

## 4.7.1 System Time

<input type="checkbox"/> BASIC SETTING		<input type="checkbox"/> FORWARDING RULES	<input type="checkbox"/> SECURITY SETTING	<input checked="" type="checkbox"/> <b>ADVANCED SETTING</b>	<input type="checkbox"/> TOOLBOX
--	--	---	---	---	----------------------------------

<ul style="list-style-type: none"><li>• System Time</li><li>• System Log</li><li>• Dynamic DNS</li><li>• SNMP</li><li>• Routing</li><li>• Schedule Rule</li></ul>	<input checked="" type="checkbox"/> <b>System Time</b> <span style="float: right;">[ HELP ]</span>	
	<b>Item</b>	<b>Setting</b>
	▶ System Time	2006年6月24日 下午 05:40:49
	▶ <input checked="" type="radio"/> Get Date and Time by NTP Protocol	<input type="button" value="Sync Now !"/>
	Time Server	time.nist.gov
	Time Zone	(GMT-08:00) Pacific Time (US & Canada)
	▶ <input type="radio"/> Set Date and Time using PC's Date and Time	
	PC Date and Time	2006年10月5日 上午 11:10:01
	▶ <input checked="" type="radio"/> Set Date and Time manually	
	Date	Year: 2006 Month: Jun Day: 01
	Time	Hour: 0 (0-23) Minute: 0 (0-59) Second: 0 (0-59)
	▶ Daylight Saving	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Start	Month: Jan Day: 01 Hour: 00	
End	Month: Jan Day: 01 Hour: 00	
<input type="button" value="Save"/> <input type="button" value="Undo"/>		

### Get Date and Time by NTP Protocol

Selected if you want to Get Date and Time by NTP Protocol.

#### Time Server

Select a NTP time server to consult UTC time

#### Time Zone

Select a time zone where this device locates.

#### Set Date and Time manually

Selected if you want to Set Date and Time manually.

#### Set Date and Time manually

Selected if you want to Set Date and Time manually.

#### Function of Buttons

**Sync Now:** Synchronize system time with network time server

**Daylight Saving:** Set up where the location is.

## 4.7.2 System Log

Multi-Functional Wireless Broadband NAT Router (R1.97f2a)

ADMINISTRATOR's MAIN MENU   Status   Wizard   Logout

BASIC SETTING   FORWARDING RULES   SECURITY SETTING   **ADVANCED SETTING**   TOOLBOX

System Time  
System Log  
Dynamic DNS  
SNMP  
Routing  
Schedule Rule

**System Log** [ HELP ]

Item	Setting	Enable
▶ IP Address for Syslog	192.168.122. <input type="text"/>	<input type="checkbox"/>
▶ IP Address of Outgoing Mail Server	<input type="button" value="Send Mail Now"/>	<input type="checkbox"/>
• SMTP Server IP/Port	<input type="text"/>	
• E-mail addresses	<input type="text"/>	
• E-mail Subject	<input type="text"/>	
• User name	<input type="text"/>	
• Password	<input type="text"/>	
▶ Log Type	<input checked="" type="checkbox"/> System Activity <input checked="" type="checkbox"/> Debug Information <input checked="" type="checkbox"/> Attacks <input checked="" type="checkbox"/> Dropped Packets <input checked="" type="checkbox"/> Notice	

This page support two methods to export system logs to specific destination by means of syslog(UDP) and SMTP(TCP). The items you have to setup including:

### IP Address for Syslog

Host IP of destination where syslogs will be sent to.

Check **Enable** to enable this function.

### E-mail Alert Enable

Check if you want to enable Email alert (send syslog via email).

### SMTP Server IP and Port

Input the SMTP server IP and port, which are concated with ':'. If you do not specify port number, the default value is 25.

For example, "mail.your\_url.com" or "192.168.1.100:26".

### Send E-mail alert to

The recipients who will receive these logs. You can assign more than 1 recipient, using ';' or ',' to separate these email addresses.

### 4.7.3 Dynamic DNS

The screenshot shows a web-based configuration interface. At the top, there is a navigation bar with 'ADMINISTRATOR's MAIN MENU', 'Status', 'Wizard', and 'Logout'. Below this is a tabbed menu with 'BASIC SETTING', 'FORWARDING RULES', 'SECURITY SETTING', 'ADVANCED SETTING' (which is selected), and 'TOOLBOX'. On the left side, there is a sidebar menu with options: 'System Time', 'System Log', 'Dynamic DNS' (selected), 'SNMP', 'Routing', and 'Schedule Rule'. The main content area is titled 'Dynamic DNS' with a '[ HELP ]' link. It contains a table with two columns: 'Item' and 'Setting'. The table has five rows: 'DDNS' with radio buttons for 'Disable' and 'Enable' (where 'Enable' is selected); 'Provider' with a dropdown menu showing 'No-IP.com'; 'Host Name' with a text input field; 'Username / E-mail' with a text input field; and 'Password / Key' with a text input field. At the bottom of the table are 'Save' and 'Undo' buttons.

Item	Setting
▶ DDNS	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
▶ Provider	No-IP.com ▼
▶ Host Name	<input type="text"/>
▶ Username / E-mail	<input type="text"/>
▶ Password / Key	<input type="text"/>

Save Undo

To host your server on a changing IP address, you have to use dynamic domain name service (DDNS).

So that anyone wishing to reach your host only needs to know the name of it. Dynamic DNS will map the name of your host to your current IP address, which changes each time you connect your Internet service provider.

Before you enable **Dynamic DNS**, you need to register an account on one of these Dynamic DNS servers that we list in **provider** field.

To enable **Dynamic DNS** click the check box next to **Enable** in the **DDNS** field.

Next you can enter the appropriate information about your Dynamic DNS Server.

You have to define:

Provider

Host Name

Username/E-mail

Password/Key

You will get this information when you register an account on a Dynamic DNS server.

#### Example:

The screenshot shows the web interface of a Multi-Functional Wireless Broadband NAT Router (R1.97f2a). The top navigation bar includes 'ADMINISTRATOR's MAIN MENU', 'Status', 'Wizard', and 'Logout'. Below this, a secondary bar contains 'BASIC SETTING', 'FORWARDING RULES', 'SECURITY SETTING', 'ADVANCED SETTING' (highlighted), and 'TOOLBOX'. On the left, a sidebar lists various settings: 'System Time', 'System Log', 'Dynamic DNS' (selected), 'SNMP', 'Routing', and 'Schedule Rule'. The main content area is titled 'Dynamic DNS' with a '[ HELP ]' link. It contains a table with two columns: 'Item' and 'Setting'. The table has five rows: 'DDNS' with radio buttons for 'Disable' and 'Enable' (the latter is selected); 'Provider' with a dropdown menu showing 'No-IP.com'; 'Host Name' with a text input field containing 'faelinux.no-ip.com'; 'Username / E-mail' with a text input field containing 'costra@amit.com.tw'; and 'Password / Key' with a text input field containing six asterisks. At the bottom of the table are 'Save' and 'Undo' buttons.

Item	Setting
DDNS	<input type="radio"/> Disable <input checked="" type="radio"/> Enable
Provider	No-IP.com
Host Name	faelinux.no-ip.com
Username / E-mail	costra@amit.com.tw
Password / Key	*****

After Dynamic DNS setting is configured, click the save button.

