter their authentication information. Upon successful authentication, their web browser will be automatically redirected to the website they were attempting to access.

5.6 Authentication User Groups

You can also group the authentication users into user groups for easier management. Select **"Policy Object > Authentication > Auth Group"** to view a list of authentication user group objects in the system. You can modify or delete an object from the list by clicking on the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new user group. Enter the group **name** and select the authentication users to add into the group from the **<--- Available Authentication User --->** list. Click **[Add>>]** to move the selected users into the **<--- Selected Authentication User --->** list. Note that "(Radius User)" refer to users defined on the external RADIUS server and "(POP3 User)" refer to users on the external POP3 server.

Click **[OK]** to add the new authentication user group.

Chapter 6

Virtual Service

The IP addresses provided by the ISP are frequently not sufficient for an enterprise's entire network. Therefore an enterprise usually assigns a private IP address to each host and server in its network and uses the network address translation (NAT) function to route the addresses to the actual physical IP address. Private IP addresses are also favored as enterprises do not want to allow direct external accesses to its internal servers for security reasons.

SifoWorks U200 virtual server achieves this requirement. The actual IP address of the system's WAN interface is set as the virtual server's IP address. SifoWorks then translates this public IP address into the private IP address of the server in the LAN network. Note that virtual server objects defined are only effective when added in access policies.

6.1 Mapped IP

Here, you can setup the private LAN IP address to map the public WAN interface IP address to. External users connect to SifoWorks' WAN interface via the public IP address. The system then uses the configuration in this function to map the connection to the LAN's private IP address.

Select **"Policy Object > Virtual Server > Mapped IP"**. From the list, you can edit or delete any mapped IP object by clicking on the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new mapping. Select the WAN interface and enter the public **WAN IP** address accessible by external users. You can click the **[Assist]** link for a list of WAN IP addresses available for the selected interface. Enter the private LAN **IP** address to **map** to and click **[OK]** to save the new mapping.

Application Example

In this example, external users access the SifoWorks' WAN interface (61.11.11.11). We setup the system such that it maps this public IP address to a private LAN IP address (192.168.1.10) from which the FTP and Web services can be accessed. The desired network topology is shown below:

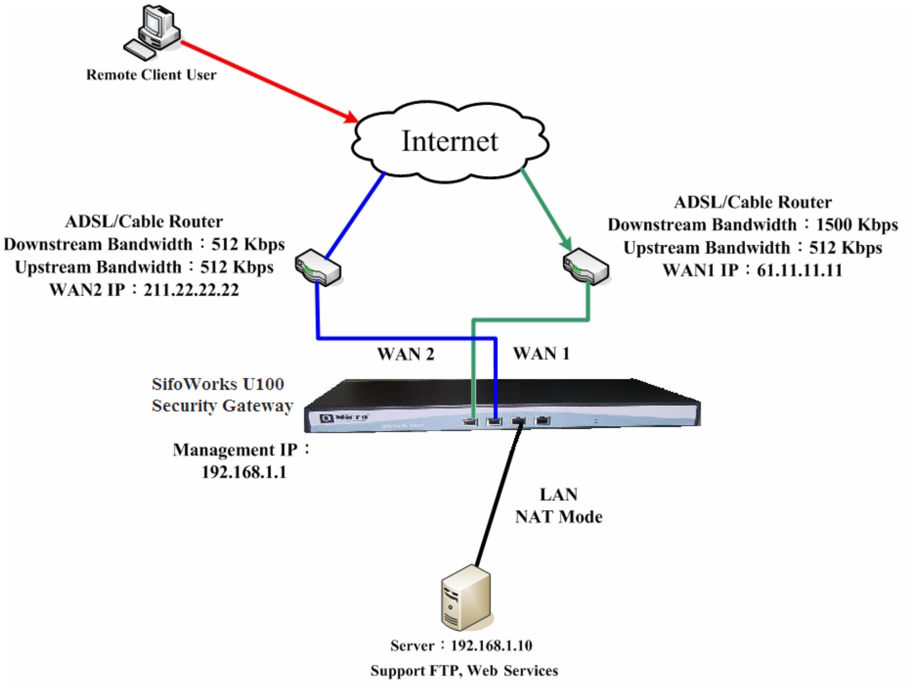


Fig. 6.1

Setup a LAN Address Object

Select **"Policy Object > Address > LAN"** and add a new LAN address object with **name** "Internal_Server", **IP address** "192.168.1.10", **netmask** "255.255.255.255" and the appropriate **MAC address**.

Setup a Virtual Service Mapped IP

Select **"Policy Object > Virtual Service > Mapped IP"**. Click **[New Entry]** to add a new mapping. Enter the **WAN IP** (61.11.11.11) and enter the LAN IP address (192.168.1.10) in the **Map to Virtual IP** field. Click **[OK]** to add the new object.

Services

Select **"Policy Object > Service > Group"** and add a new service group for FTP and Web services ("Main_Service"). Select the services "DNS", "FTP" and all Web based services such as "HTTP" as the group members. Click **[OK]** to add the service group.

Setting up the Policies

Select **"Policy > Incoming"** and add an incoming policy to enable the mapping of incoming traffic from the public WAN IP address to the private LAN IP address. The configuration for the policy is as follows:

Source Address: Outside_Any

Destination Address: Internal_Server (the Virtual service Mapped IP object defined earlier)

Service: Main_Service

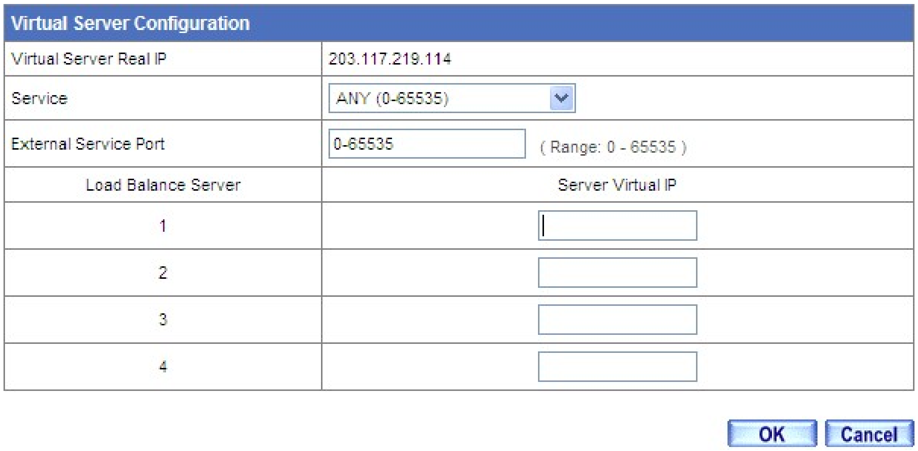
Action: Permit

External users will now be able to access the internal FTP and Web servers on the LAN (192.168.1.100) subnet using the public IP address.

6.2 One-to-Many Virtual Server Mappings

Using the virtual service function, administrators can also setup such that a single public IP address can be mapped to up to four different LAN network servers providing the same service. Using this one-to-many capability, the virtual server can balance the network load between up to four internal servers providing the same service. This reduces the load on a single server and introduces redundancy into the system.

Select **"Policy Object > Virtual Service > Server 1"**. From the top of the list, click **[click here to configure]** to setup the public WAN IP address for this virtual server. Click **[New Entry]** to setup the private server providing the service.



Virtual Server Configuration

Virtual Server Real IP	203.117.219.114
Service	ANY (0-65535)
External Service Port	0-65535 (Range: 0 - 65535)
Load Balance Server	Server Virtual IP
1	
2	
3	
4	

Fig. 6.2

Select the **service** to be provided by this server. Please refer to *chapter 4, section 4.2* on setting up service objects.

Specify the **external service port** number that is made public to the external users. Specify the **IP** addresses of up to 4 internal **load balance servers**.

Click **[OK]** to save this virtual service object.

Tip: *From the **"Policy Object > Virtual Service**" sub menu, you can map up to 4 public WAN IP addresses (by choosing **"server1"** to **"server4"**) to the private IP addresses of the internal servers. Note that each **"server"** menu option can only be configured with 1 public WAN IP address.*

The virtual servers configured here will only be effective if used when specifying the source or destination addresses in policies. Please refer to *Chapter 7* for details on policy management.

Chapter

7

Firewall Policy Management

The firewall policy management system is one of the core functions of the SifoWorks U200 security gateway device. All data packets in the network (other than VPN packets) are matched with the policies defined in the system. A data packet is permitted as long as it matches one policy with the permit action.

You can setup different policies based on the inbound and outbound networks of the traffic. As policy objects are used to configure the policies, you must first add the objects. Please refer to *Chapter 4* and *Chapter 5* for object configuration details.

7.1 Outgoing Policies

Outgoing policies are used when the source IP is in the LAN network while the destination is in the WAN network.

Select **"Policy > Outgoing"** to view the list of outgoing policies defined in the system. You can modify or delete policies from the list by clicking the appropriate buttons in the **configure** column. Click the **[Pause]** button to temporarily pause the use of the corresponding policy.

Action Column

The **Action** column in the list displays the action performed on the data packets matching the policy.

✓	Permit packets on all WAN interfaces
1	Only permit packets on the WAN1 interface
2	Only permit outgoing packets on the WAN2 interface
VPN	Permit only outgoing packets through the selected VPN trunk
✗	Deny packets that matches the policy
P	Deactivate the policy

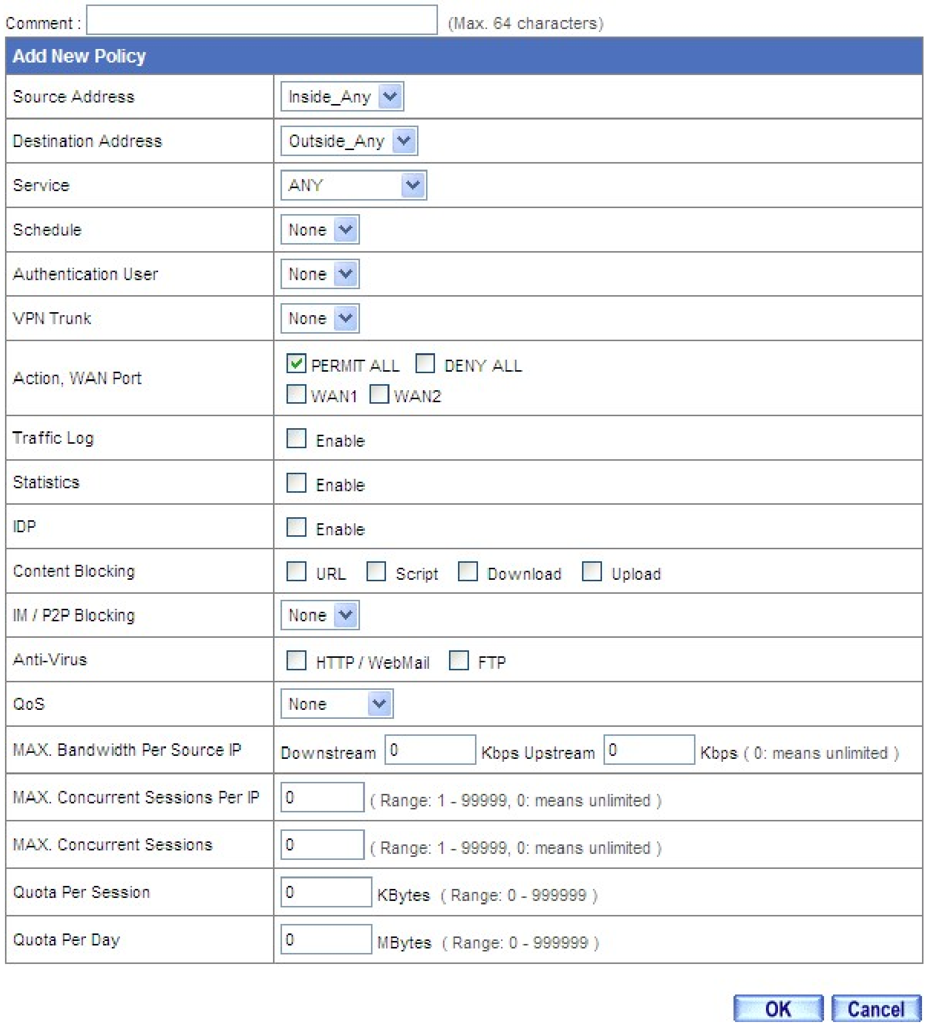
Option Column

Administrators can enable various options such as enable traffic log, content blocking etc. when defining policies. The **Options** column in the list shows the options that are enabled for each policy.

👁	Traffic Log
📊	Statistics
🔑	Authentication User
🕒	Schedule
⛔	Content Blocking
⇄	QoS
IDP	IDP
⛔	IM/P2P Blocking
e	Anti-Virus

7.1.1 Adding Outgoing Policies

Click **[New Entry]** to add a new outgoing policy.



Comment : (Max. 64 characters)

Add New Policy	
Source Address	Inside_Any
Destination Address	Outside_Any
Service	ANY
Schedule	None
Authentication User	None
VPN Trunk	None
Action, WAN Port	☑ PERMIT ALL ☐ DENY ALL ☐ WAN1 ☐ WAN2
Traffic Log	☐ Enable
Statistics	☐ Enable
IDP	☐ Enable
Content Blocking	☐ URL ☐ Script ☐ Download ☐ Upload
IM / P2P Blocking	None
Anti-Virus	☐ HTTP / WebMail ☐ FTP
QoS	None
MAX. Bandwidth Per Source IP	Downstream 0 Kbps Upstream 0 Kbps (0: means unlimited)
MAX. Concurrent Sessions Per IP	0 (Range: 1 - 99999, 0: means unlimited)
MAX. Concurrent Sessions	0 (Range: 1 - 99999, 0: means unlimited)
Quota Per Session	0 KBytes (Range: 0 - 999999)
Quota Per Day	0 MBytes (Range: 0 - 999999)

Fig. 7.1

Select the **source address**, **destination address** and **service** to match to the data packets. Select the **Action, WAN Port** to perform on packets matching this policy.

Select whether to enable the various policy options including

1. **Schedule**: Select the schedule object to specify when the policy will be in effect.

2. **Authentication User**: Select the user object required to be authenticated when attempting to send outgoing packets that matches this policy.

3. **VPN Trunk**: Select the VPN Trunk object that will be monitored using this policy.

4. **Traffic Log**: Select to log the packets that match this policy into the traffic log.

5. **Statistics**: Select to collect the statistics generated by this policy. Administrators can view the statistics in **"Monitor > Statistics > Policy"**. Please refer to *Chapter 12* for more details.

6. **IDP**: Select to enable IDP for packets matching this policy. Please refer to *Chapter 10* for details on configuring IDP.

7. **Content Blocking**: Select which content blocking objects to be blocked by this policy.

8. **IM/P2P Blocking**: Select the IM/P2P blocking object to be activated in this policy.

9. **Anti-Virus**: Select whether to enable anti-virus checks on HTTP/Webmail or FTP packets matching this policy.

10. **QoS**: Enable quality of service by selecting the appropriate QoS object.

Using policies, you can also manage the **maximum concurrent sessions per IP** and **maximum upstream** and **downstream bandwidth per source IP** for the addresses matching this policy. Also specify the total **maximum concurrent sessions** allowed.

Enter the **quota per session** and **quota per day** to manage the bandwidth used through the policy.

Enter a brief **comment** for this policy if desired and click **[OK]** to add the new outgoing policy.

7.1.2 Adjusting Policies' Positions

The SifoWorks system matches each packet with the policies in the list in a top down fashion. The system will check from the first to the last policy in the list until a match is found. Therefore, the position of the policies is of utmost importance to the operation of the firewall.

In the **move** column, select the position of the policy from the drop down list to adjust the policies' priority.

7.2 Incoming Policies

Incoming policies are used when the source IP is in the WAN network while the destination is in the LAN network.

Select **"Policy > Incoming"** to view the list of incoming policies defined in the system. You can modify or delete policies from the list by clicking the appropriate buttons in the **configure** column. Click the **[Pause]** button to temporarily pause the use of the corresponding policy.

Action Column

The **Action** column in the list displays the action performed on the data packets matching the policy.