#### 4.7.4 SNMP Setting

The screenshot shows the 'SNMP Setting' configuration page. It has a title bar with 'SNMP Setting' and a '[ HELP ]' link. Below is a table with two columns: 'Item' and 'Setting'. The table has four rows: 'Enable SNMP' with checkboxes for 'Local' (checked) and 'Remote'; 'Get Community' with a text input field containing 'public'; 'Set Community' with a text input field containing 'private'; and 'WAN Access IP Address' with a text input field containing '0.0.0.0'. At the bottom of the table are 'Save' and 'Undo' buttons.

Item	Setting
Enable SNMP	<input checked="" type="checkbox"/> Local <input type="checkbox"/> Remote
Get Community	public
Set Community	private
WAN Access IP Address	0.0.0.0

In brief, SNMP, the Simple Network Management Protocol, is a protocol designed to give a user the capability to remotely manage a computer network by polling and setting terminal values and monitoring network events.

#### Enable SNMP

You must check either Local or Remote or both to enable SNMP function. If Local is checked, this device will response request from LAN. If Remote is checked, this device will response request from WAN.

#### **Get Community**

Setting the community of GetRequest your device will response.

#### **Set Community**

Setting the community of SetRequest your device will accept.

#### **WAN Access IP Address**

IF the user wants to limit to specific the ip address to access,please input in the item.The default 0.0.0.0 and means every ip of Internet can get some information of device with snmp protocol.

## 4.7.5 Routing

Multi-Functional Wireless Broadband NAT Router (R1.97f2a)

ADMINISTRATOR's MAIN MENU

Status

Wizard

Logout

BASIC SETTING

FORWARDING RULES

SECURITY SETTING

ADVANCED SETTING

TOOLBOX

• System Time

• System Log

• Dynamic DNS

• SNMP

• Routing

• Schedule Rule

Routing Table

[ HELP ]

Item	Setting				
Dynamic Routing	<input checked="" type="radio"/> Disable <input type="radio"/> RIPv1 <input type="radio"/> RIPv2				
Static Routing	<input type="radio"/> Disable <input checked="" type="radio"/> Enable				
ID	Destination	Subnet Mask	Gateway	Hop	Enable
1	192.168.123.0	255.255.255.0	192.168.122.3	1	<input checked="" type="checkbox"/>
2	192.168.19.0	255.255.255.0	192.168.122.18	1	<input checked="" type="checkbox"/>
3					<input type="checkbox"/>
4					<input type="checkbox"/>
5					<input type="checkbox"/>
6					<input type="checkbox"/>
7					<input type="checkbox"/>
8					<input type="checkbox"/>

Save

Undo

**Routing Tables** allow you to determine which physical interface address to use for outgoing IP data grams. If you have more than one routers and subnets, you will need to enable routing table to allow packets to find proper routing path and allow different subnets to communicate with each other.

Routing Table settings are settings used to setup the functions of static.

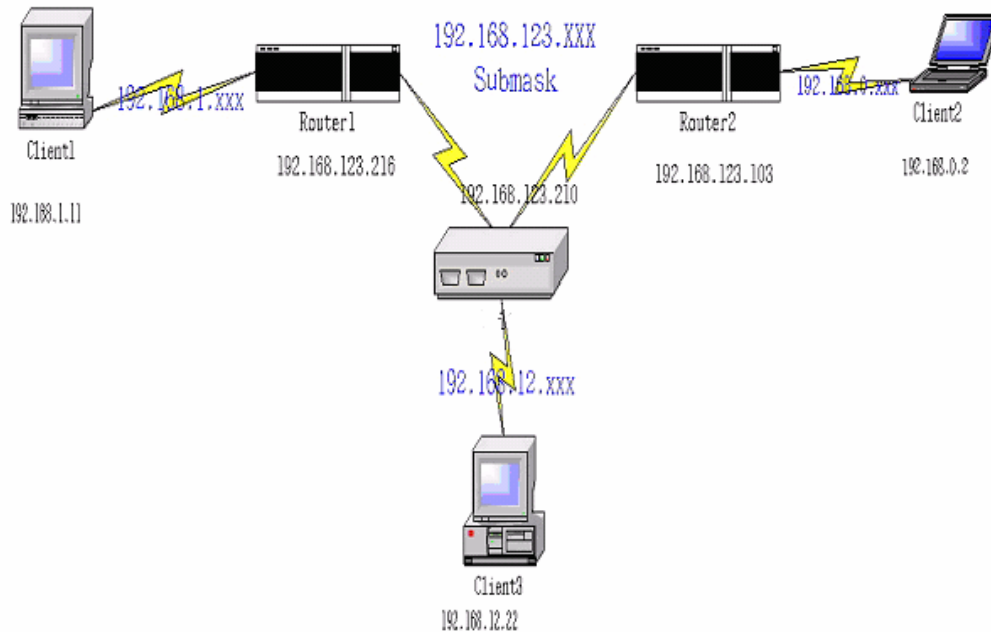
### Dynamic Routing

Routing Information Protocol (RIP) will exchange information about destinations for computing routes throughout the network. Please select RIPv2 only if you have different subnet in your network.

Otherwise, please select RIPv1 if you need this protocol.

**Static Routing:** For static routing, you can specify up to 8 routing rules. You can enter the destination IP address, subnet mask, gateway, hop for each routing rule, and then enable or disable the rule by checking or unchecking the Enable checkbox.

### Example:



### Configuration on NAT Router

Destination	SubnetMask	Gateway	Hop	Enabled
192.168.1.0	255.255.255.0	192.168.123.216	1	✓
192.168.0.0	255.255.255.0	192.168.123.103	1	✓

So if, for example, the client3 wanted to send an IP data gram to 192.168.0.2, it would use the above table to determine that it had to go via 192.168.123.103 (a gateway),

And if it sends Packets to 192.168.1.11 will go via 192.168.123.216

Each rule can be enabled or disabled individually.

After **routing table** setting is configured, click the **save** button.

## 4.7.6 Schedule Rule

ADMINISTRATOR's MAIN MENU

Status

Wizard

Logout

BASIC SETTING

FORWARDING RULES

SECURITY SETTING

ADVANCED SETTING

TOOLBOX

• System Time

• System Log

• Dynamic DNS

• SNMP

• Routing

• Schedule Rule

Schedule Rule

[ HELP ]

Item		Setting
Schedule		<input type="checkbox"/> Enable
Rule#	Rule Name	Action
		<div>SaveAdd New Rule...</div>

You can set the schedule time to decide which service will be turned on or off. Select the “enable” item.

Press “Add New Rule”



You can write a rule name and set which day and what time to schedule from “Start Time” to “End Time”. The following example configure “ftp time” as everyday 14:10 to 16:20

ADMINISTRATOR's MAIN MENU
Status
Wizard
Logout

BASIC SETTING
FORWARDING RULES
SECURITY SETTING
ADVANCED SETTING
TOOLBOX

- System Time
- System Log
- Dynamic DNS
- SNMP
- Routing
- Schedule Rule

Schedule Rule Setting
[ HELP ]

Item	Setting	
▶ Name of Rule 1	<input type="text"/>	
▶ System Time	2006年6月24日 下午 06:07:06	
Week Day	Start Time (hh:mm)	End Time (hh:mm)
Sunday	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>
Monday	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>
Tuesday	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>
Wednesday	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>
Thursday	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>
Friday	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>
Saturday	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>
Every Day	14 : 10	16 : 20

Save
Undo
Back

**Schedule Enable**

Selected if you want to Enable the Scheduler.

**Edit**

To edit the schedule rule.

**Delete**

To delete the schedule rule, and the rule# of the rules behind the deleted one will decrease one automatically.

Schedule Rule can be apply to Virtual server and Packet Filter, for example:

Example1: **Virtual Server** – Apply Rule#1 (ftp time: everyday 14:10 to 16:20)

ADMINISTRATOR's MAIN MENU
Status
Wizard
Logout

BASIC SETTING
**FORWARDING RULES**
SECURITY SETTING
ADVANCED SETTING
TOOLBOX

- Virtual Server
- Special AP
- Miscellaneous

Virtual Server
[ HELP ]

Well known services -- select one -- use Schedule rule (00)Always Copy to ID --

ID	Server IP	Service Ports	Protocol	Enable	Schedule Rule#
1	192.168.122.33	21	Both	<input checked="" type="checkbox"/>	1
2	192.168.122.13		Both	<input type="checkbox"/>	0
3	192.168.122.226		Both	<input type="checkbox"/>	0
4	192.168.122.229		Both	<input type="checkbox"/>	0
5	192.168.122.218		Both	<input type="checkbox"/>	0
6	192.168.122.218		Both	<input type="checkbox"/>	0
7	192.168.122.218		Both	<input type="checkbox"/>	0
8	192.168.122.218		Both	<input type="checkbox"/>	0
9	192.168.122.13		Both	<input type="checkbox"/>	0
10	192.168.122.		Both	<input type="checkbox"/>	0

Next >>
Save
Undo

Example2: **Packet Filter** – Apply Rule#1 (ftp time: everyday 14:10 to 16:20).

Outbound Packet Filter

[ HELP ]

Item	Setting			
► Outbound Filter	<input checked="" type="checkbox"/> Enable			
<div> <div> <input type="radio"/> Allow all to pass except those match the following rules.           <input checked="" type="radio"/> Deny all to pass except those match the following rules.         </div> </div>				
Schedule rule (00)Always  Copy to ID --				
ID	Source IP : Ports	Destination IP : Ports	Enable	Schedule Rule#
1	<input type="text"/> : <input type="text"/>	<input type="text"/> : 20-21	<input checked="" type="checkbox"/>	<input type="text" value="1"/>
2	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input checked="" type="checkbox"/>	<input type="text" value="0"/>
3	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input checked="" type="checkbox"/>	<input type="text" value="0"/>
4	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input checked="" type="checkbox"/>	<input type="text" value="0"/>
5	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input checked="" type="checkbox"/>	<input type="text" value="0"/>
6	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input type="checkbox"/>	<input type="text" value="0"/>
7	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input type="checkbox"/>	<input type="text" value="0"/>
8	<input type="text"/> : <input type="text"/>	<input type="text"/> : <input type="text"/>	<input type="checkbox"/>	<input type="text" value="0"/>

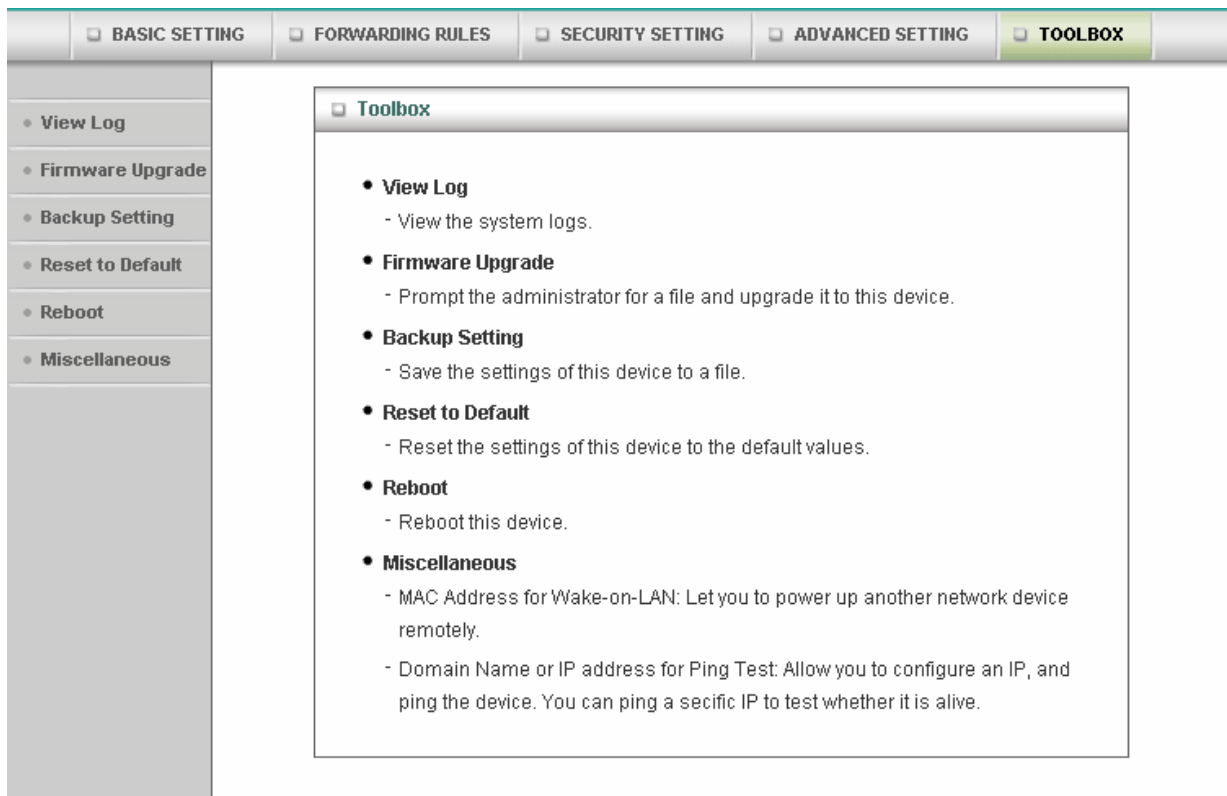
Save

Undo

Inbound Filter...

MAC Level...

## 4.8 Toolbox



### 4.8.1 System Log

System Log	
ITEM	Info
WAN Type	Dynamic IP Address (R1.97f2a)
Display time	Sat Jun 24 18:15:35 2006
Time	Log
2006年6月24日 下午 06:12:00	Block 00-E0-18-06-BF-24 because deny all
2006年6月24日 下午 06:12:00	Block 00-50-BA-04-D9-B5 because deny all
2006年6月24日 下午 06:12:00	Block 00-20-ED-5F-F8-35 because deny all
2006年6月24日 下午 06:12:01	Block 00-50-8D-50-C6-CA because deny all
2006年6月24日 下午 06:12:01	Block 00-E0-18-06-BF-24 because deny all
2006年6月24日 下午 06:12:01	Block 00-50-18-00-0F-FA because deny all
2006年6月24日 下午 06:12:01	Block 00-50-BA-04-D9-B5 because deny all
2006年6月24日 下午 06:12:01	Block 00-20-ED-5F-F8-35 because deny all
2006年6月24日 下午 06:12:02	Block 00-13-D4-29-7A-D5 because deny all
2006年6月24日 下午 06:12:02	Block 00-50-BA-04-D9-B5 because deny all
2006年6月24日 下午 06:12:02	Block 00-50-BA-04-D9-B5 because deny all
2006年6月24日 下午 06:12:02	Block 00-20-ED-5F-F8-35 because deny all
2006年6月24日 下午 06:12:02	Block 00-50-BA-04-D9-B5 because deny all
2006年6月24日 下午 06:12:02	Block 00-50-18-00-0F-F6 because deny all
2006年6月24日 下午 06:12:02	Block 00-13-D4-BA-23-93 because deny all

You can View system log by clicking the **View Log** button

#### 4.8.2 Firmware Upgrade

Firmware Upgrade

Firmware Filename

瀏覽...