✓	✗
Permit packets on all WAN interfaces	Deny packets that matches the policy

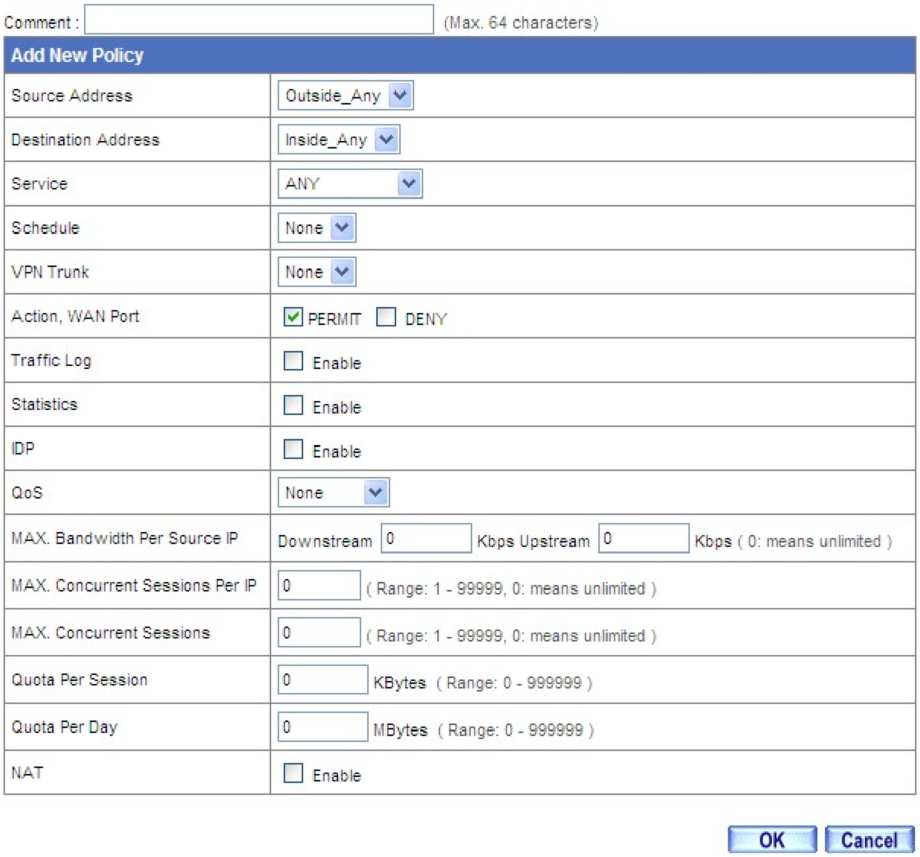
Option Column

Administrators can enable various options such as enable traffic log, content blocking etc. when defining policies. The **Options** column in the list shows the options that are enabled for each policy.

👁	Traffic Log
📊	Statistics
🕒	Schedule
NAT	Network Address Translation
⟲	QoS
IDP	IDP

7.2.1 Adding Incoming Policies

Click **[New Entry]** to add a new incoming policy.



Comment : ______ (Max. 64 characters)

Add New Policy	
Source Address	Outside_Any
Destination Address	Inside_Any
Service	ANY
Schedule	None
VPN Trunk	None
Action, WAN Port	☑ PERMIT ☐ DENY
Traffic Log	☐ Enable
Statistics	☐ Enable
IDP	☐ Enable
QoS	None
MAX. Bandwidth Per Source IP	Downstream 0 Kbps Upstream 0 Kbps (0: means unlimited)
MAX. Concurrent Sessions Per IP	0 (Range: 1 - 99999, 0: means unlimited)
MAX. Concurrent Sessions	0 (Range: 1 - 99999, 0: means unlimited)
Quota Per Session	0 KBytes (Range: 0 - 999999)
Quota Per Day	0 MBytes (Range: 0 - 999999)
NAT	☐ Enable

Fig. 7.2

Select the **source address**, **destination address** and **service** to match to the data packets. Select the **Action** to perform on packets matching this policy.

Select whether to enable the various policy options including

1. **Schedule**: Select the schedule object to specify when the policy will be in effect.

2. **VPN Trunk**: Select the VPN Trunk object that will be monitored using this policy.

3. **Traffic Log**: Select to log the packets that match this policy into the traffic log.

4. **Statistics**: Select to collect the statistics generated by this policy. Administrators can view the statistics in **“Monitor >**

Statistics > Policy". Please refer to *Chapter 12* for more details.

5. **IDP**: Select to enable IDP for packets matching this policy. Please refer to *Chapter 10* for details on configuring IDP.

6. **QoS**: Enable quality of service by selecting the appropriate QoS object.

7. **NAT**: Select to enable network address translation

Using policies, you can also manage the **maximum concurrent sessions per IP** and **maximum upstream** and **downstream bandwidth per source IP** for the addresses matching this policy. Also specify the total **maximum concurrent sessions** allowed.

Enter the **quota per session** and **quota per day** to manage the bandwidth used through the policy.

Enter a brief **comment** for this policy if desired and click **[OK]** to add the new incoming policy.

7.2.2 Adjusting Policies' Positions

The SifoWorks system matches each packet with the policies in the list in a top down fashion. The system will check from the first to the last policy in the list until a match is found. Therefore, the position of the policies is of utmost importance to the operation of the firewall.

In the **move** column, select the position of the policy from the drop down list to adjust the policies' priority.

7.3 WAN to DMZ Policies

WAN to DMZ policies are used when the source IP is in the WAN network while the destination is in DMZ. This is used when external users access configured virtual service, mapped IP services etc.

Select **"Policy > WAN to DMZ"** to view the list of WAN to DMZ policies defined in the system. You can modify or delete policies from the list by clicking the appropriate buttons in the **configure** column. Click the **[Pause]** button to temporarily pause the use of the corresponding policy.

The configuration procedure for WAN to DMZ policies is identical to the configuration for incoming policies. Please refer to *section 7.2* for configuration details.

7.4 LAN to DMZ Policies

LAN to DMZ policies are used when the source IP is in LAN while the destination is in DMZ.

Select **"Policy > LAN to DMZ"** to view the list of LAN to DMZ policies defined in the system. You can modify or delete policies from the list by clicking the appropriate buttons in the **configure** column. Click the **[Pause]** button to temporarily pause the use of the corresponding policy.

Action Column

The **Action** column in the list displays the action performed on the data packets matching the policy.

✓	✗
Permit packets on all network interfaces	Deny packets that matches the policy

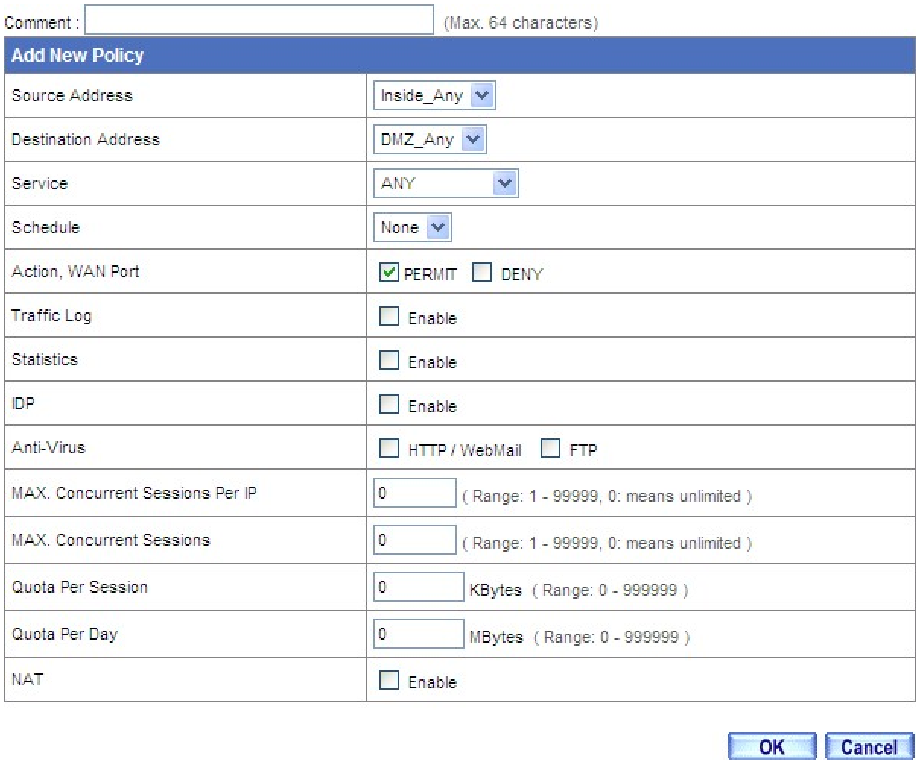
Option Column

Administrators can enable various options such as enable traffic log, content blocking etc. when defining policies. The **Options** column in the list shows the options that are enabled for each policy.

👁	Traffic Log
📊	Statistics
🕒	Schedule
NAT	Network Address Translation
IDP	IDP
e	Anti-Virus

7.4.1 Adding LAN to DMZ Policies

Click **[New Entry]** to add a new LAN to DMZ policy.



Comment : (Max. 64 characters)

Add New Policy	
Source Address	Inside_Any
Destination Address	DMZ_Any
Service	ANY
Schedule	None
Action, WAN Port	☑ PERMIT □ DENY
Traffic Log	□ Enable
Statistics	□ Enable
IDP	□ Enable
Anti-Virus	□ HTTP / WebMail □ FTP
MAX. Concurrent Sessions Per IP	0 (Range: 1 - 99999, 0: means unlimited)
MAX. Concurrent Sessions	0 (Range: 1 - 99999, 0: means unlimited)
Quota Per Session	0 KBytes (Range: 0 - 999999)
Quota Per Day	0 MBytes (Range: 0 - 999999)
NAT	□ Enable

Fig. 7.3

Select the **source address**, **destination address** and **service** to match to the data packets. Select the **Action** to perform on packets matching this policy.

Select whether to enable the various policy options including

1. **Schedule**: Select the schedule object to specify when the policy will be in effect.

2. **Traffic Log**: Select to log the packets that match this policy into the traffic log.

3. **Statistics**: Select to collect the statistics generated by this policy. Administrators can view the statistics in **"Monitor > Statistics > Policy"**. Please refer to *Chapter 12* for more details.

4. **IDP**: Select to enable IDP for packets matching this policy. Please refer to *Chapter 10* for details on configuring IDP.

5. **Anti-Virus**: Select whether to enable anti-virus checks on HTTP/Webmail or FTP packets matching this policy.

6. **NAT**: Select to enable network address translation

Using policies, you can also manage the **maximum concurrent sessions per IP** for the addresses matching this policy. Also specify the total **maximum concurrent sessions** allowed.

Enter the **quota per session** and **quota per day** to manage the bandwidth used through the policy.

Enter a brief **comment** for this policy if desired and click **[OK]** to add the new incoming policy.

7.4.2 Adjusting Policies' Positions

The SifoWorks system matches each packet with the policies in the list in a top down fashion. The system will check from the first to the last policy in the list until a match is found. Therefore, the position of the policies is of utmost importance to the operation of the firewall.

In the **move** column, select the position of the policy from the drop down list to adjust the policies' priority.

7.5 DMZ to WAN Policies

DMZ to WAN policies are used when the source IP is in the DMZ network while the destination is in WAN.

Select **"Policy > DMZ to WAN"** to view the list of DMZ to WAN policies defined in the system. You can modify or delete policies from the list by clicking the appropriate buttons in the **configure** column. Click the **[Pause]** button to temporarily pause the use of the corresponding policy.

The configuration procedure for DMZ to WAN policies is identical to the configuration for outgoing policies. Please refer to *section 7.1* for configuration details.

7.6 DMZ to LAN Policies

DMZ to LAN policies are used when the source IP is in the DMZ network while the destination is in LAN.

Select **"Policy > DMZ to LAN"** to view the list of DMZ to LAN policies defined in the system. You can modify or delete policies from the list by clicking the appropriate buttons in the **configure** column. Click the **[Pause]** button to temporarily pause the use of the corresponding policy.

The configuration procedure for DMZ to LAN policies is identical to the configuration for LAN to DMZ policies. Please refer to *section 7.4* for configuration details.

7.7 Application Examples

Here we list a number of examples for the application of firewall policies.

7.7.1 Example 1 – Monitoring the Activities of Internal Users

Here we setup a policy to monitor the network activities of internal users. Select **"Policy > Outgoing"** and click **[New Entry]** to add a new outgoing policy. Configure the policy as follows:

Source Address: Inside_Any

Destination Address: Outside_Any

Action: Permit All

Select to enable **Traffic Log** and **Statistics**.

Click **[OK]** to add the new policy.

Results of Configuration

The system will now record all outgoing activities from LAN users. Administrators can view this log by selecting **"Monitor > Log > Traffic"** from the menu.

Select **"Monitor > Statistics > Policy"** to view the statistics generated by the policy.

7.7.2 Example 2 – Restrict Access to Specific WAN IP; Access to Any Other IP Addresses Require User Authentication

In this example, we setup the system such that LAN users cannot access the WAN IP “165.13.32.21/32” and “203.123.24.3/32”. LAN users “User1”, “User2” and “User3” must be authenticated before they can access all other addresses on the Internet.

Setup Address Object

Select **“Policy Object > Address > WAN”** to add new WAN address objects. Add two WAN address objects with the above **IP address** and **netmask**.

Select **“Policy Object > WAN Group”** to add a new WAN address group object “Restrict_WAN_Group”. Select the two WAN address objects added previously and add them into the group.

Setup Authentication User

Select **“Policy Object > Authentication > Auth User”** and add the 3 authentication users, User1, User2 and User3.

Select **“Policy Object > Authentication > Auth Group”** to add a new authentication user group with the name “Restrict_Auth_Group”. Select the 3 authentication users added above as the members of this group.

Select **“Policy Object > Authentication > Setting”** to setup the system authentication server as appropriate.

Define the 1st Outgoing Policy – Restrict WAN IP Access

Select **“Policy > Outgoing”** and add a new outgoing policy. Configure the policy as follows:

Source Address: Inside_Any

Destination Address: Restrict_WAN_Group (the WAN address group object setup above)

Action: Deny All

Click **[OK]** to save the new policy.

Define the 2nd Outgoing Policy – Authentication

Select **“Policy > Outgoing”** and add a new outgoing policy. Configure the policy as follows:

Source Address: Inside_Any

Destination Address: Outside_Any

Action: Permit All

Authentication User: "Restrict_Auth_Group" (the authentication group object setup above)

Click **[OK]** to add the new policy.

Results of the Configuration

2 new policies will be added in the policy list. The system will check packets based on the priority in which the policy was added. Hence, each packet will first be checked if its destination address is either "165.13.32.21/32" or "203.123.24.3/32". The packet will be discarded if the address matches.

If not, the system will match the packet against the next policy in the list. If the packet comes from User1, User2 or User3, the 2nd policy will be matched successfully and the system will prompt the user for authentication before granting access.

7.7.3 Example 3 – Setup a Mail Server in DMZ Accessible by LAN and WAN Users

In this example, we setup the system to allow both LAN and WAN users to a Mail Server located in DMZ. The address of the mail server is 60.12.11.11. Users must be able to both send and receive mail from the mail server.

Setup Mail Server Address Object

Select **"Policy Object > Address > DMZ"** and add a new DMZ address object ("Mail_Server") with the mail server's IP address 60.12.11.11/32.

Setup Service Object

Select **"Policy Object > Service > Group"** and add new service group object with the **name** "E-Mail". Select the pre-defined services "DNS", "POP3" and "SMTP" as the group members.

Setup Policies for WAN Users

Setup a policy to allow WAN users to send mail to the mail server. Select **"Policy > WAN to DMZ"** and add a new policy under this category with the following configuration:

Source Address: Outside_Any

Destination Address: Mail_Server

Service: E-Mail

Action: Permit

Click **[OK]** to save the new policy. Next, setup a policy to allow WAN users to receive mail from the mail server. Select **“Policy > DMZ to WAN”** and add a new policy with the following configuration:

Source Address: Mail_Server

Destination Address: Outside_Any

Service: E-Mail

Action: Permit

Click **[OK]** to save the new policy.

Setup Policies for LAN Users

Setup a policy to allow LAN users to send mail to the mail server. Select **“Policy > LAN to DMZ”** policy and add a new policy with the following configuration:

Source Address: Inside_Any

Destination Address: Mail_Server

Service: E-Mail

Action: Permit

Click **[OK]** to save the new policy. Next, setup a policy to allow LAN users to receive mail from the mail server. Select **“Policy > DMZ to LAN”** and add a new policy with the following configuration:

Source Address: Mail_Server

Destination Address: Inside_Any

Service: E-Mail

Action: Permit

Click **[OK]** to save the new policy.

Results of the Configuration

Both LAN and WAN users can now send and receive mail from the internal DMZ mail server.

Chapter

8

IPSec VPN

On the SifoWorks U200 system, you can setup an IPSec based virtual private network (VPN) to provide users with secured remote access into the LAN.

As external users need to be authenticated before they are allowed remote access into the LAN, you must have configured the authentication server on the SifoWorks system. Please refer to *Chapter 5* for details on configuring the authentication servers.

8.1 VPN Wizard

SifoWorks provides a VPN wizard to simplify the setting up of a IPSec VPN on the system. Select **"Policy Object > VPN > Wizard"** to begin using the wizard.

Step 1: Select whether you want to setup an IPSec autokey, PPTP server or a PPTP client and click **[Next>]** to move to the next step.

Step 2: Configure the VPN settings accordingly. The configuration for this step differs depending on the selection in **step 1**. For IPSec autokey configuration details please refer to *section 8.2*. For PPTP server configuration details, please refer to *section 8.3*. For PPTP client configuration details, please refer to *section 8.4*.

Click **[Next>]** to move to the next step or click **[<Back]** to return to the previous step.

Step 3: Create the VPN trunk(s) and click **[Next>]** to move to the next step. Please refer to *section 8.5* for details on VPN trunk configuration.