Current firmware version is R1.97f2a. The upgrade procedure takes about 20 seconds.

Note! Do not power off the unit when it is being upgraded.

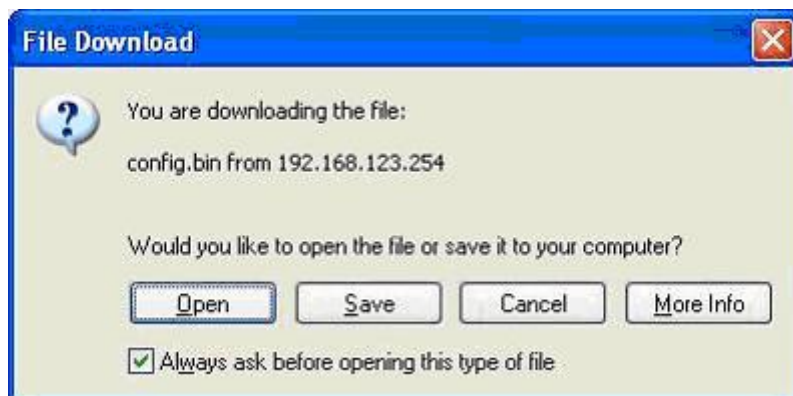
When the upgrade is done successfully, the unit will be restarted automatically.

Upgrade

Cancel

You can upgrade firmware by clicking **Firmware Upgrade** button.

#### 4.8.3 Backup Setting



You can backup your settings by clicking the **Backup Setting** button and save it as a bin file. Once you want to restore these settings, please click **Firmware Upgrade** button and use the bin file you saved.

#### 4.8.4 Reset to default



You can also reset this product to factory default by clicking the **Reset to default** button.

#### 4.8.5 Reboot



You can also reboot this product by clicking the **Reboot** button.

#### 4.8.6 Miscellaneous Items

Miscellaneous Items [ HELP ]	
Item	Setting
▶ MAC Address for Wake-on-LAN	<input type="text"/> <input type="button" value="Wake up"/>
▶ Domain Name or IP address for Ping Test	<input type="text"/> <input type="button" value="Ping"/>

##### MAC Address for Wake-on-LAN

Wake-on-LAN is a technology that enables you to power up a networked device remotely. In order to enjoy this feature, the target device must be Wake-on-LAN enabled and you have to know the MAC address of this device, say 00-11-22-33-44-55. Clicking "Wake up" button will make the router to send the wake-up frame to the target device immediately.

##### Domain Name or IP Address for Test

Allow you to configure an IP, and ping the device. You can ping a specific IP to test whether it is alive.



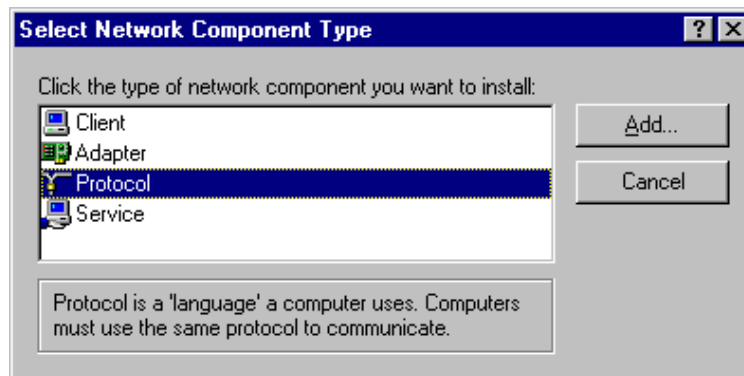


## Appendix A TCP/IP Configuration for Windows 95/98

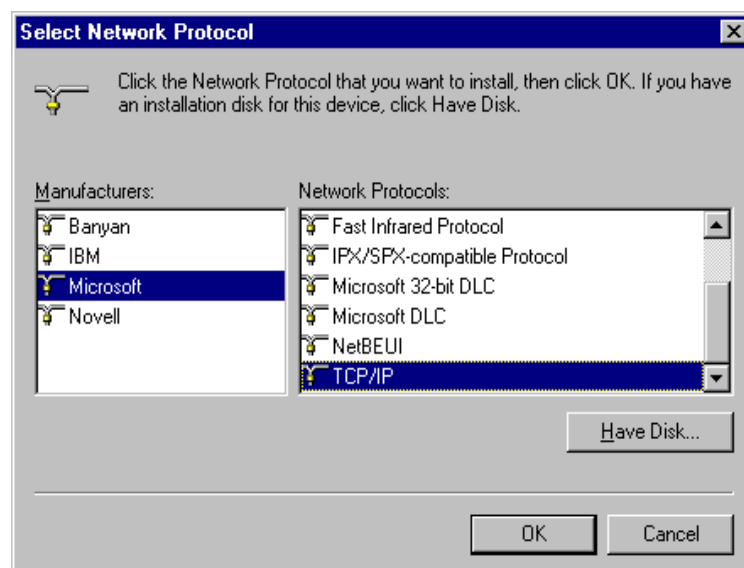
This section introduces you how to install TCP/IP protocol into your personal computer. And suppose you have been successfully installed one network card on your personal computer. If not, please refer to your network card manual. Moreover, the Section B.2 tells you how to set TCP/IP values for working with this NAT Router correctly.

### A.1 Install TCP/IP Protocol into Your PC

1. Click **Start** button and choose **Settings**, then click **Control Panel**.
2. Double click **Network** icon and select **Configuration** tab in the Network window.
3. Click **Add** button to add network component into your PC.
4. Double click **Protocol** to add TCP/IP protocol.



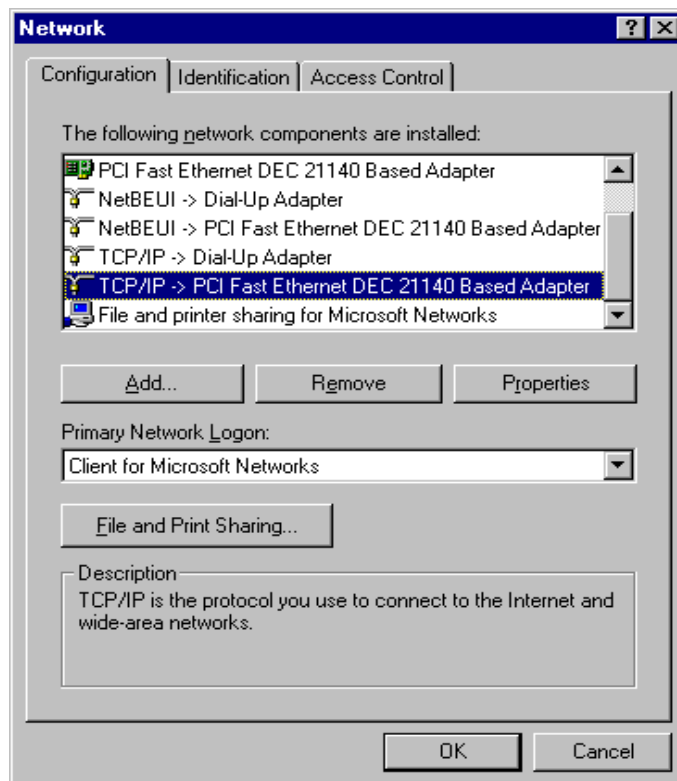
5. Select **Microsoft** item in the manufactures list. And choose **TCP/IP** in the Network Protocols. Click **OK** button to return to Network window.



6. The TCP/IP protocol shall be listed in the Network window. Click **OK** to complete the install procedure and restart your PC to enable the TCP/IP protocol.

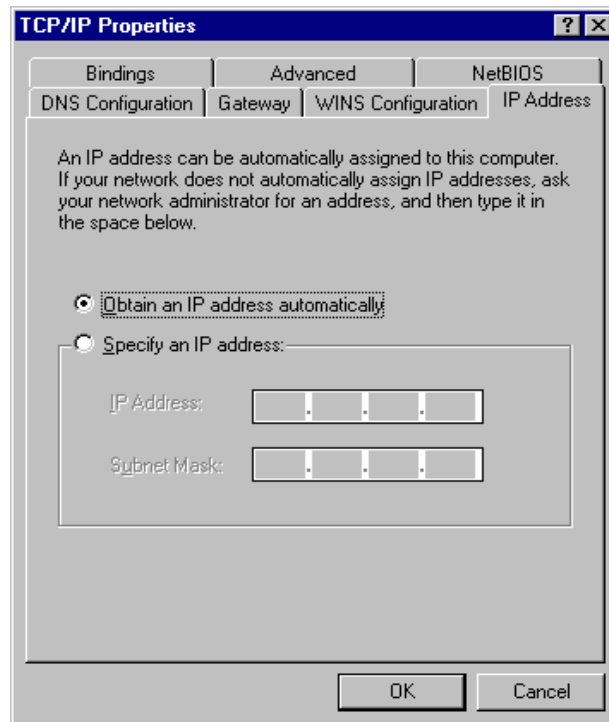
## A.2 Set TCP/IP Protocol for Working with NAT Router

1. Click **Start** button and choose **Settings**, then click **Control Panel**.
2. Double click **Network** icon. Select the TCP/IP line that has been associated to your network card in the **Configuration** tab of the Network window.



3. Click **Properties** button to set the TCP/IP protocol for this NAT Router.
4. Now, you have two setting methods:

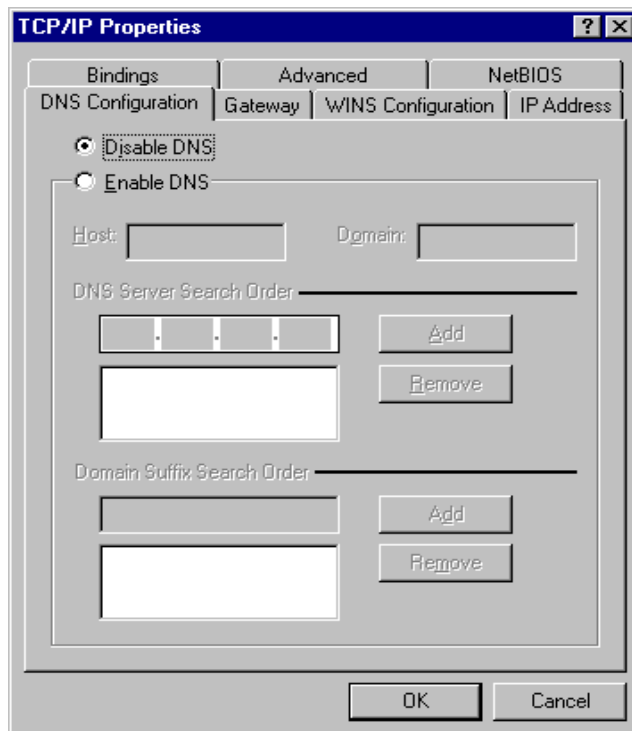
- a. Select **Obtain an IP address automatically** in the IP Address tab.



- b. Don't input any value in the Gateway tab.

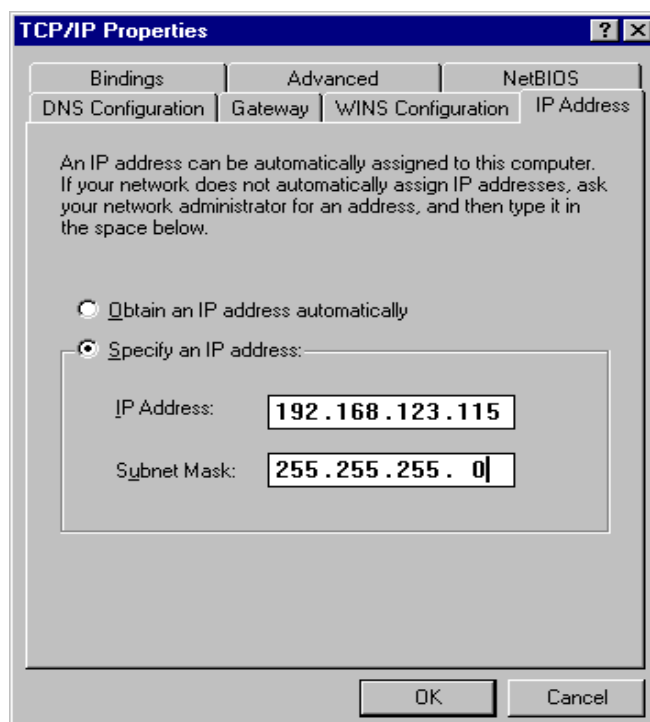


- c. Choose **Disable DNS** in the DNS Configuration tab.



B. Configure IP manually

- a. Select **Specify an IP address** in the IP Address tab. The default IP address of this product is 192.168.123.254. So please use 192.168.123.xxx (xxx is between 1 and 253) for IP Address field and 255.255.255.0 for Subnet Mask field.



- b. In the Gateway tab, add the IP address of this product (default IP is 192.168.123.254) in the New gateway field and click **Add** button.

The screenshot shows the 'TCP/IP Properties' dialog box with the 'Gateway' tab selected. The 'New gateway:' field contains the IP address '192.168.123.254'. Below it, the 'Installed gateways:' list is empty. The 'Add' button is visible next to the 'New gateway:' field, and the 'Remove' button is next to the 'Installed gateways:' list. The 'OK' and 'Cancel' buttons are at the bottom right.

- c. In the DNS Configuration tab, add the DNS values which are provided by the ISP into DNS Server Search Order field and click **Add** button.

The screenshot shows the 'TCP/IP Properties' dialog box with the 'DNS Configuration' tab selected. The 'Enable DNS' radio button is selected. The 'Host:' field contains 'MyComputer' and the 'Domain:' field is empty. The 'DNS Server Search Order' list contains the IP address '168.95.1.1'. The 'Domain Suffix Search Order' list is empty. The 'Add' button is visible next to the 'DNS Server Search Order' list, and the 'Remove' button is next to the 'Domain Suffix Search Order' list. The 'OK' and 'Cancel' buttons are at the bottom right.