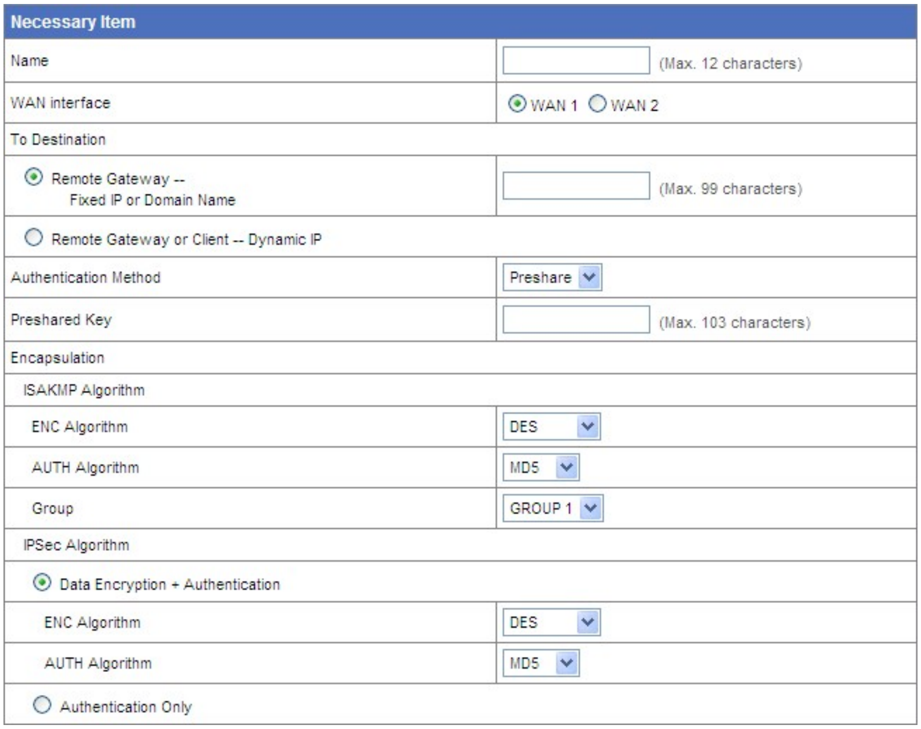
Step 4: Select the VPN trunks to be used for remote connections over this VPN and click **[Finish]** to complete the VPN wizard. The system will build a VPN connection based on the configurations made in this wizard.

8.2 IPSec AutoKey

To create a VPN connection, the system administrator must first setup IPSec Autokey. The autokey IKE (Internet Key Exchange) protocol provides a method of negotiating the keys to setup a secured VPN tunnel between 2 security gateways.

Select **“Policy Object > VPN > IPSec Autokey”** to view the list of IPSec autokeys in the system. You can modify or edit an IPSec object by clicking the appropriate buttons in the **configure** column. Click **[Connect]** to establish a VPN connection with the destination gateway. Click **[Disconnect]** to disconnect an established VPN connection.

Click **[New Entry]** to add a new autokey. The first half of the configuration interface consists of essential fields.



Necessary Item	
Name	(Max. 12 characters)
WAN interface	● WAN 1 ○ WAN 2
To Destination	
● Remote Gateway -- Fixed IP or Domain Name	(Max. 99 characters)
○ Remote Gateway or Client -- Dynamic IP	
Authentication Method	Preshare
Preshared Key	(Max. 103 characters)
Encapsulation	
ISAKMP Algorithm	
ENC Algorithm	DES
AUTH Algorithm	MD5
Group	GROUP 1
IPSec Algorithm	
● Data Encryption + Authentication	
ENC Algorithm	DES
AUTH Algorithm	MD5
○ Authentication Only	

Fig. 8.1

Setup the parameters as follows:

Name: Name of this autokey

WAN Interface: The WAN interface used for VPN traffic

To Destination: IP address of the destination gateway. You can either select whether the gateway has a **fixed IP or domain name** or a **dynamic IP**.

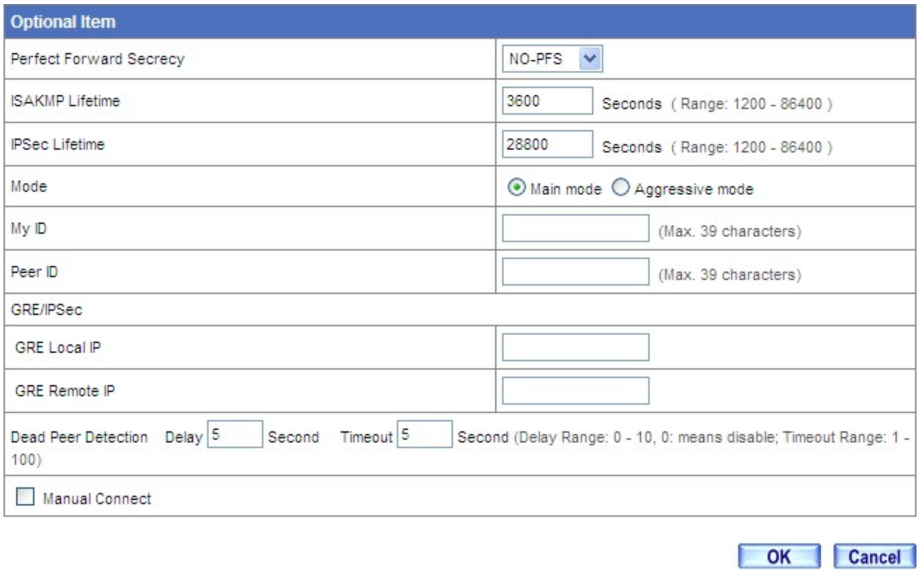
Authentication Method: Select the authentication method between the two gateways

Preshared Key: Preshared key between SifoWorks and the remote gateway. The preshared key configured on both gateways must be the same for the VPN connection to be established

Encapsulation / ISAKMP: Select the algorithms used to encapsulate the data transferred during the setup of security associations (SA) between the two gateways. Note that the **Group** selected must be identical for both gateways

Encapsulation / IPSec Algorithm: Select the algorithms used to encapsulate the data transferred during the IPSec tunnel setup. You can select whether to encapsulate both authentication and normal data traffic or only authentication data.

You can continue to configure the optional parameters of the autokey as follows:



Optional Item	
Perfect Forward Secrecy	NO-PFS
ISAKMP Lifetime	3600 Seconds (Range: 1200 - 86400)
IPSec Lifetime	28800 Seconds (Range: 1200 - 86400)
Mode	● Main mode ○ Aggressive mode
My ID	(Max. 39 characters)
Peer ID	(Max. 39 characters)
GRE/IPSec	
GRE Local IP	
GRE Remote IP	
Dead Peer Detection Delay 5 Second Timeout 5 Second (Delay Range: 0 - 10, 0: means disable; Timeout Range: 1 - 100)	
□ Manual Connect	

Fig. 8.2

Perfect Forward Secrecy: Select PFS for encryption

ISAKMP Lifetime: Specify the security association lifetime

IPSec Lifetime: Specify the IPSec lifetime

Mode: Select whether to use main or aggressive mode to negotiate SA

My ID: Identifying name for the local system

Peer ID: Identifying name for the remote peer

GRE/IPSec: Enter the **local** and **remote IP** addresses for generic routing encapsulation (GRE)

Manual Connect: Select to enable manual VPN connection

Dead Peer Detection: Specify the **delay** and **timeout** of sending packets used to detect dead peer connection.

Click **[OK]** to save the IPSec autokey.

Application Example

Here we setup a IPSec VPN connection with company B with WAN IP address 211.22.22.22. The local SifoWorks' WAN1 IP address is 61.11.11.11. LAN IP address is 192.168.10.X

On SifoWork's configuration interface, select **"Policy Object > VPN > IPSec Autokey"** and click **[New Entry]** to add a new IPSec connection. Setup the parameters according to the following:

Name: VPN_A

WAN Interface: WAN1

To Destination: Select Remote Gateway or Client -- Fixed IP and enter 211.22.22.22 as the IP address

Authentication Method: Preshare

Preshared Key: 1234567

IPSec Lifetime: 28800 seconds

Mode: Main mode

Select the appropriate **ISAKMP encapsulation algorithms** and appropriate **IPSec encapsulation algorithms**. Configure the remaining optional parameters as necessary. Click **[OK]** to save the new IPSec configuration. Ensure that company B has setup an IPSec connection accordingly. Note that the **preshared key** and **IPSec lifetime** setup in company B must be the same as the local setting.

The network topology of the above configuration is shown in the figure below:

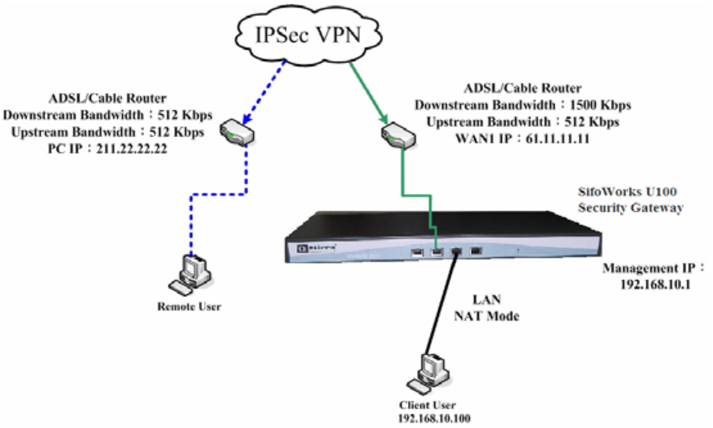
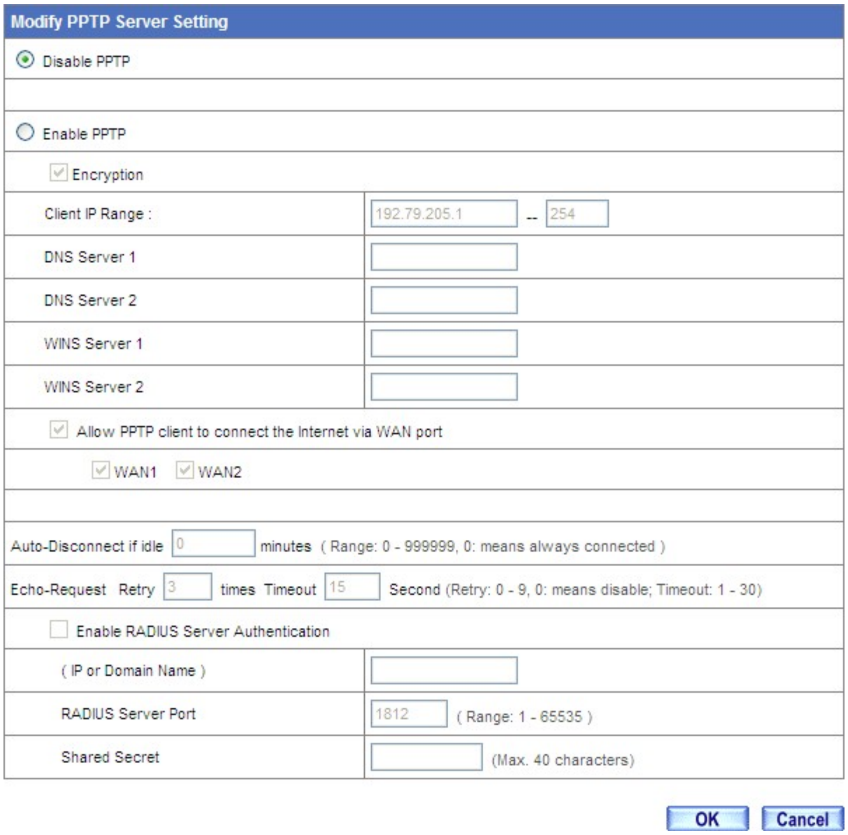


Fig. 8.3

8.3 PPTP Server

Select **"Policy Object > VPN > PPTP Server"** to configure SifoWorks as the PPTP server.

From the top of the list, click **[Modify]** to edit the basic PPTP server settings. The configuration interface is shown in the figure below:



Modify PPTP Server Setting

● Disable PPTP

○ Enable PPTP

☑ Encryption

Client IP Range :	192.79.205.1 -- 254
DNS Server 1	
DNS Server 2	
WINS Server 1	
WINS Server 2	

☑ Allow PPTP client to connect the Internet via WAN port

☑ WAN1 ☑ WAN2

Auto-Disconnect if idle 0 minutes (Range: 0 - 999999, 0: means always connected)

Echo-Request Retry 3 times Timeout 15 Second (Retry: 0 - 9, 0: means disable; Timeout: 1 - 30)

□ Enable RADIUS Server Authentication

(IP or Domain Name)	
RADIUS Server Port	1812 (Range: 1 - 65535)
Shared Secret	(Max. 40 characters)

Fig. 8.4

Select to **Enable PPTP** server. Select whether to use **encryption** for this server. Enter the **Client IP Range** and the IP addresses of the primary and secondary **DNS** and **WINS** servers. Check to **allow PPTP clients to connect to the Internet** and select the WAN interface through which the PPTP clients connect to.

Specify the **idle** time after which the user is automatically disconnected. Also specify the number of **retry** and **timeout** for each echo-request packet sent.

Select to **enable RADIUS server authentication** for this PPTP server and specify the **IP** address or **domain name** and **port** of the RADIUS server. Enter the **shared secret**.

Click **[OK]** to save the PPTP server configuration.

Tip: *You can also enable or disable the **PPTP server** from the top of the list by clicking on the **[enable]** or **[disable]** link.*

Return to the PPTP server list (**"Policy Object > VPN > PPTP Server"**) to view the VPN clients that connect to this PPTP server. You can modify or delete any PPTP server from the list by clicking the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new client that can connect to this PPTP server. Enter the remote client's **user name** and **password**. Select whether to assign the client an IP address from the **client IP range** or specify a **fixed IP** for the client. Select whether to enable the client can be manually disconnected.

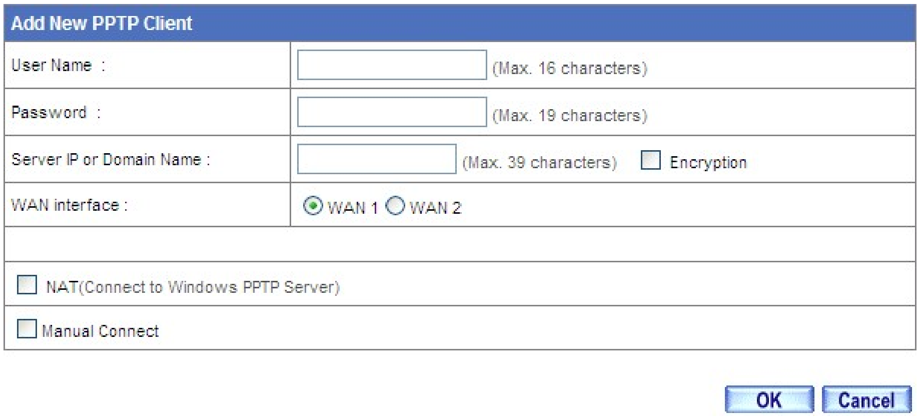
Click **[OK]** to add the new user.

8.4 PPTP Client

Select **"Policy Object > VPN > PPTP Client"**. Here, you setup the PPTP clients that connect to a remote PPTP server. From the list displayed, you can modify or remove a PPTP client by clicking on the appropriate buttons in the **configure** column.

The **uptime** column displays the connection time between the PPTP client and the server. Click **[Connect]** to connect the client to the PPTP server. Click **[Disconnect]** to disconnect from the server.

Click **[New Entry]** to add a new PPTP client.



Add New PPTP Client

User Name :	(Max. 16 characters)
Password :	(Max. 19 characters)
Server IP or Domain Name :	(Max. 39 characters) □ Encryption
WAN interface :	● WAN 1 ○ WAN 2
□ NAT(Connect to Windows PPTP Server)	
□ Manual Connect	

Fig. 8.5

User Name: Client's user name

Password: Client's password

Server IP or Domain Name: IP address or domain name of the PPTP server to connect to. Select whether to **encrypt** the address when establishing connection with the server

WAN Interface: Select which WAN interface the client uses to communicate with the remote server

NAT: Select to enable NAT

Manual Connect: Select to enable manual connection of the client to the remote server

Click **[OK]** to save the new PPTP client.

Application Example

In this example, we want to setup a PPTP VPN connection between two SifoWorks U200 devices. SifoWorks_A acts as the PPTP server with WAN IP 61.11.11.11 and LAN IP 192.168.10.X. SifoWorks_B acts as the PPTP client with WAN IP 211.22.22.22 and LAN IP 192.168.20.X. The topology of the network is shown in the figure below:

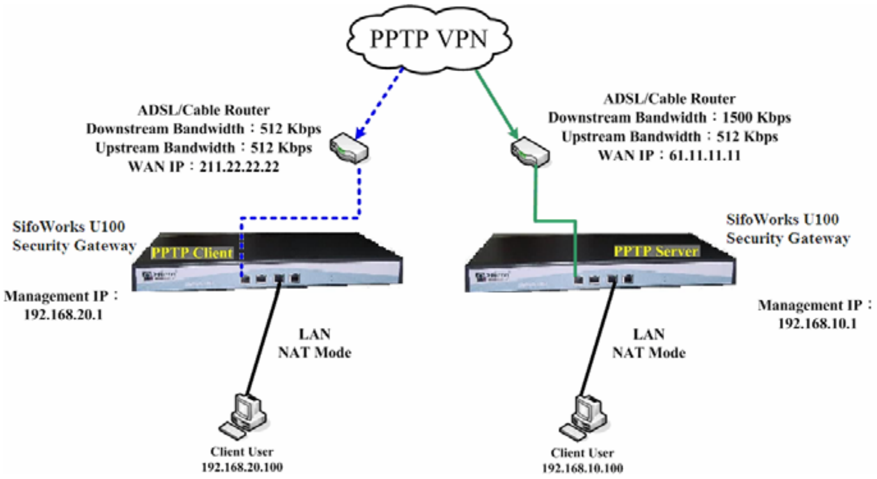


Fig. 8.6

SifoWorks_A

Select **"Policy Object > VPN > PPTP Server"** and click **[Modify]** to modify the server settings. Select to **enable PPTP**. Select **encryption** and enter the **client IP range** as 192.44.75.1-254. Click **[OK]** to save the configuration.