## Appendix B 802.1x Setting

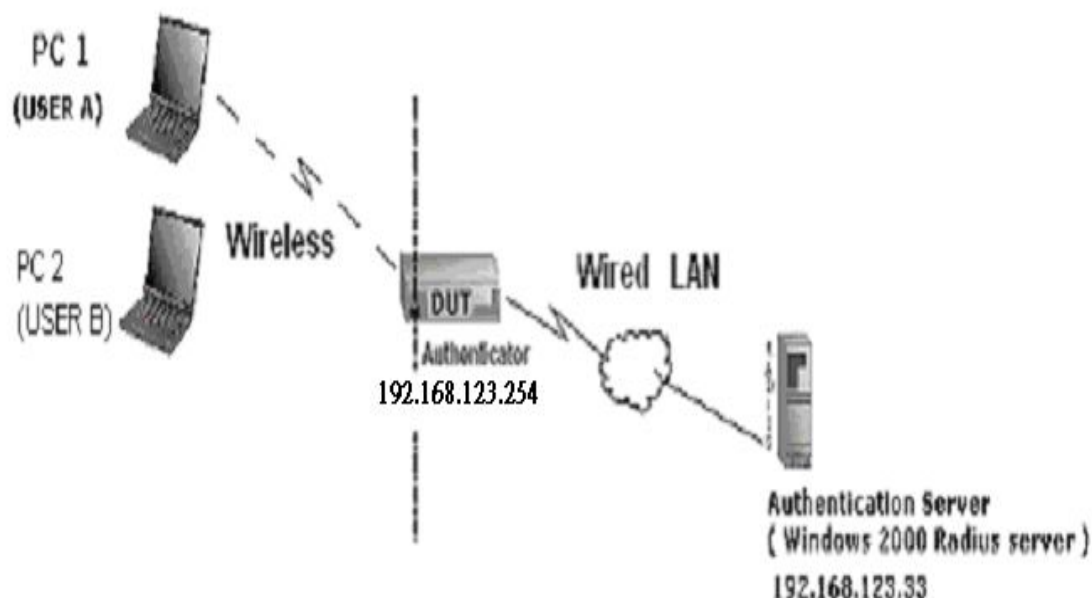


Figure 1: Testing Environment (Use Windows 2000 Radius Server)

### 1 Equipment Details

#### PC1:

Microsoft Windows XP Professional without Service Pack 1.

AMIT 531C Wireless Cardbus:3.0.3.0

Driver version:

#### PC2:

Microsoft Windows XP Professional with Service Pack 1a or latter.

AMIT 561C Wireless Cardbus:1.0.1.0

Driver version: 1.7.29.0 (Driver date: 10.20.2001)

Authentication Server: Windows 2000 RADIUS server with Service Pack 3 and HotFix Q313664.

Note. Windows 2000 RADIUS server only supports PEAP after upgrade to service pack 3 and

HotFix Q313664 (You can get more information from

<http://support.microsoft.com/default.aspx?scid=kb;en-us;313664>)

### 2 DUT

#### Configuration:

- 1.Enable DHCP server.
- 2.WAN setting: static IP address.
- 3.LAN IP address: 192.168.123.254/24.
- 4.Set RADIUS server IP.
- 5.Set RADIUS server shared key.
- 6.Configure WEP key and 802.1X setting.

The following test will use the inbuilt 802.1X authentication method such as ,EAP\_TLS, PEAP\_CHAPv2(Windows XP with SP1 only), and PEAP\_TLS(Windows XP with SP1 only) using the Smart Card or other Certificate of the Windows XP Professional.

### 3. DUT and Windows 2000 Radius Server Setup

#### 3-1-1. Setup Windows 2000 RADIUS Server

We have to change authentication method to MD5\_Challenge or using smart card or other certificate on RADIUS server according to the test condition.

#### 3-1-2. Setup DUT

- 1.Enable the 802.1X (check the “Enable checkbox“).
- 2.Enter the RADIUS server IP.
- 3.Enter the shared key. (The key shared by the RADIUS server and DUT).
- 4.We will change 802.1X encryption key length to fit the variable test condition.

#### 3-1-3. Setup Network adapter on PC

- 1.Choose the IEEE802.1X as the authentication method. (Fig 2)

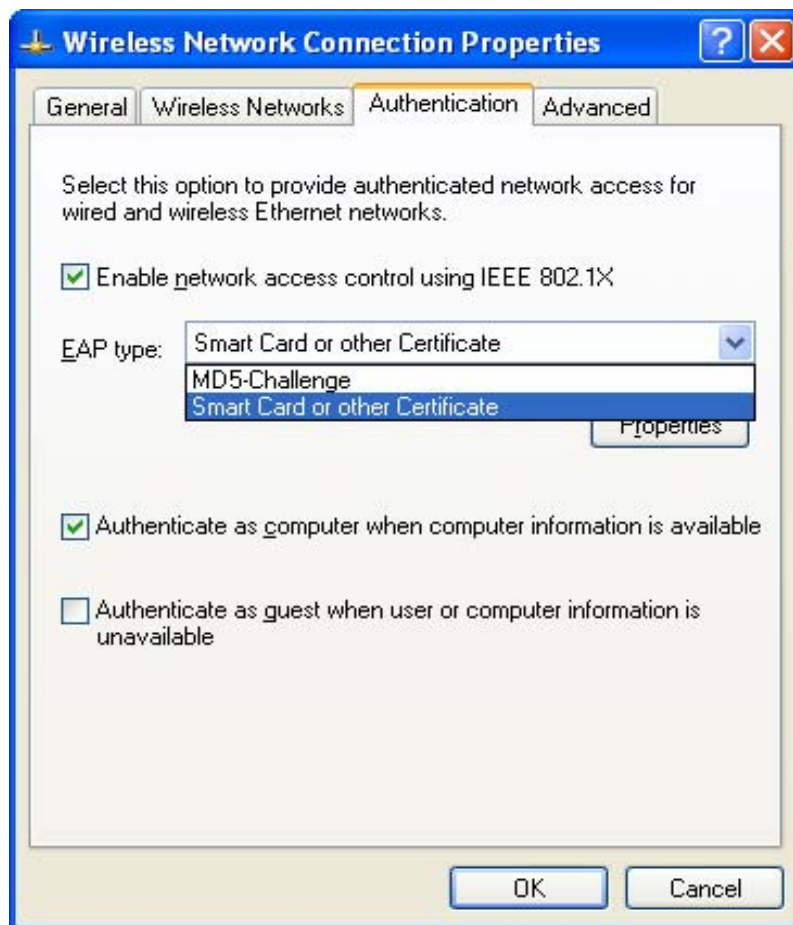
Note.

Figure 2 is a setting picture of Windows XP without service pack 1. If users upgrade to service pack 1, then they can't see MD5-Challenge from EAP type list any more, but they will get a new Protected EAP (PEAP) option.

- 2.Choose MD5-Challenge or Smart Card or other Certificate as the EAP type.
- 3.If choosing use smart card or the certificate as the EAP type, we select to use a certificate on this computer. (Fig 3)



4. We will change EAP type to fit the variable test condition.



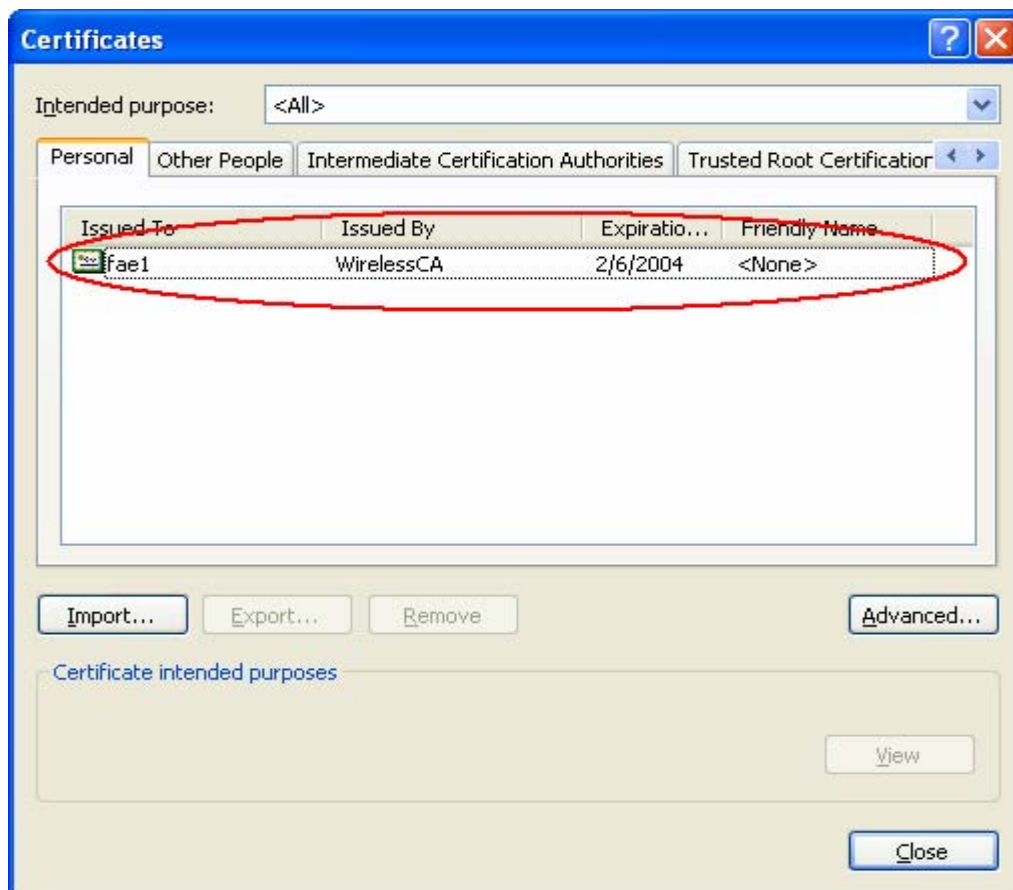
**Figure 2: Enable IEEE 802.1X access control**

**Figure 3: Smart card or certificate properties**

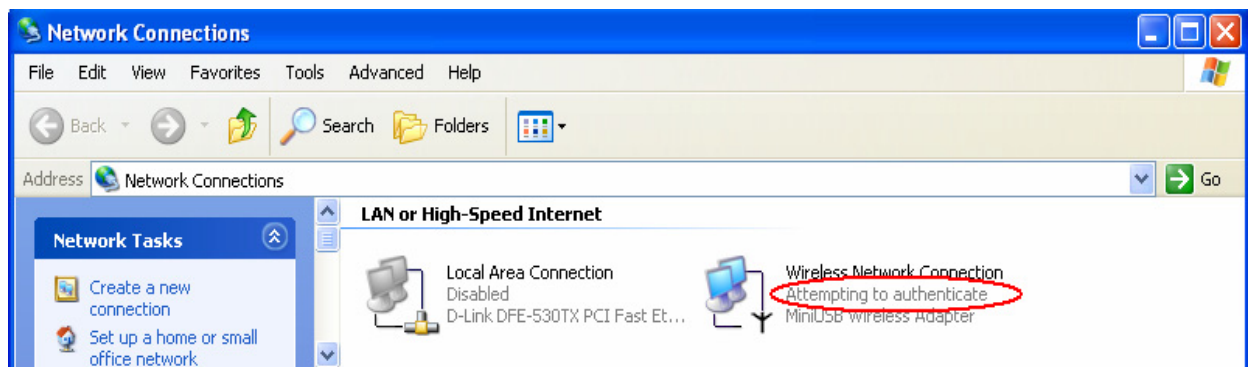
**4. Windows 2000 RADIUS server Authentication testing:**

4.1 DUT authenticate PC1 using certificate. (PC2 follows the same test procedures.)

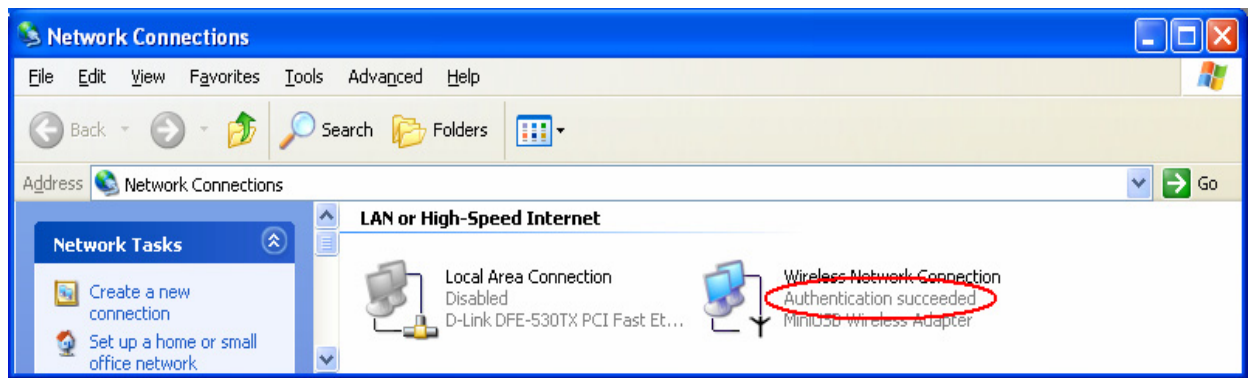
1. Download and install the certificate on PC1. (Fig 4)
2. PC1 choose the SSID of DUT as the Access Point.
3. Set authentication type of wireless client and RADIUS server both to EAP\_TLS.
4. Disable the wireless connection and enable again.
5. The DUT will send the user's certificate to the RADIUS server, and then send the message of authentication result to PC1. (Fig 5)
6. Windows XP will prompt that the authentication process is success or fail and end the authentication procedure. ( Fig 6)
7. Terminate the test steps when PC1 get dynamic IP and PING remote host successfully.



**Figure 4: Certificate information on PC1**



**Figure 5: Authenticating**



**Figure 6: Authentication success**

#### 4.2DUT authenticate PC2 using PEAP-TLS.

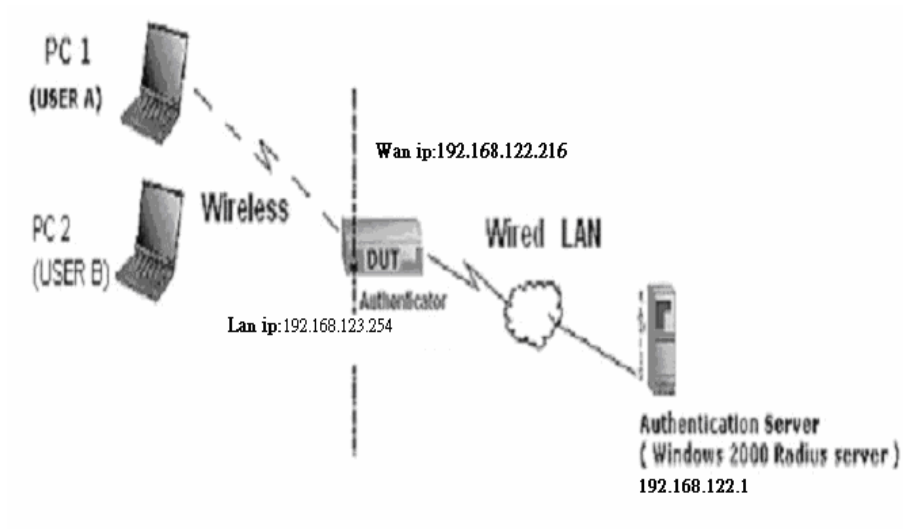
1. PC2 choose the SSID of DUT as the Access Point.
2. Set authentication type of wireless client and RADIUS server both to PEAP\_TLS.
3. Disable the wireless connection and enable again.
4. The DUT will send the user's certificate to the RADIUS server, and then send the message of authentication result to PC2.
5. Windows XP will prompt that the authentication process is success or fail and end the authentication procedure.
6. Terminate the test steps when PC2 get dynamic IP and PING remote host successfully.