Back in the PPTP server list, you now have to add a user that can connect to the configured server. Click **[New Entry]**. Enter "PPTP_B_Connection" in **Username** and "123456" in **password**. Select to assign client IP by "IP Range".

SifoWorks_B

Select **"Policy Object > VPN > PPTP Client"** and click **[New Entry]**. Enter "PPTP_B_Connection" in **username** and "123456" in **password**. Enter the **server IP** address as 61.11.11.11 (SifoWorks_A WAN IP) and select **encryption**. For **WAN interface**, select "WAN1". Click **[OK]** to save the new PPTP client.

Result of Configuration

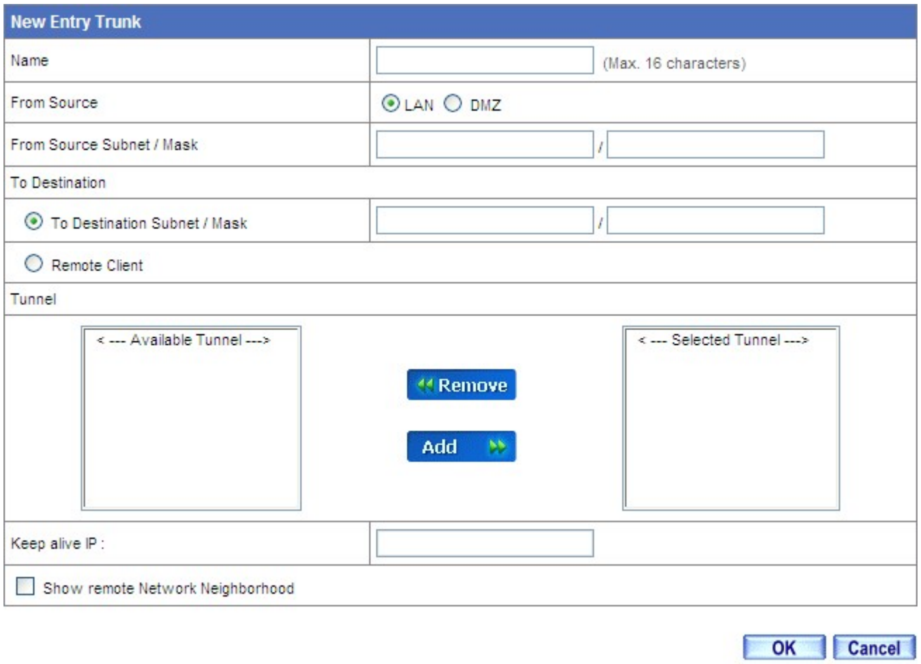
SifoWorks_B can now establish a PPTP VPN connection with the server at SifoWorks_A.

8.5 Trunk

Through the use of IPSec VPN trunks, you can group VPN tunnels into VPN trunks and define which VPN traffic should be send by which trunk. VPN trunks can also be used to forward traffic from one VPN trunk to another, allowing the system to balance the VPN load and provide reliability of VPN tunnel services.

Select **"Policy Object > VPN > Trunk"** to view the list of VPN trunks. You can modify or remove any VPN trunk object from the list by clicking on the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new VPN trunk.



New Entry Trunk

Name	(Max. 16 characters)
From Source	● LAN ○ DMZ
From Source Subnet / Mask	/
To Destination	
● To Destination Subnet / Mask	/
○ Remote Client	
Tunnel	
< --- Available Tunnel --->	< --- Selected Tunnel --->
Keep alive IP :	
□ Show remote Network Neighborhood	

Fig. 8.7

Enter the **name** of the VPN trunk. Select the **source** interface (LAN or DMZ) and enter the **source subnet** and netmask. For the trunk destination, you can select to either enter a **destination subnet** and **netmask** or a **remote client** as the trunk's destination.

From the **<--- Available Tunnel --->** list, select the VPN tunnels and click **[Add>>]** to add the tunnels as members of this trunk. Click the tunnels from the **<--- Selected Tunnel --->** and click **[<<Remove]** to delete it from the trunk.

Enter the **keep alive IP** address. This address is used to check the status of the tunnel and should be an existing server's IP address in the remote LAN. Select whether to **show remote network neighborhood**. Click **[OK]** to save the new VPN trunk.

Note: *You must setup policies using the added VPN trunks before they take effect.*

Chapter

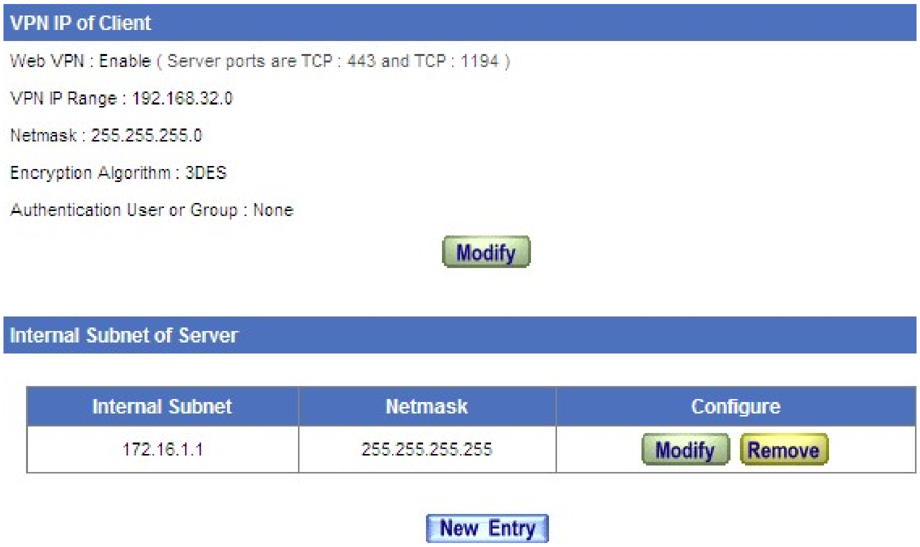
9

SSL VPN

With the advancements in technology, employees need for a mobile office is on the rise. Hence, many enterprises now require an ability to provide for convenient remote access to its mobile workers without compromising the security of its internal network. SifoWorks U200's SSL VPN function meets this demand.

An SSL VPN works through a standard web browser and uses the SSL protocol to encrypt data transmission through the Internet. Remote users can access the enterprise's remote network without installing any software or hardware, simplifying remote accesses for both end users and administrators.

Select **"Web VPN/SSL VPN > Setting"** to configure the basic settings of the SSL VPN.



VPN IP of Client

Web VPN : Enable (Server ports are TCP : 443 and TCP : 1194)

VPN IP Range : 192.168.32.0

Netmask : 255.255.255.0

Encryption Algorithm : 3DES

Authentication User or Group : None

Internal Subnet of Server

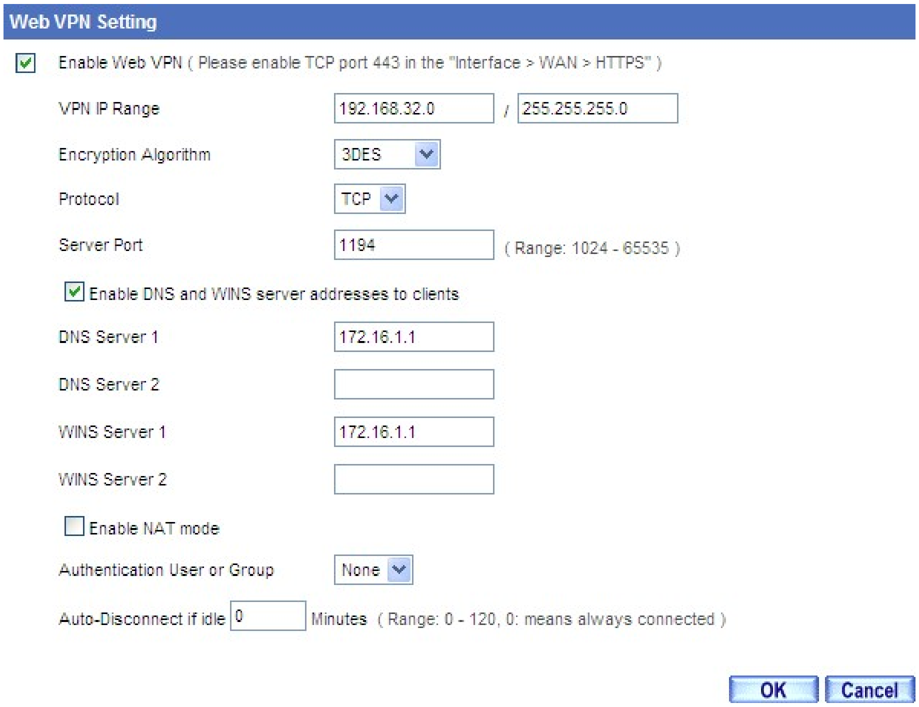
Internal Subnet	Netmask	Configure
172.16.1.1	255.255.255.255	Modify Remove

Fig. 9.1

VPN IP of Client

The top half of the interface displays the current configured SSL VPN's basic information including the **IP range, netmask** and **encryption algorithm** etc,

Click **[Modify]** to modify the VPN settings.



Web VPN Setting

☑ Enable Web VPN (Please enable TCP port 443 in the "Interface > WAN > HTTPS")

VPN IP Range	192.168.32.0 / 255.255.255.0	
Encryption Algorithm	3DES	
Protocol	TCP	
Server Port	1194	(Range: 1024 - 65535)

☑ Enable DNS and WINS server addresses to clients

DNS Server 1	172.16.1.1
DNS Server 2	
WINS Server 1	172.16.1.1
WINS Server 2	

□ Enable NAT mode

Authentication User or Group: None

Auto-Disconnect if idle: 0 Minutes (Range: 0 - 120, 0: means always connected)

Fig. 9.2

Select to **enable web VPN** and specify the subnet remote VPN users belong to via the **VPN IP range**/netmask. Select the **encryption algorithm** and the **protocol** to be used between the server and the remote users. Specify the **server port**.

You can **enable DNS and WINS server addresses** to be used by the remote clients. If enabled, please specify the IP addresses of the primary and/or secondary DNS and WINS servers.

Select whether the remote users can access internal resources through **NAT mode** and choose the **authentication user** or user **group** that can remotely access the network via this SSL VPN server. Please refer to *section 5.5* and *section 5.6* for details on adding authentication users and user groups.

Enter the **idle** timeout duration for remote connections. Click **[OK]** to save the settings.

Note that you must enable **HTTPS** and enable **TCP port** 443 in "**Interface > WAN**". Please refer to *section 3.1.2* for details.

Note: *Remote users must enter the WAN interface IP address/sslvpn (such as https://192.168.1.2/sslvpn) in his web browser to access the login page for remote access via the configured SSL VPN.*

Internal Subnet of Server

The bottom half of the interface displays a list of internal subnets that can be accessed by authenticated users over the configured SSL VPN. Users will be able to access the servers located within these subnets after they are successfully authenticated and connected via the SSL VPN.

You can modify or remove a subnet from the list by clicking on the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new subnet into the list. Enter the **subnet** address and corresponding **netmask**. Click **[OK]** to add this subnet.

9.1 SSL VPN Connection Status

Select **“Web VPN/SSL VPN > Status”** to view the current user connection status of the configured SSL VPN tunnel. The list includes the connected **username**, **real IP** address and the **VPN IP** address assigned by the SSL VPN. The **uptime** of the user is also displayed.

Click **[Disconnect]** from the **configure** column to disconnect the user.

Chapter

10

Mail Security

SifoWorks U200 system incorporates a function that checks for and maintains the security of sent and received emails in the network. Emails will go through anti-spam and anti-virus checks before going through the mail relay function to forward the mails to the appropriate mail servers.

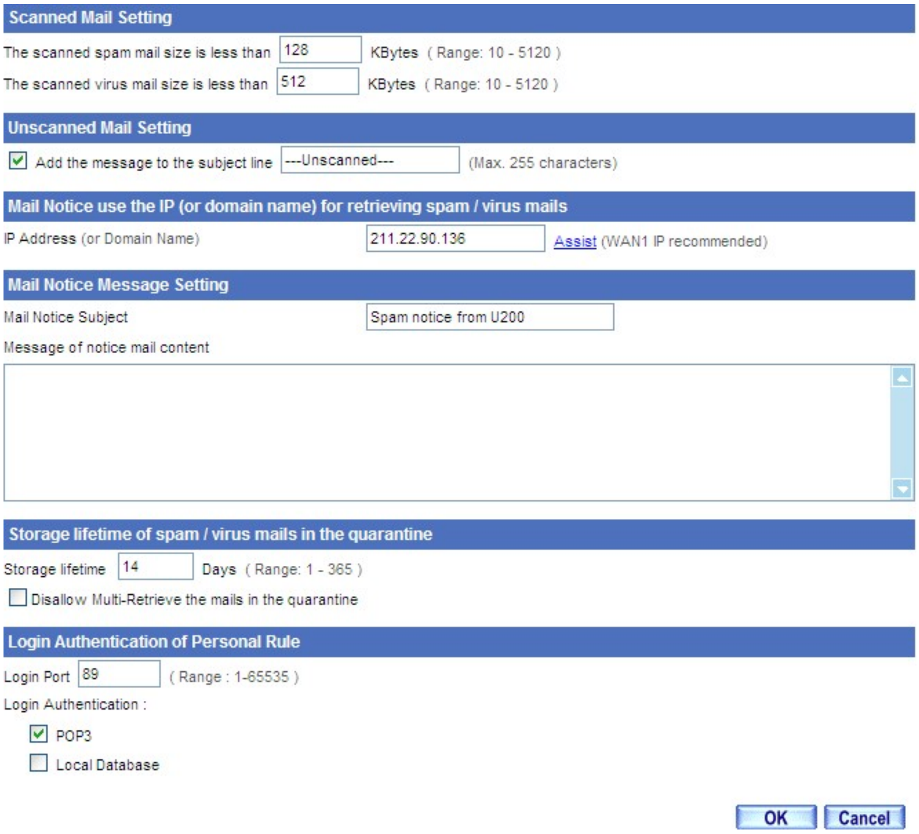
10.1 Configuring the Basic Settings

Select **"Mail Security > Configure > Setting"** to setup the basic configuration of the mail security function. Specify the maximum size of mails that should be scanned for spam and viruses. You can also select whether to **add a message to the subject line** for mails that are not scanned. Enter the message to be inserted at the front of the subject line in the textbox provided.

You can also setup the system to send a mail notice to notify the recipient that a spam/virus mail has been detected. Enter the **mail notice subject** and the **message** to be included in the notification mail. Specify the **IP address** or **domain name** of the mail server to retrieve spam/virus mails from.

Define a **storage lifetime** of spam/virus stored in quarantine. Quarantined mails will be automatically deleted when it exceeds this storage lifetime. Select whether to **disallow multiple retrieve** of quarantined mails.

To authenticate mail account users, setup the authentication **login port** number and select a **login authentication** method.



Scanned Mail Setting

The scanned spam mail size is less than 128 KBytes (Range: 10 - 5120)

The scanned virus mail size is less than 512 KBytes (Range: 10 - 5120)

Unscanned Mail Setting

☑ Add the message to the subject line ---Unscanned--- (Max. 255 characters)

Mail Notice use the IP (or domain name) for retrieving spam / virus mails

IP Address (or Domain Name) 211.22.90.136 Assist (WAN1 IP recommended)

Mail Notice Message Setting

Mail Notice Subject Spam notice from U200

Message of notice mail content

Storage lifetime of spam / virus mails in the quarantine

Storage lifetime 14 Days (Range: 1 - 365)

□ Disallow Multi-Retrieve the mails in the quarantine

Login Authentication of Personal Rule

Login Port 89 (Range : 1-65535)

Login Authentication :

☑ POP3

□ Local Database

Fig. 10.1

Click **[OK]** to save the configuration.

10.2 Mail Relay

After mails are scanned by the SifoWorks system, the system forwards the mails to their respective mail servers according to the settings in the mail relay function.

Select **"Mail Security > Configure > Mail Relay"** to view a list of mail servers to relay mails to. You can modify or remove any mail relay server from the list by clicking on the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new relay server. If the mail server is located internally (LAN or DMZ), select **Domain name of internal mail server** and enter the **domain name** and **IP address** of the mail server. If the mail server is located externally, select **allowed external IP of mail relay** and enter the external **IP address** and **netmask**.

You can also select to **enable LDAP** and setup the parameters of the LDAP server to retrieve the relay account information from. This includes the **LDAP server IP** address, **port** number and the **username** and **password** for authentication with the LDAP server.

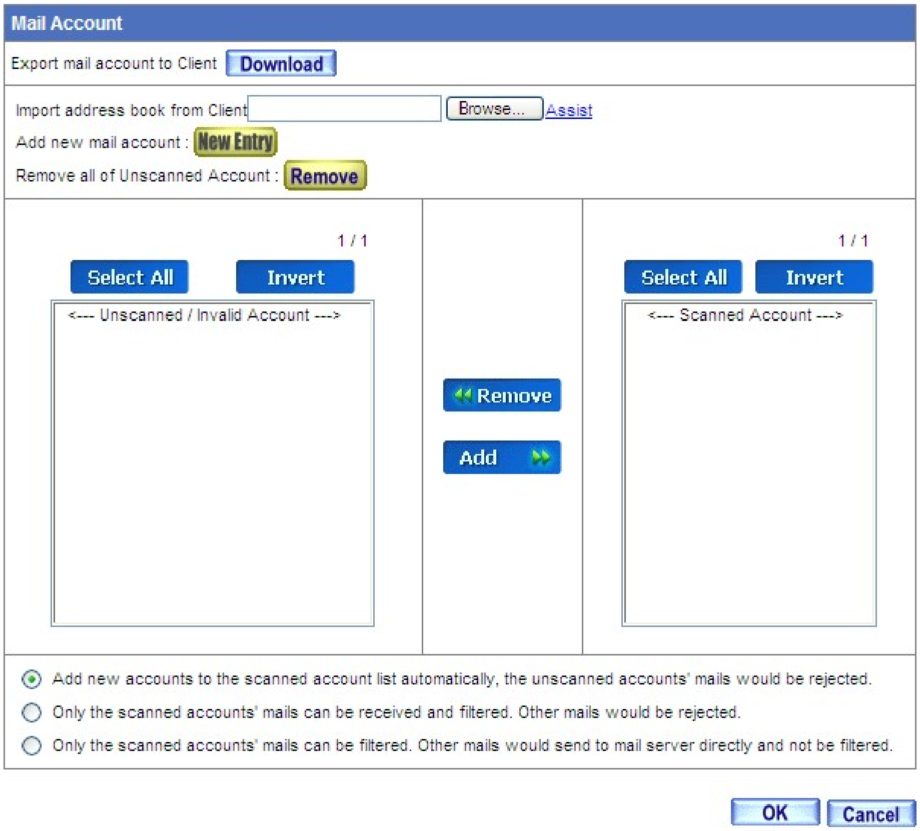
Click the **[Test]** link to test the connection of SifoWorks U200 to the specified LDAP server.

Click **[OK]** to add the new mail relay server.

10.3 Mail Account

Select **"Mail Security > Configure > Mail Account"** to view the list of internal mail servers setup in the **"Mail Relay"** function. Please refer to *section 10.2* for details on setting up mail relay.

You can modify the accounts managed by a particular mail server by clicking the **[Modify]** button from the **configure** column corresponding to the server.



Mail Account

Export mail account to Client Download

Import address book from Client Browse... Assist

Add new mail account : New Entry

Remove all of Unscanned Account : Remove

1 / 1
Select All
Invert
<--- Unscanned / Invalid Account --->
Remove
Add
1 / 1
Select All
Invert
<--- Scanned Account --->
OK
Cancel

● Add new accounts to the scanned account list automatically, the unscanned accounts' mails would be rejected.

○ Only the scanned accounts' mails can be received and filtered. Other mails would be rejected.

○ Only the scanned accounts' mails can be filtered. Other mails would send to mail server directly and not be filtered.

Fig. 10.2

Click the **[Download]** button to export all mail accounts in this server to a file.

To import mail accounts, click **[Browse...]** and select the file containing the addresses to be uploaded. You can click the **[Assist]** link for details on exporting the address book from your mail client.

To **add a new mail account**, click **[New Entry]** and enter the mail address. Click **[OK]** to add the mail account.

Click **[Remove]** to remove all mail accounts in the **unscanned accounts** list from the server.

From the middle portion of the interface, you can select the accounts to be scanned for spam/virus mails from the **unscanned/invalid account** list and click **[Add>>]** to move them into the **scanned account** list. Select the account from the **scanned account** list and click **[<<Remove]** to stop scanning the mails sent to these addresses.

The bottom part of the interface presents you with three choices of managing the mails received by the mail accounts in this server. They include:

1. Automatically **add new accounts to the scanned account list**. All mails sent to accounts in the **unscanned account** list will be rejected.

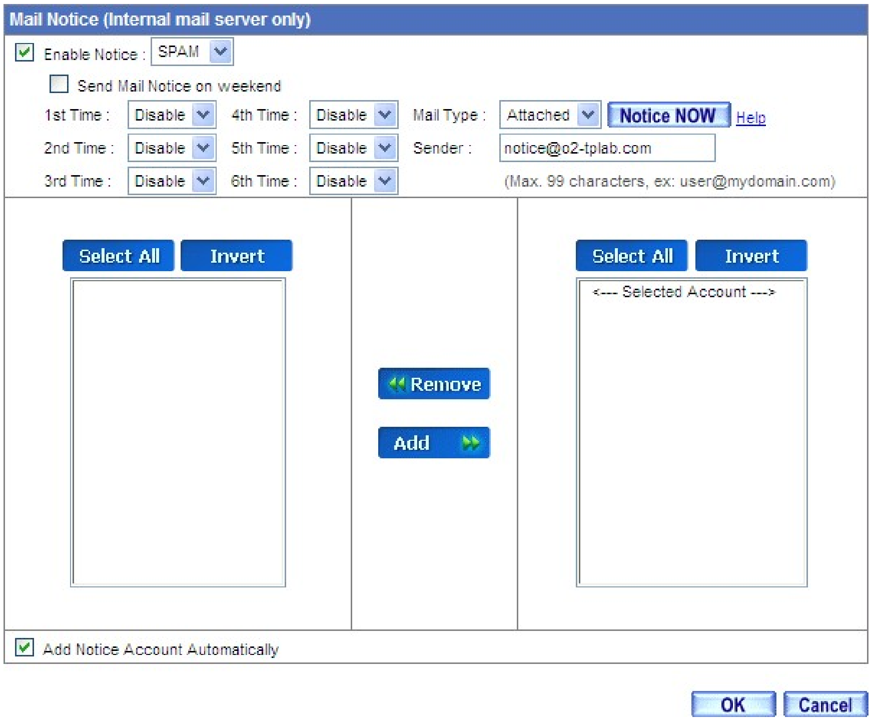
2. Only mails sent to addresses in the **scanned accounts** list will be received and filtered. All other mails will be rejected.

3. Only mails sent to addresses in the **scanned accounts** list will be filtered. All other mails will be sent to the mail server directly without being scanned.

10.4 Mail Notice

For each internal mail server configured in the **"Mail Relay"** function, you can configure a notification mail to be sent to recipients at a scheduled time.

Select **"Mail Security > Configure > Mail Notice"** from the left menu to view the list of internal mail servers. Click the **[Modify]** button corresponding to a mail server to setup the notification mail for that server.



Mail Notice (Internal mail server only)

☑ Enable Notice : SPAM

□ Send Mail Notice on weekend

1st Time :	Disable	4th Time :	Disable	Mail Type :	Attached
2nd Time :	Disable	5th Time :	Disable	Sender :	notice@o2-tplab.com
3rd Time :	Disable	6th Time :	Disable		(Max. 99 characters, ex: user@mydomain.com)

<--- Selected Account --->

☑ Add Notice Account Automatically

Fig. 10.3

Enable notice for either "SPAM" mails, "Virus" mails or both. Mail notices will be sent to the recipients daily over the weekdays at the time specified in **1st Time** up to **6th Time**. Select **send mail notice on weekend** to enable the sending of notification mails on weekends.

The notification mail will contain a list of the detected spam/virus mails along with a customizable notice message (*section 10.1*). You can select whether to send this list as an attachment of as HTML in the mail. Users will be able to retrieve quarantined mails from this list.

Enter the **sender** address. Click **[Notice NOW]** to send a notice mail to the selected accounts immediately.

Select the account from the left list and click **[Add>>]** to add the account into the **selected account** list. To stop sending notification mails to an account, select it from the **selected account** list and click **[<<Remove]** to remove it from the list. Only accounts in the **selected account** list will receive notification mails.

Enabling **add notice account automatically** will send mail notifications to all new accounts added in the **"Mail Account"** function (*section 10.3*).

Click **[OK]** to save the configurations.

10.4.1 Personal Rule

Mail recipients can also customize the mail notice configurations for their specific account. From the received notification mails, click the **[Personal Rule]** link.

Users must first be authenticated before they are allowed to modify their personal rule. Please refer to *section 10.1* to setup the authentication port and method for mail users.

After successful login, the user can select to enable or disable notice for spam mail, virus mail or both. He can also select whether to receive notice mails over the weekend and whether to receive the notification mail list as an attachment or in HTML format.

Click **[OK]** to save the changes.

Note: After a user disables notice in his personal rule setting, if he wishes to receive notification mails, he must re-enable notice in the personal rule interface and contact the administrator to add his account into the list of accounts to send notification mails to.

10.5 Anti-Spam

Here you can setup the settings for the anti-spam function.

Filtering spam mails received by the system reduces the burden on the mail servers and can also increase work efficiency as the users need not spend time sorting and removing spam mail from his inbox.

10.5.1 Basic Settings

Select **"Mail Security > Anti-Spam > Setting"** to configure the basic anti-spam settings.

In this configuration interface, select to **enable anti-spam** and select the network where the mail servers are located. Specify the **threshold score** of spam mails and enter the message to add to the spam mail's subject line.

Select your desired options for the spam mail check settings.

Tip: *Click **[Test]** to test that the checks are working correctly.*

Specify whether global rules (defined by administrators) or personal rules (defined by users) take **priority** in deciding whether a mail should be classified as spam mail.

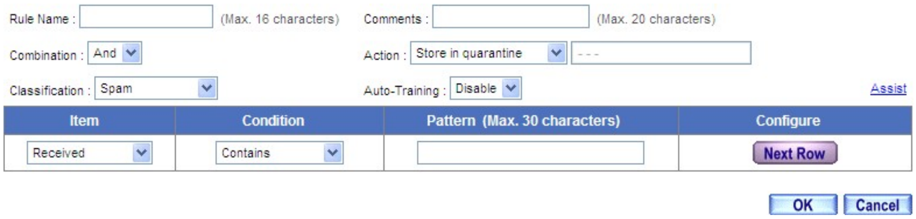
Select the **action** to perform on the detected spam mails. When the mail's recipient is on an internal mail server, you can either **delete** the mail, continue to **deliver** the mail to the recipient, **forward** the mail to the specified mail address or store the mail in a quarantine folder.

Click **[OK]** to save the configuration.

10.5.2 Spam Rules - Global

Select **"Mail Security > Anti-Spam > Global Rule"**. Here, a list of rules for the checking of spam mails can be viewed. The rules in this list apply to all mails that are scanned. You can modify or remove a rule by clicking the appropriate buttons in the **configure** column.

To add a new rule, click **[New Entry]** from the bottom of the list.



Rule Name : (Max. 16 characters) Comments : (Max. 20 characters)

Combination : And

Action : Store in quarantine ---

Classification : Spam

Auto-Training : Disable

Item	Condition	Pattern (Max. 30 characters)	Configure
Received	Contains		Next Row

Fig. 10.4

Enter the **rule name** and **comments** if any. Select the whether to **classify** mails that matches this rule as "spam" mails or "ham" mails. Also select whether to enable **auto-training** for the system to automatically learn the classification of mails matching this rule. Auto-training will take place at the scheduled time daily. Please refer to *section 10.5.6* for details.

Select the **action** to take on the mails matching the rule. If the action "forward to" is selected, you must also enter the email address to forward the mail to in the adjacent textbox.

Within a single rule, you can add multiple matching patterns. The list below displays the criteria that are matched to mails by this rule. Specify the **item** of the mail to check and the **pattern** to check against. Select the **condition** of the check and click **[Next Row]** to add the new criteria into the list. Note that the **conditions** available for selection differ according to the check **item**. Click **[Remove]** to delete a criteria from the list.

When "And" is selected in the **combination** field, only mails matching every criteria in the list will match this rule. If "Or" is selected, a mail matches the rule as long as it fulfils one of the criteria in the list.

Click **[OK]** to add the new rule.

Note: *System spam rules take priority over the email whitelist and blacklist.*

10.5.3 Spam Rules – Personal

Select **"System > Anti-Spam > Personal Rule"** to view the list of internal mail servers as configured in the **"Mail Relay"** function (*section 10.2*). Click **[Modify]** to view the accounts in the mail server.

From the list of accounts, click **[Modify]** in the **configure** column to view the personal rules setup by the user.

Mail users can login to the SifoWorks U200 using their mail server's IP address with the authentication port configured by the SifoWorks' administrator (*section 10.1*). They can also access this interface by clicking the **[Personal Rule]** link found in the notification mails sent by the system.

From the interface, they can **search** for the mails filtered by SifoWorks, add sender/receiver email addresses to their **whitelist** and **blacklist**, change the **language** of their received notice mail and change their authentication **password** used to login to the personal rule interface.

Note: *Administrators must select "Local Database" as an **login authentication** method in **"Mail Security > Configure > Setting"** to enable users to change their login password in the personal rule interface.*

10.5.4 Email Address Whitelist

You can setup a list of email addresses such that mails from these addresses are sent to the recipient without having to be checked by the anti-spam function.

Select **"Mail Security > Anti-Spam > Whitelist"** to view the list of allowed email addresses. You can modify or remove an address from the list by clicking the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new allowed email address. Enter the **whitelist** email address. You can either input the entire email address (such as "email@emaildomain.com") or use the wildcard character "*". For example "*yahoo*" will represent all email addresses containing the word "yahoo".

In the **direction** field, select whether the email address is to correspond to the mail's sending email ("from") or recipient email ("To"). Lastly, enable or disable **auto-training** for the system to automatically learn that mails with this email address are classified as "ham" (non-spam) mail. Auto-training will take place at the scheduled time daily. Please refer to *section 10.5.6* for details.

Click **[OK]** to add the new allowed email address.

Export Whitelist to Client

You can save the system's email whitelist to a file stored locally. Click **[Download]** to export the list.

Import Whitelist from Client

To import a list of email addresses from a local file into the SifoWorks U200 system, click **[Browse…]** and select the file to upload. Click **[OK]** to begin the import.

10.5.5 Email Address Blacklist

You can setup a list of email addresses such that mails from these addresses are automatically blocked by the system.

Select **"Mail Security > Anti-Spam > Blacklist"** to view the list of restricted email addresses. You can modify or remove an address from the list by clicking the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new restricted email address. Enter the **blacklist** email address. You can either input the entire email address (such as "email@emaildomain.com") or use the wildcard character "*". For example "*yahoo*" will represent all email addresses containing the word "yahoo".

In the **direction** field, select whether the email address is to correspond to the mail's sending email ("from") or recipient email ("To"). Lastly, enable or disable **auto-training** for the system to automatically learn that mails with this email address are classified as "spam" mail. Auto-training will take place at the scheduled time daily. Please refer to *section 10.5.6* for details.

Click **[OK]** to add the new blacklisted email address.

Export Blacklist to Client

You can save the system's email blacklist to a file stored locally. Click **[Download]** to export the list.

Import Blacklist from Client

To import a list of email addresses from a local file into the SifoWorks U200 system, click **[Browse…]** and select the file to upload. Click **[OK]** to begin the import.

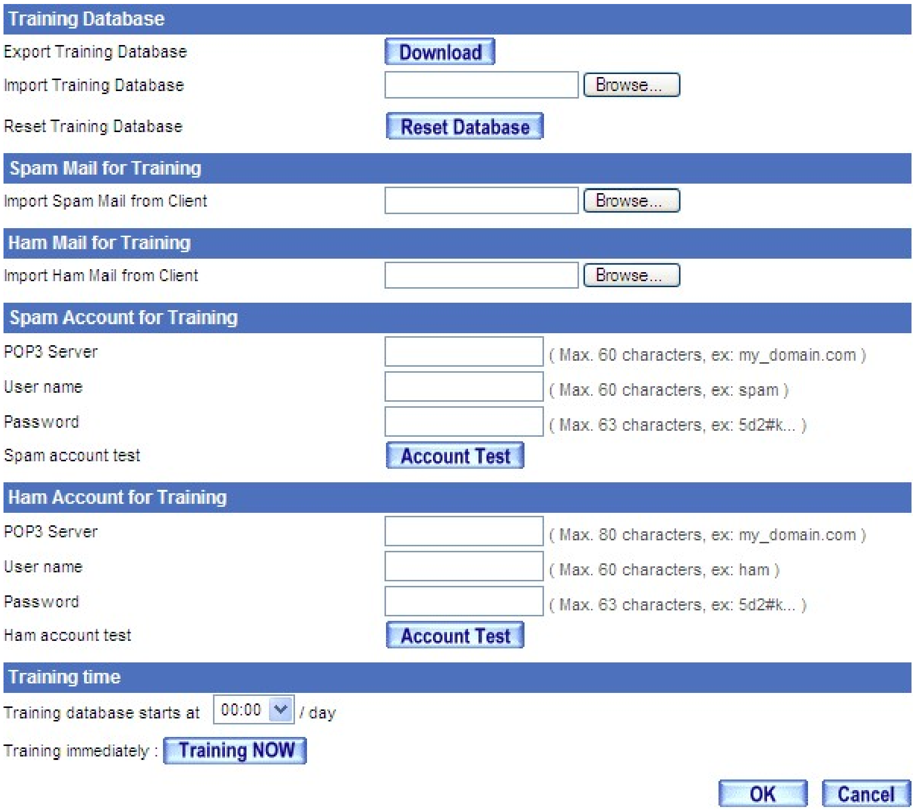
Note: *The email whitelist is of higher priority than the email blacklist. This means that if the same email address is present in both the whitelist and blacklist, the email will be classified as "ham" mail.*

10.5.6 Automatic System Spam Mail Training

You can setup such that the system can learn from the mails that have been detected as spam or ham previously. Select **"Mail Security > Anti-Spam > Training"** to configure the settings for system spam training.

The top part of the interface displays the training statistics including the number of spam and ham mails in the system available for training and the **free space** available for storing mails for training.

The remaining portion of the interface consists of the training parameters you can configure.



Training Database	
Export Training Database	Download
Import Training Database	Browse...
Reset Training Database	Reset Database
Spam Mail for Training	
Import Spam Mail from Client	Browse...
Ham Mail for Training	
Import Ham Mail from Client	Browse...
Spam Account for Training	
POP3 Server	(Max. 60 characters, ex: my_domain.com)
User name	(Max. 60 characters, ex: spam)
Password	(Max. 63 characters, ex: 5d2#k...)
Spam account test	Account Test
Ham Account for Training	
POP3 Server	(Max. 80 characters, ex: my_domain.com)
User name	(Max. 60 characters, ex: ham)
Password	(Max. 63 characters, ex: 5d2#k...)
Ham account test	Account Test
Training time	
Training database starts at	00:00 / day
Training immediately :	Training NOW

Fig. 10.5

Training Database

Click **[Download]** to export the system's training database into a file for local storage.

Click **[Browse...]** and select a database file to import into the system.

Click **[Reset Database]** to reset the system database.

Spam Mail for Training

Import a file containing a spam mail that was erroneously judged as non-spam. This trains the system to recognize the mail as spam mail in future.

Ham Mail for Training

Import a file containing a ham mail that was erroneously judged as spam mail. This trains the system to recognize the mail as ham mail in future.

Note that the training files to be imported can be any data file type as long as it is in ASCII.

Spam Account for Training

The system can be trained to recognize the spam mails present in a mail account. Configure the account's **POP3 server** domain name, **username** and **password**. You can click **[Account Test]** to test the connection of the system to the configured account.

Ham Account for Training

The system can be trained to recognize the ham mails in a mail account. Configure the account's **POP3 server** domain name, **username** and **password**. You can click **[Account Test]** to test the connection of the system to the configured account.

Training Time

Here, you can setup a daily schedule for automatic learning to take place in the system. Select the time to begin updating the **training database** per **day**.

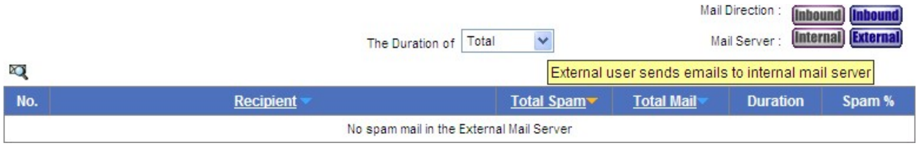
You can also click **[Training Now]** to manually begin the system training immediately.

Click **[OK]** to save the configurations made above and begin importing the selected files if any.

Note: *If the training file was exported from an email software, please close the e-mail software before importing the file.*

10.5.7 Spam Mail Log List

All spam mails detected will be logged in the system regardless of the action taken. Administrator can select **"Mail Security > Anti-Spam > Spam Mails"** to view the list of spam mails detected and logged in the system.



The Duration of Total

External user sends emails to internal mail server

No.	Recipient	Total Spam	Total Mail	Duration	Spam %
No spam mail in the External Mail Server					

Fig. 10.6

The system separates the spam mail log for **[Inbound]** and **[Outbound]** mails for either **[Internal]** or **[External]** mail servers. Click the respective buttons on the top right corner of the list to view the respective log lists.

From the top of the list, select to view mails received during a particular time duration. You can sort the list by **recipient** email address, **total spam** mail and **total mail** scanned by clicking on the corresponding columns in the list. An orange arrow next to the column name indicates that the list is currently sorted by that column. A down arrow indicates the list is sorted in descending order while an up arrow indicates ascending order.

From the left corner of the list, click the 🔍 icon to specify criteria used to search for specific mails on the list. The criteria include:

1. Recipient address

2. Sender address

3. Email subject

4. Date and time of the mails

5. Spam/Ham mails

6. Whether the mails contain attachments

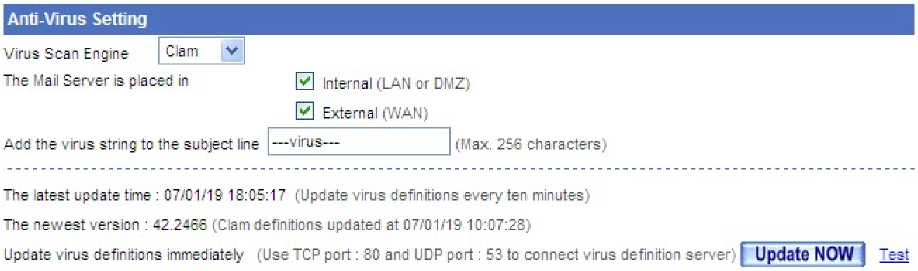
Click **[Search]** to begin the search. The results of the search will be displayed in the list below.

10.6 Anti-Virus

SifoWorks U200 further incorporates a function to scan emails sent to the mail servers for viruses.

Select **"Mail Security > Anti-Virus > Setting"** to setup the anti-virus function's basic configurations.

Anti-Virus Setting



Anti-Virus Setting

Virus Scan Engine: Clam

The Mail Server is placed in: ☑ Internal (LAN or DMZ) ☑ External (WAN)

Add the virus string to the subject line: ---virus--- (Max. 256 characters)

The latest update time : 07/01/19 18:05:17 (Update virus definitions every ten minutes)

The newest version : 42.2466 (Clam definitions updated at 07/01/19 10:07:28)

Update virus definitions immediately (Use TCP port : 80 and UDP port : 53 to connect virus definition server)

Fig. 10.7

In this part of the interface, setup the basic settings for the anti-virus function. Select the **virus scan engine** to be used and the **networks** where the **mail server** is in. The SifoWorks U200 anti-virus scan can be used on mails in both internal (LAN and DMZ) or external (WAN) mail servers.

Enter the **message** to be added to the subject line of the virus mails detected.

The time the system's virus definitions were last **updated** is also displayed along with the time interval between each update. The current virus definition file **version** is also displayed.

Click **[Update NOW]** to update the system's virus definitions immediately. Click **[Test]** to test the connection between the system and the update server.

Action of Infected Mail

Here, setup the action to be performed on infected mails that are detected by the system.

For **internal mail servers**, you can choose to either **delete the virus mail**, **deliver the original virus mail** to the recipient, **deliver a notification mail instead of the original virus mail** to the recipient, **forward** the virus mail to the specified email address or quarantine the virus mail.

For **external mail servers**, you can only choose to either **deliver a notification mail instead of the original virus mail** to the recipient or **deliver the original mail** to the recipient and/or quarantine the mail

Click **[OK]** to save the configurations.

10.6.1 Virus Mail Log List

All virus mails detected will be logged in the system regardless of the action taken. Administrator can select **"Mail Security > Anti-Virus > Virus Mails"** to view the list of virus mails detected and logged in the system.

The system separates the virus mail log for **[Inbound]** and **[Outbound]** mails on the **[Internal]** mail servers or **[External]** mail servers. Click the respective buttons on the top right corner of the list to view the respective mail log list.

From the top of the list, select to view mails received during a particular time duration. You can sort the list by **recipient** email address, **total virus** mail and **total mail** scanned by clicking on the corresponding columns in the list. An orange arrow next to the column name indicates that the list is currently sorted by that column. A down arrow indicates the list is sorted in descending order while an up arrow indicates ascending order.

From the left corner of the list, click the 🔍 icon to specify criteria used to search for specific mails on the list. The criteria include:

1. Recipient address

2. Sender address

3. Email subject

4. Virus name

4. Date and time of the mails

5. Virus/Non-virus mails

6. Whether the mails contain attachments or not

Click **[Search]** to begin the search. The results of the search will be displayed in the list below.

Tip: *SifoWorks' anti-virus and anti-spam functions are enabled by default. The system can scan for virus and spam mails based on default settings without any administrator configuration.*

10.7 Mail Report

SifoWorks generates an overall log and statistics of the spam/virus mails detected by the system.

10.7.1 Settings

Select **"Mail Security > Mail Report > Setting"** to setup the system to send periodic/history reports via email to the accounts configured in **"System > Configure > Setting"**. Please refer to *chapter 2*, *section 2.1.2* for information on setting up email alert notification. Reports are sent in PDF format attached in the email.

Periodic Reports

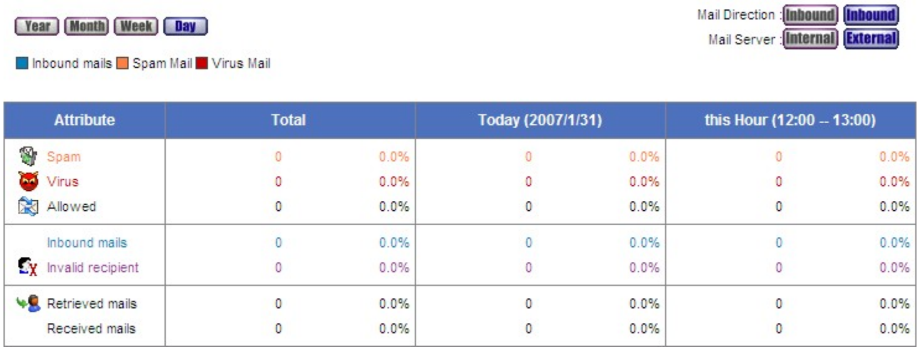
Enable sending periodic report and select the type of reports to be sent via email. Click **[OK]** to save the configuration. The system will send reports based on the specified time period. For example, select **weekly report** to send a report for the previous week at 00:00 hour on the first day of each week.

History Reports

Select the type of report and the corresponding date. Click **[Send NOW]** to send the selected report immediately.

10.7.2 Mail Statistics

Select **"Mail Security > Mail Report > Statistics"** from the menu to view the overall mail statistics report. You can choose to view the daily, weekly, monthly or yearly reports by clicking on the appropriate buttons on the top left corner of the interface.



🟦 Inbound mails 🟧 Spam Mail 🟥 Virus Mail

Attribute	Total		Today (2007/1/31)		this Hour (12:00 -- 13:00)	
Spam	0	0.0%	0	0.0%	0	0.0%
Virus	0	0.0%	0	0.0%	0	0.0%
Allowed	0	0.0%	0	0.0%	0	0.0%
Inbound mails	0	0.0%	0	0.0%	0	0.0%
Invalid recipient	0	0.0%	0	0.0%	0	0.0%
Retrieved mails	0	0.0%	0	0.0%	0	0.0%
Received mails	0	0.0%	0	0.0%	0	0.0%

Fig. 10.8

The system separates the mail statistics reports for **[Inbound]** and **[Outbound]** mails on the **[Internal]** mail servers or **[External]** mail servers. Click the respective buttons on the top right corner of the list to view the respective report.

The report includes an overall table listing the actual figures and 4 charts displaying the number of spam/virus mail over time and the top 10 spam/virus recipients.

10.7.3 Mail Log

Select **"Mail Security > Mail Report > Log"** to view the overall mail logged records. The system separates the mail log for **[Inbound]** and **[Outbound]** mails on the **[Internal]** mail servers or **[External]** mail servers. Click the respective buttons on the top right corner of the list to view the respective mail log.

You can sort the report according to each column by clicking on the column name. An orange arrow represents that the report is currently being sorted according to that column. An up arrow indicates ascending order while a down arrow indicates descending order.

The **attribute** column displays information on the type of mail. The icons include

Allowed	Spam	Virus	Unscanned	Invalid Recipient

The **Action** column displays information on the action performed on the mails by the system. The icons include:

Delete	Deliver	Forward	Store	Retrieved

Check the checkbox to select the corresponding mails and click the icon to retrieve the selected mails.

From the left corner of the list, click the icon to specify criteria used to search for specific mails on the list. The criteria include:

1. Recipient address

2. Sender address

3. Email subject

4. IP address

4. Date and time of the mails

5. Attribute (virus, spam etc) of the mail

6. Action taken on the mail

7. Whether the mails contain attachments or not

Click **[Search]** to begin the search. The results of the search will be displayed in the list below.

Chapter

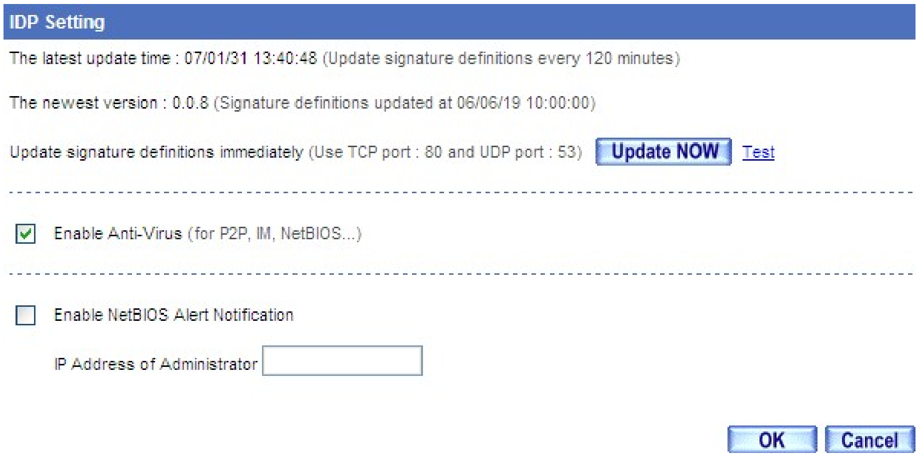
11

Intrusion Detection and Prevention

Through SifoWorks's intrusion detection and prevention (IDP) functionality, administrator's can setup the system to detect and prevent attacks such as SYN attacks, on the network from both internal and external sources.

11.1 Basic IDP Settings

Select **"IDP > Configure > Setting"** to setup the basic configuration for the IDP function.


IDP Setting

The latest update time : 07/01/31 13:40:48 (Update signature definitions every 120 minutes)

The newest version : 0.0.8 (Signature definitions updated at 06/06/19 10:00:00)

Update signature definitions immediately (Use TCP port : 80 and UDP port : 53)

☑ Enable Anti-Virus (for P2P, IM, NetBIOS...)

□ Enable NetBIOS Alert Notification

IP Address of Administrator

Fig. 11.1

The first part of the screen, as shown in the figure above, displays the information on the IDP signature **version** and last **update time**. Click **[Update NOW]** to update the IDP signature definitions. Click **[Test]** to test the connection of SifoWorks to the update server.

Select to **enable anti-virus** checks for the various protocols. **Enable NetBIOS alert notification** when attacks are detected and enter the **IP address** of the administrator to notify. Click **[OK]** to save the configuration.

In the bottom part of the screen, select the default action to perform on **high**, **medium** and **low risk** attack packets detected. Also select whether to **log** the information of the detected packets and to raise an **alarm** when attack packets of the corresponding risk level are detected.

11.2 IDP Signatures

Select **"IDP > Signature"** to manage the IDP signatures used to detect whether a packet is an attack packet.

11.2.1 Traffic Anomalies

Select **"IDP > Signature > Anomaly"** to view a list of unusual network activity such as syn flood, udp flood etc. and the detection status of such anomalies.

Click **[Modify]** corresponding to the anomaly to edit.

For "SYN flood", "UDP flood" and "ICMP flood" attacks, you can select to **enable** the detection for such attacks and specify the **maximum threshold** of packets from the same source before a flood attack is detected. Enter the **blocking time** of the sending IP of the packets from which a flood is detected. Select the **action** to perform on the packets and whether to **log** the packets' information.

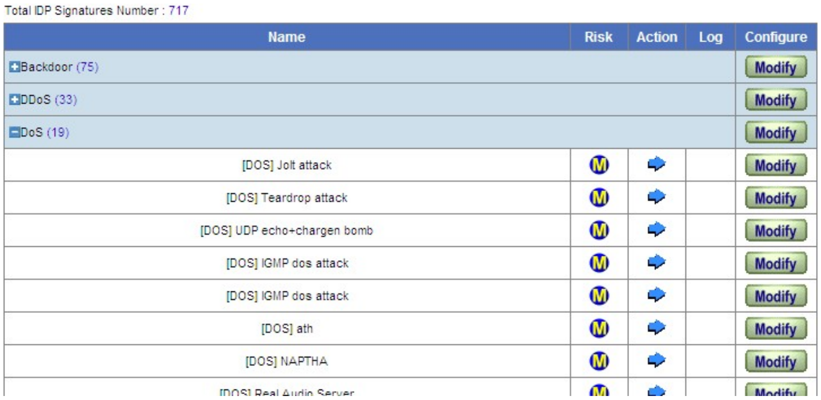
For all other traffic anomalies, you can only select whether to **enable** the detection of such attacks, the **action** to perform on the attack packets detected and whether to **log** the packets' information. Also select whether to raise an **alarm** when such attacks are detected.

Click **[OK]** to save the settings.

11.2.2 Pre-defined IDP Signatures

The SifoWorks U200 system has several pre-defined IDP signatures used to detect the various attacks. You can update the IDP signatures by downloading signature definition files into the system. Please refer to *Section 11.1* for details.

By default, the system enables the detection of attacks based on all pre-defined IDP signatures. Select **"IDP > Signature > Pre-defined"** to view a list of the IDP signatures and their status. A partial list is shown in the figure below.



Total IDP Signatures Number : 717

Name	Risk	Action	Log	Configure
⊞Backdoor (75)				Modify
⊞DDoS (33)				Modify
⊟DoS (19)				Modify
[DOS] Jolt attack	M	➡		Modify
[DOS] Teardrop attack	M	➡		Modify
[DOS] UDP echo+chargen bomb	M	➡		Modify
[DOS] IGMP dos attack	M	➡		Modify
[DOS] IGMP dos attack	M	➡		Modify
[DOS] ath	M	➡		Modify
[DOS] NAPTHA	M	➡		Modify
[DOS] Real Audio Server	M	➡		Modify

Fig. 11.2

The IDP signatures are categorized into various groups including "Backdoor" attacks, "DDOS" attacks etc. Click the **[+]** button to view the list of signatures under each group.

The **Risk** column shows the risk level of the corresponding attack (H = high, M = medium, L = low).

Click **[Modify]** to modify the status of an IDP signature. You can only edit the **action** to perform, whether to **log** the information of the packets detected to be carrying such an attack and to raise an alarm when such attacks are detected.

11.2.3 Self-defined IDP Signatures

Aside from the downloaded pre-defined IDP signatures, administrators can also define customized signatures to meet their network's needs. Select **"IDP > Signature > Custom"** to view a list of administrator-defined IDP signatures. You can edit or remove any signature from the list by clicking on the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new IDP signature.

Enter the **name** of the signature and select the **protocol** of the packets to be matched to this IDP rule. Enter the **source port** and

destination port of the packets to be matched. Specify the signature's **risk** level and **action** to be performed on the packets.

Select to **log** the packets' information and raise an **alarm** when such attacks are detected. Enter the **content** matching criteria of the signature. All packets containing this **content** string will be matched to the signature and the corresponding **action** will be carried out on the packet. You can also select to **disregard text case** when matching contents and whether to filter both incoming and outgoing packets.

Click **[OK]** to save the new IDP signature.

11.3 IDP Log Report

SifoWorks generates an overall log and statistics of the attack packets detected by the IDP function.

11.3.1 Settings

Select **"IDP > IDP Report > Setting"** to setup the system to send periodic/history reports via email to the accounts configured in **"System > Configure > Setting"**. Please refer to *chapter 2*, *section 2.1.2* for information on setting up email alert notification. Reports are sent in PDF format attached in the email.

Periodic Reports

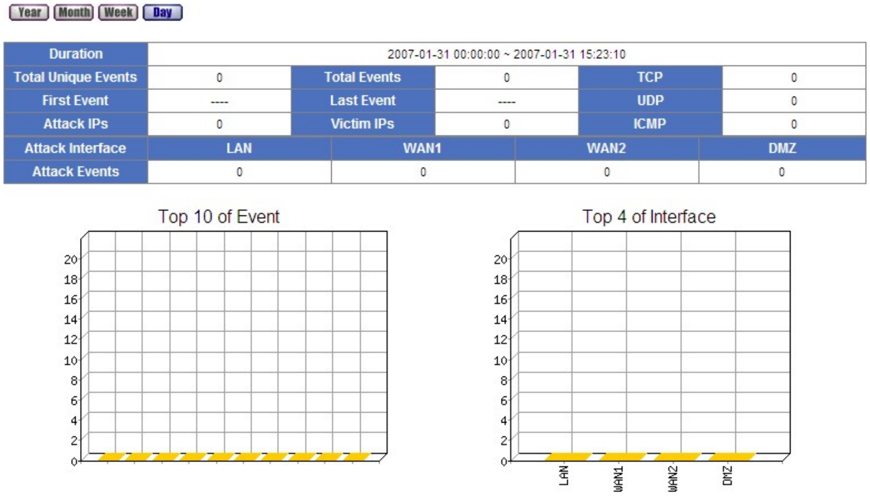
Enable sending periodic report and select the type of reports to be sent via email. Click **[OK]** to save the configuration. The system will send reports based on the specified time period. For example, select **weekly report** to send a report for the previous week at 00:00 hour on the first day of each week.

History Reports

Select the type of report and the corresponding date. Click **[Send NOW]** to send the selected report immediately.

11.3.2 IDP Statistics

Select **"IDP > IDP Report > Statistics"** from the menu to view the overall IDP statistics report. You can choose to view the daily, weekly, monthly or yearly reports by clicking on the appropriate buttons on the top left corner of the interface.



Duration	2007-01-31 00:00:00 ~ 2007-01-31 15:23:10				
Total Unique Events	0	Total Events	0	TCP	0
First Event	----	Last Event	----	UDP	0
Attack IPs	0	Victim IPs	0	ICMP	0

Attack Interface	LAN	WAN1	WAN2	DMZ
Attack Events	0	0	0	0

Fig. 11.3

The report includes an overall table listing the actual figures and charts displaying the top 10 types of attack events, the top 4 interfaces on which attacks were detected, top 10 IP addresses from which attacks originate, top 10 attacked IP addresses and the overall event statistics.

11.3.3 IDP Log

The system logs the information of all packets matching the signatures with the **log** option selected. This facilitates the monitoring of IDP activities in the network and aids administrators in maintaining the security of the network.

Select **"IDP > IDP Report > Log"** to view the list of logs collected by the system.

Logged information includes the **time** of occurrence, **event** occurred, **signature** classification, the packet's incoming **interface**, the IP address where the **attack** originated from, the **victim** IP address and port number and the **action** taken on the packet.

From the left corner of the list, click the 🔍 icon to specify criteria used to search for specific mails on the list. The criteria include:

1. Event type

2. Signature classification

3. Attack IP

4. Victim IP

4. Date and time of the attack

5. Risk level

Click **[Search]** to begin the search. The results of the search will be displayed in the list below.

Chapter

12

Anomaly Flow IP

Administrators can use the anomaly flow IP function, to block specific internal IP addresses from which virus or intrusion attacks are detected to be originating from.

12.1 Basic Settings

Select **“Anomaly Flow IP > Setting”** to setup the basic settings of the function.

Anomaly Flow IP Setting

Here, specify the maximum number of **sessions** per second allowed for each **source IP**. When the number of sessions established per second exceeds this threshold, the IP will be detected as an anomaly flow IP.

Enable anomaly flow IP blocking and specify the **blocking time** in seconds.

Select whether to **enable E-mail alert notification** and/or **NetBIOS alert** when anomaly flow is detected. Specify the **IP address** of the **administrator** if NetBIOS alert notification is enabled.

You can also **enable co-defense system** with an external switch supported by the SifoWorks system. Select the **switch** from the drop down menu and enter the **IP address** of the switch.

Enter the **alert message** to be sent to the user from whom the anomaly flow is detected.

Click **[OK]** to save the configuration.

Non-detected IP

The second half of the interface displays a list of anomaly IP addresses that will not be checked for anomaly flow. You can modify or delete an IP address from the list by clicking on the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new IP address. Select the **interface** where the IP is located. Enter the **IP address** and **netmask** and click **[OK]** to save the new IP.

12.2 Anomaly Flow IP Log

The system records the IP on which anomaly flow is detected. Administrators can view the logged records by selecting **"Anomaly Flow IP > Virus-infected IP"** from the left menu.

The logged information includes the **interface** where the IP address is located in, the **IP** address and the **time** when the alarm was raised.

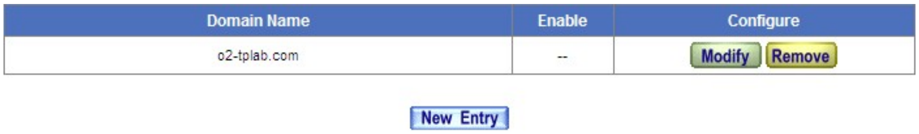
Chapter 13

Advanced Options

13.1 Inbound Balance

SifoWorks U200 incorporates a function to provide load balancing for inbound traffic. This reduces the load on a single server and increases overall efficiency. It also reduces losses caused by system crashes as traffic can be routed to the other servers.

Select **“Advance > Inbound Balance > Setting”** to view the list of public **domains** configured with load balance servers. Click **[Remove]** from the **configure** column to remove an entry from the list.



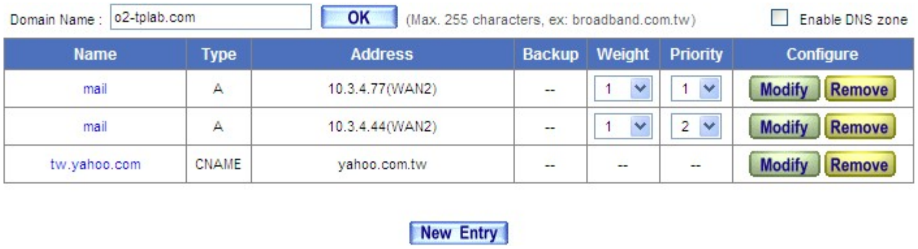
Domain Name	Enable	Configure
o2-tplab.com	--	Modify Remove

Fig. 13.1

Click **[New Entry]** and enter the **domain name** that is accessed by users. Also select whether to **enable DNS** for this domain. Click **[OK]** to add the new domain.

13.1.1 Adding Load Balance Servers to a Domain

To add the servers for load balancing for a particular domain, click the **[Modify]** button in the **configure** column corresponding to the domain in the list.



Domain Name : o2-tplab.com OK (Max. 255 characters, ex: broadband.com.tw) □ Enable DNS zone

Name	Type	Address	Backup	Weight	Priority	Configure
mail	A	10.3.4.77(WAN2)	--	1	1	Modify Remove
mail	A	10.3.4.44(WAN2)	--	1	2	Modify Remove
tw.yahoo.com	CNAME	yahoo.com.tw	--	--	--	Modify Remove

Fig. 13.2

The table lists all the servers that can be accessed when users access the **domain name**. You can modify or remove any server from the list by clicking the appropriate buttons in the **configure** column.

For address servers configured with the "round-robin" balance mode, the system distributes the traffic load according to the **weight** and **priority** setting of each server. You can modify the settings by selecting the value from the drop down menu in the **weight** and **priority** columns.

Click **[New Entry]** to add a new server. Select the server **type**. The configuration interface will change depending on the **type** selected.

Type "A"

If "A" is selected, the system maps the domain name to this server address. Specify the **name** of the server, the **IP address** and the **interface**. Select **Reverse** to enable searching for the domain name through the IP address.

Select the **balance mode** between all servers providing access to this domain. "Round-robin" mode distributes traffic load based on the weight and priority of the server. To enable the use of this server only if all other servers are disconnected, select the "Backup" mode.

Type "CNAME"

If "CNAME" is selected, the system maps the domain name to this alias domain name. Users can use either domain names to access the domain. Enter the **alias name** and the **real name** of the domain.

Type “MX”

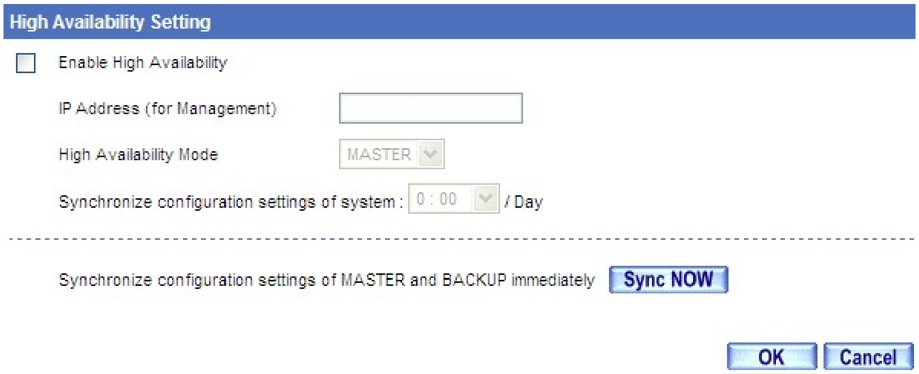
If “MX” is selected, the system is able to perform mail transfers via DNS. When the user changes his mail server, he need only modify the DNS record. Hence, the destination mail server need not know the mail server used to transfer the mails. Enter the **name** and **mail server** address.

Note that only “A” type servers are considered by the server when distributing traffic load.

Click **[OK]** to add the new entry.

13.2 High Availability

SifoWorks U200 offers a high availability (HA) system. When this function is enabled, a pair of SifoWorks U200 device works together such that when the "master" device malfunctions, the "backup" device will be able to replace the "master" device's operations. This provides redundancy and ensures the stability of the network.



High Availability Setting

□ Enable High Availability

IP Address (for Management)

High Availability Mode: MASTER

Synchronize configuration settings of system : 0 : 00 / Day

Synchronize configuration settings of MASTER and BACKUP immediately

Fig. 13.3

Enable high availability to setup this device for HA. Enter the **IP address** used for administrators to login to manage the HA devices. Note that the IP address must be within the same network segment as the LAN interface.

Select whether this device is the "Master" or "Backup" device. Specify the daily time schedule for the two peer devices to automatically **synchronize** the configuration settings of both systems.

Click **[OK]** to save the HA configuration.

You can manually activate a synchronization event between the two HA peer devices by clicking the **[Sync NOW]** button.

Chapter

14

System Monitoring

SifoWorks U200 offers a variety of monitoring functions such as log, reports, statistics etc. to facilitate the task of monitoring and debugging network events and problems.

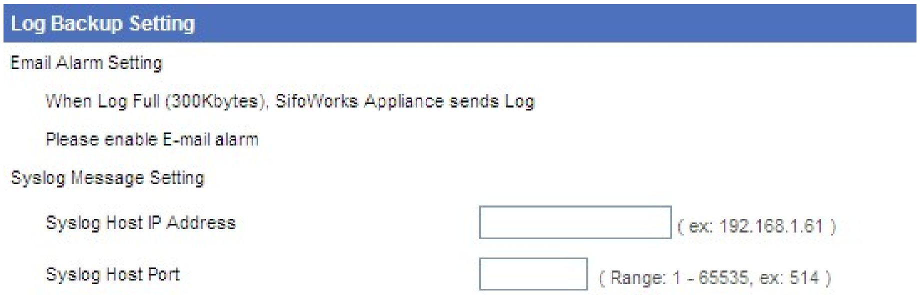
14.1 Logs

Administrators can view a list of logs collected by the system by selecting **“Monitor > Log”**. Log files aid in the administrator’s task of debugging errors in the network.

The log files are categorized into 3 groups, traffic logs, event logs and connection logs.

14.1.1 Log Settings

Select **“Monitor > Log > Setting”** to setup the automatic log backup configuration in the system. The interface is partially shown below:



Log Backup Setting

Email Alarm Setting

When Log Full (300Kbytes), SifoWorks Appliance sends Log

Please enable E-mail alarm

Syslog Message Setting

Syslog Host IP Address (ex: 192.168.1.61)

Syslog Host Port (Range: 1 - 65535, ex: 514)

Fig. 14.1

Enable E-mail alert from **“System > Configure > Setting”** (*section 2.1.2*) and specify the **syslog host IP address** and **port**.

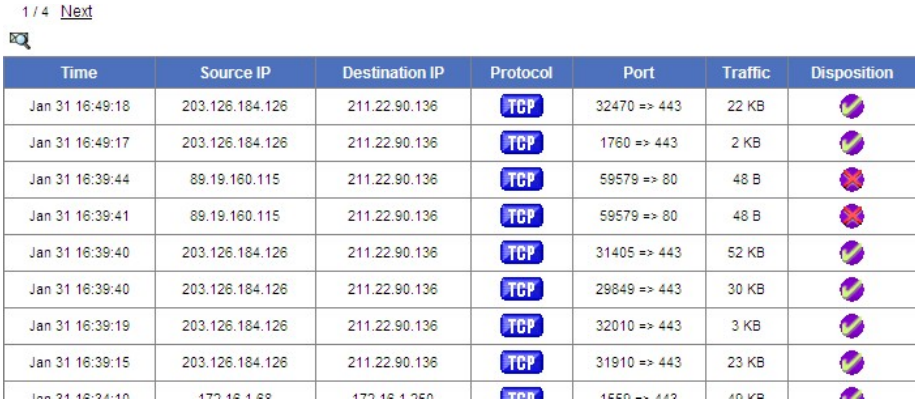
From the next half of the interface, you can configure the log setting for the different log types individually. For each log type (traffic, event, connection), specify the **storage lifetime** of the log, and select to enable sending the log to the specified **email**. When this is enabled, SifoWorks will automatically send the log list to the email server when the log exceeds 300Kbytes in size. The logs will then be cleared from the system.

Select to **enable syslog messages** to the host entered above.

Click **[OK]** to save the configuration.

14.1.2 Traffic Logs

Traffic logs records information regarding all network traffic flow. Select **"Monitor > Log > Traffic"** to view a list of the logs collected by the system. Logging of the traffic packets can be enabled when defining the system's policies. Please refer to *Chapter 7* on policy management for details.



Time	Source IP	Destination IP	Protocol	Port	Traffic	Disposition
Jan 31 16:49:18	203.126.184.126	211.22.90.136	TCP	32470 => 443	22 KB	✓
Jan 31 16:49:17	203.126.184.126	211.22.90.136	TCP	1760 => 443	2 KB	✓
Jan 31 16:39:44	89.19.160.115	211.22.90.136	TCP	59579 => 80	48 B	✗
Jan 31 16:39:41	89.19.160.115	211.22.90.136	TCP	59579 => 80	48 B	✗
Jan 31 16:39:40	203.126.184.126	211.22.90.136	TCP	31405 => 443	52 KB	✓
Jan 31 16:39:40	203.126.184.126	211.22.90.136	TCP	29849 => 443	30 KB	✓
Jan 31 16:39:19	203.126.184.126	211.22.90.136	TCP	32010 => 443	3 KB	✓
Jan 31 16:39:15	203.126.184.126	211.22.90.136	TCP	31910 => 443	23 KB	✓
Jan 31 16:34:10	172.16.1.68	172.16.1.250	TCP	1550 => 443	40 KB	✓

Fig. 14.2

The logged information includes the date and **time** the packet was logged, the **source** and **destination** IP address and **port** of the logged packet. It also includes the **protocol** used by the packet, packet size and whether the packet was allowed or denied from the network in the **disposition** column.

If the log spans more than 1 page, use the **[Next]** link to view the next page or the **[Back]** link to view the previous page.

From the left corner of the list, click the 🔍 icon to specify criteria used to search for specific traffic logs. Click **[Search]** to begin the search. The results of the search will be displayed in the list below.

From the bottom of the list, click **[Clear Logs]** to delete the collected traffic logs.

14.1.3 Event Logs

Event logs records information on administrator's activities in the system such as logins and other configuration activities. You can enable the logging of administrative activities when configuring the basic system settings. Please refer to *chapter 2, section 2.1.4* for details.

Select **"Monitor > Log > Event"** to view the log list. The logged information includes the date and **time** of event occurrence, the username of the **admin** performing the event, **IP address** of the administrator and a description of the **event**..

For events that involve changing the configuration of the system, click the icon from the **detail** column to view the before and after configuration details.

If the log spans more than 1 page, use the **[Next]** link to view the next page or the **[Back]** link to view the previous page.

From the left corner of the list, click the icon to specify criteria used to search for specific traffic logs. Click **[Search]** to begin the search. The results of the search will be displayed in the list below.

From the bottom of the list, click **[Clear Logs]** to delete the collected traffic logs.

14.1.4 Connection Logs

Connection logs records information regarding the network connections on the system. Select **"Monitor > Log > Connection"** to view the log list.

The logged information includes the date and **time** of occurrence and a description of the connection **event**.

If the log spans more than 1 page, use the **[Next]** link to view the next page or the **[Back]** link to view the previous page.

From the left corner of the list, click the icon to specify criteria used to search for specific traffic logs. Click **[Search]** to begin the search. The results of the search will be displayed in the list below.

From the bottom of the list, click **[Clear Logs]** to delete the collected traffic logs.

14.2 Report

Administrators can view an overall report of the outbound and inbound traffic through the SifoWorks U200 system. Select

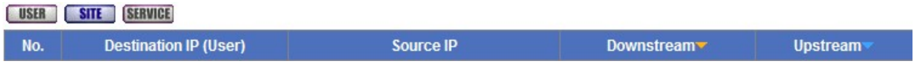
"Monitor > Accounting Report > Setting" to setup the use of this function.

Here, select the information to be recorded in the report for the **outbound** and **inbound** reports. The selectable parameters include **user**, **site** and **service** accessed.

Click **[OK]** to save the configuration.

14.2.1 Outbound Traffic Report

Select **"Monitor > Accounting Report > Outbound"** to view the overall report generated by the system for all outgoing traffic through the system.



No.	Destination IP (User)	Source IP	Downstream▼	Upstream▼

Fig. 14.3

Select to view the report collected based on **user** (LAN, DMZ), **site** (external servers) or **service** by clicking the appropriate buttons from the top left corner of the list. You can sort the report according to the **downstream** or **upstream** columns by clicking on the column name. An orange arrow represents that the report is currently being sorted according to that column. An up arrow indicates ascending order while a down arrow indicates descending order.

Up to 10 items are displayed per page. You can view the other items by selecting from the **top** drop down menu.

The total upstream and downstream statistics for all report items spanning all pages, is displayed at the bottom of the list.

Click **[Reset]** to remove all items from the report and restart the report generation.

14.2.2 Inbound Traffic Report

Select **"Monitor > Accounting Report > Inbound"** to view the report for inbound traffic. The interface is identical to the outbound traffic report. Please refer to the above *section 14.2.1* for details.

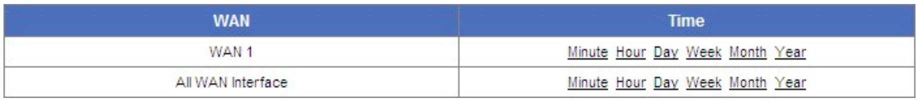
14.3 Statistics

The SifoWorks U200 system is able to generate overall statistical charts displaying the incoming and outgoing traffic flowing through its interfaces. This function provides administrator the ability to monitor network traffic based on date and time. The chart form also makes it easy for administrators to find information such as the date and time when network traffic is at its highest, when network bandwidth is underutilized etc.

The system generates two types of statistics, WAN statistics and policy statistics.

14.3.1 WAN Statistics

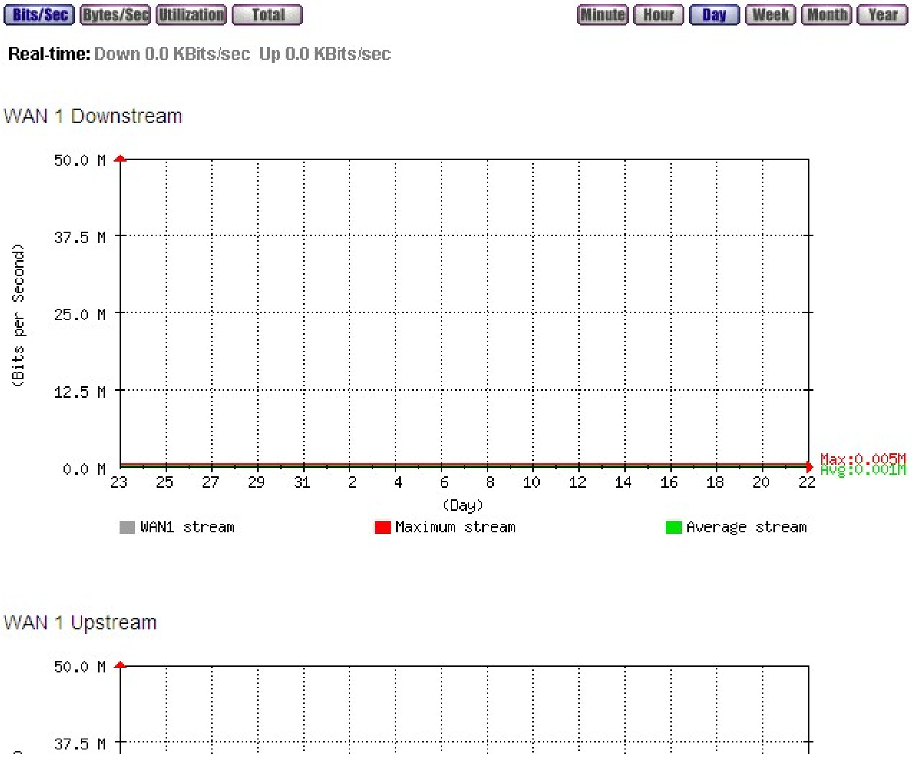
WAN statistics includes charts showing all incoming and outgoing traffic over the system's WAN interfaces. Select **"Monitor > Statistics > WAN"**.



WAN	Time
WAN 1	Minute Hour Day Week Month Year
All WAN Interface	Minute Hour Day Week Month Year

Fig. 14.4

From the list, you can view the statistics for each individual enabled WAN interface or the overall statistics for all WAN interfaces. From the **Time** column, you can select the type of chart you wish to view to bring up the corresponding charts as shown in the figure below.



Real-time: Down 0.0 KBits/sec Up 0.0 KBits/sec

Fig. 14.5

You can view 4 different charts in this interface:

1. Interface downstream (bit rate Vs. time)
2. Interface upstream (bit rate Vs. time)
3. Received packets (number of packets received per second Vs. time)
4. Sent packets (number of packets sent per second Vs. time)

From the top left corner of the page, select to draw the chart based on bit/second, byte/second, utilization percentage or total bytes.

From the top right corner of the page, select the time axis unit.

1. Minute: statistics displayed per minute for a total of 1 hour
2. Hour: Hourly statistics for a total of 24 hours
3. Day: Daily statistics for a total of 1 month
4. Week: Weekly statistics for a total of 3 months
5. Month: Monthly statistics for a total of 1 year
6. Year: Yearly statistics for a total of 10 years.

14.3.2 Policy Statistics

You can enable the generation of statistical chart for specific policies by enabling the **statistic** option when managing policies. Please refer to *Chapter 7* for details.

To view the list of policies with statistics enabled, select **"Monitor > Statistics > Policy"** from the left menu. As with the WAN interface statistics, you can select the time unit to view the chart in.

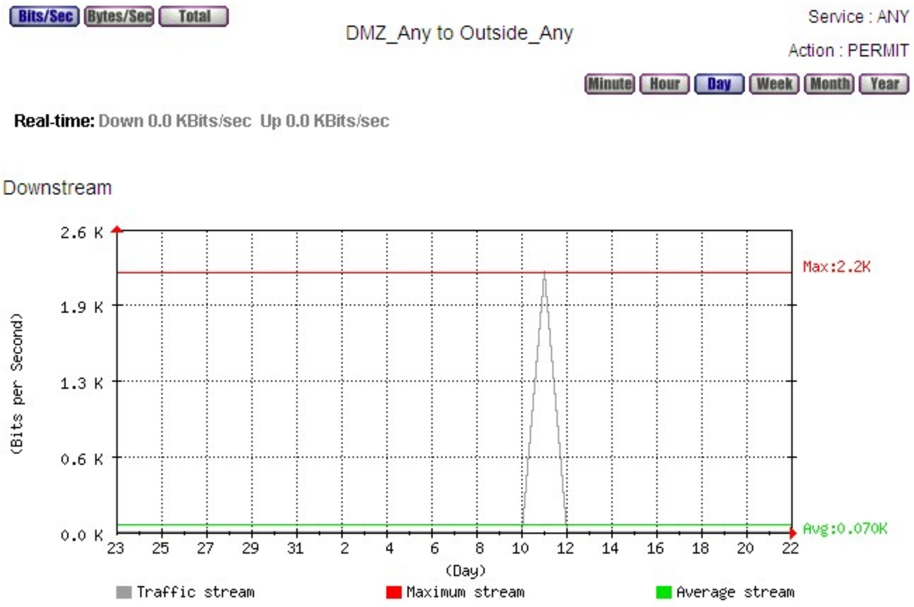


Fig. 14.6

You can view the downstream and upstream bit rate vs. time charts for the policy here. The charts display the statistics collected based on all packets flowing through the system that matches the policy.

From the top left corner of the page, select to draw the chart based on bit/second, byte/second or total bytes.

From the top right corner of the page, select the time axis unit.

14.4 Diagnostic Tools

SifoWorks U200 provides the Ping and Traceroute tools to test whether network links are working correctly.

14.4.1 Ping

Select **"Monitor > Diagnostic > Ping"**. Specify the **destination IP/domain name** to ping. Setup the various options including the ping **packet size**, ping **count**, **wait time** and the **interface** and interface IP address to send the ping packet through. Click **[OK]** to ping the specified destination.

The ping result is displayed in the **result** table in the bottom half of the interface.

14.4.2 Traceroute

Select **"Monitor > Diagnostic > Traceroute"**. Specify the **destination IP/domain name** to trace. Setup the various options including the **packet size**, maximum **time-to-live** value for the packet, **wait time** and the **interface** to send the packet through. Click **[OK]** to begin the traceroute operation.

The traceroute result is displayed in the **result** table in the bottom half of the interface.

14.5 Wake on LAN

The wake on LAN function provided in SifoWorks allows administrators to setup the system to remotely boot up specific PCs located within the connected LAN network.

Select **"Monitor > Wake on LAN > Setting"** to view a list of LAN PCs setup to be started up remotely. You can edit or delete any entry from the list by clicking the appropriate buttons in the **configure** column.

Click **[New Entry]** to add a new LAN PC to be booted up remotely. Specify the **name** and the PC's **MAC address**. Click **[OK]** to add this PC to the list.

14.6 System Status

Administrators can also view the various statuses of the system from the **"monitor"** function group. These include the status of the 4 network interface ports, DHCP clients in the system etc.

14.6.1 Status of Network Interface

Select **"Monitor > Status > Interface"** to view the basic configuration information and status of the 4 network interfaces (LAN, WAN1, WAN2, DMZ). This includes the interface's **forwarding mode**, **IP** and **MAC addresses**, **packets received** and **transmitted** etc.

On the top of the table you can also view the total number of **active sessions** currently established on the system and the total **system up time**.

14.6.2 System Information

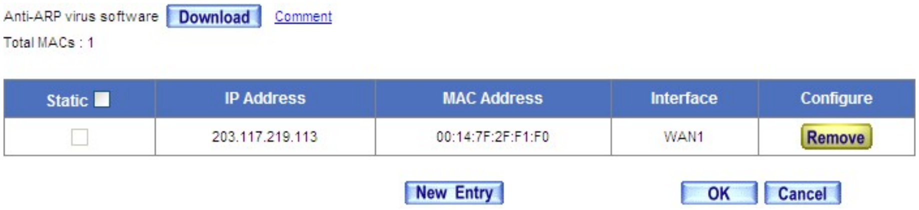
Select **"Monitor > Status > System Info"** to view the usage charts of various system resources include RAM and CPU etc.

14.6.3 Authentication Users

Select **"Monitor > Status > Authentication"** to view the list of authenticated users currently logged onto the system. The list displays the user's **IP address**, **user name** of the user's authentication account and the total **login time**. You can manually logout the user by clicking **[Remove]** in the **configure** column.

14.6.4 ARP Table

Select **"Monitor > Status > ARP Table"** to view the ARP table stored in the system.



Anti-ARP virus software Download Comment

Total MACs : 1

Static ☐	IP Address	MAC Address	Interface	Configure
☐	203.117.219.113	00:14:7F:2F:F1:F0	WAN1	Remove

Fig. 14.7

From the top of the list, click **[Download]** to download the **anti-ARP virus software** to protect the ARP table from viruses. You can click **[Comment]** to view information on downloading and executing the anti-virus software.

The total number of ARP entries in the table is shown from the top of the table.

On the table, you can view the **IP address** to **MAC address** resolution and the **interface** through which the PC communicates to the system. You can remove an entry from the table by clicking the **[Remove]** button in the **configure** column.

In the **static** column, select the IP to MAC address mappings that are to be kept static from the table. To select all ARP entries as static, click the checkbox next to the **static** column name. Click **[OK]** to save the changes.

Click **[New Entry]** to add a new IP to MAC address mapping into the table. In the page that appears, enter the **IP address** and the corresponding **MAC address**. Click **[OK]** to add the ARP entry.

14.6.5 Switch MAC Table

Select **“Monitor > > Status Switch MAC table”** to view the list of switches in the networks connected to the SifoWorks U200 interfaces. The table displays information including the switch’s **IP address**, **MAC address**, **name** and **port**.

Click the 🔍 icon to the top left corner of the list and specify the criteria to search for. Click **[Search]** to begin the search.

14.6.6 Sessions Information

Select **“Monitor > Status > Sessions Info”** to view the list of IP addresses that have established sessions with the SifoWorks system. The information listed includes the **source IP**, the login **duration** of the IP, the **total traffic** and the number of **sessions** established by the source IP.

You can sort the list according to any of the 4 columns. An orange arrow next to the column name indicates that the list is currently sorted by that column. A down arrow indicates the list is sorted in descending order while an up arrow indicates ascending order.

Click the 🔍 icon to the top left corner of the list and specify the criteria to search for. Click **[Search]** to begin the search.

To view specific information about the sessions established by a particular source IP, click the source IP from the list. The table lists the information of all the sessions established from the selected source IP including the **protocol**, **source IP**, **destination IP**, **port** number, time the session was started and total **traffic**. You can drop a session by clicking the **[Drop]** button in the **configure** column.

14.6.7 DHCP Clients

Select **“Monitor > Status > DHCP Clients”** to view the list of DHCP clients on the SifoWorks system.

The table displays information including the **IP address** leased by the DHCP server, the client PC’s **MAC address** and the starting and ending time of the lease.