**Support Type: The router supports the types of 802.1x Authentication: PEAP-CHAPv2 and PEAP-TLS.**

Note.

1. PC1 is on Windows XP platform without Service Pack 1.
2. PC2 is on Windows XP platform with Service Pack 1a.
3. PEAP is supported on Windows XP with Service Pack 1 only.
4. Windows XP with Service Pack 1 allows 802.1x authentication only when data encryption function is enable.

## Appendix C WPA-PSK and WPA



Wireless Router: LAN IP: 192.168.123.254

WAN IP: 192.168.122.216

Radius Server: 192.168.122.1

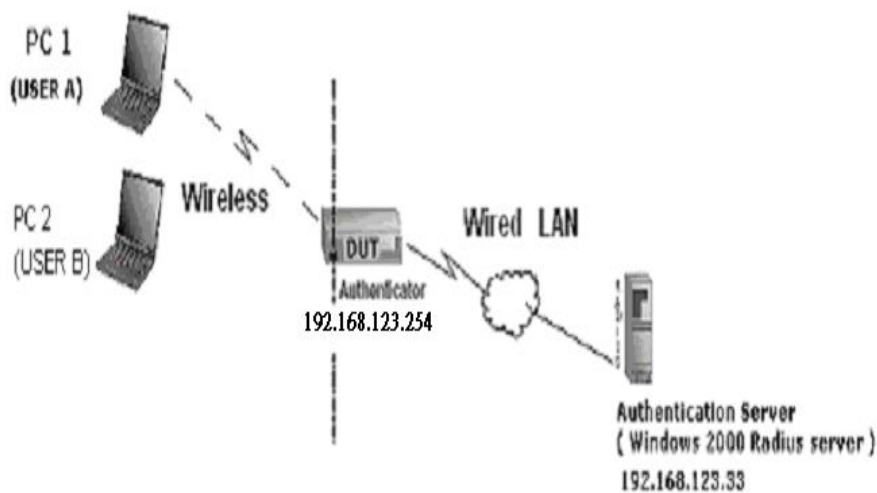
UserA : XP Wireless Card:Ti-11g

Tool: Odyssey Client Manager

Refer to: [www.funk.com](http://www.funk.com)

Download: [http://www.funk.com/News&Events/ody\\_c\\_wpa\\_preview\\_pn.asp](http://www.funk.com/News&Events/ody_c_wpa_preview_pn.asp)

Or Another Configuration:



## WPA-PSK

In fact, it is not necessary for this function to authenticate by Radius Server, the client and wireless Router authenticate by themselves.

Method1:

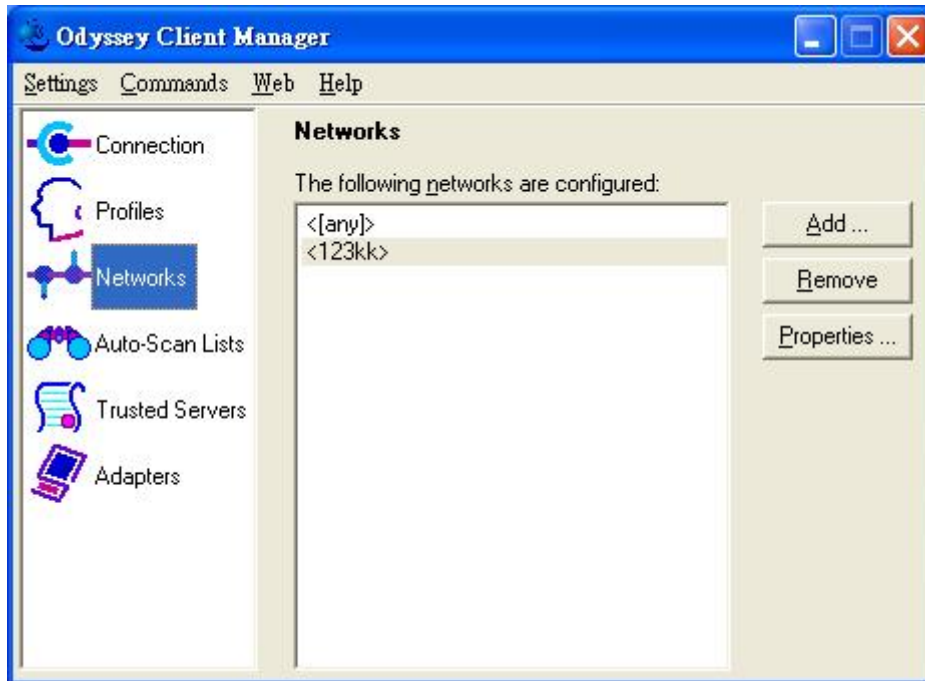
1. Go to the Web manager of Wireless Router to configure, like below:

Network ID(SSID)	123kk
Channel	8
Security	WPA-PSK
Key Mode	ASCII
Preshare Key	12345678

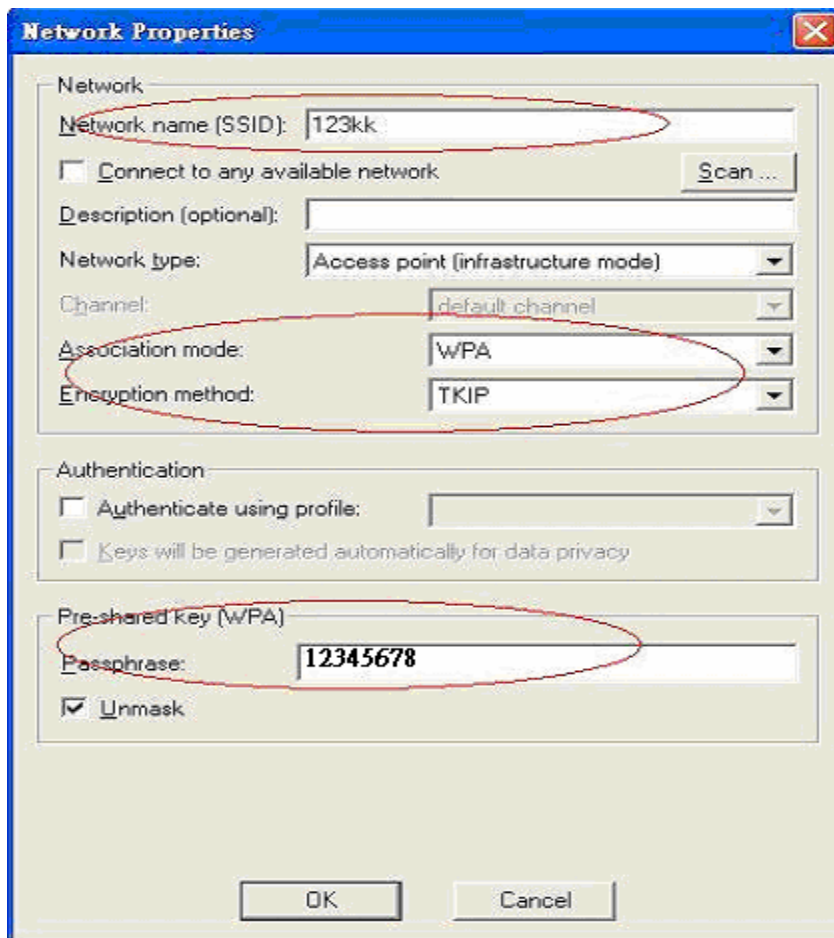
2. Go to Odyssey Client Manager, first choose "Network"

Before doing that, you should verify if the software can show the wireless card.

Open "Adapters"

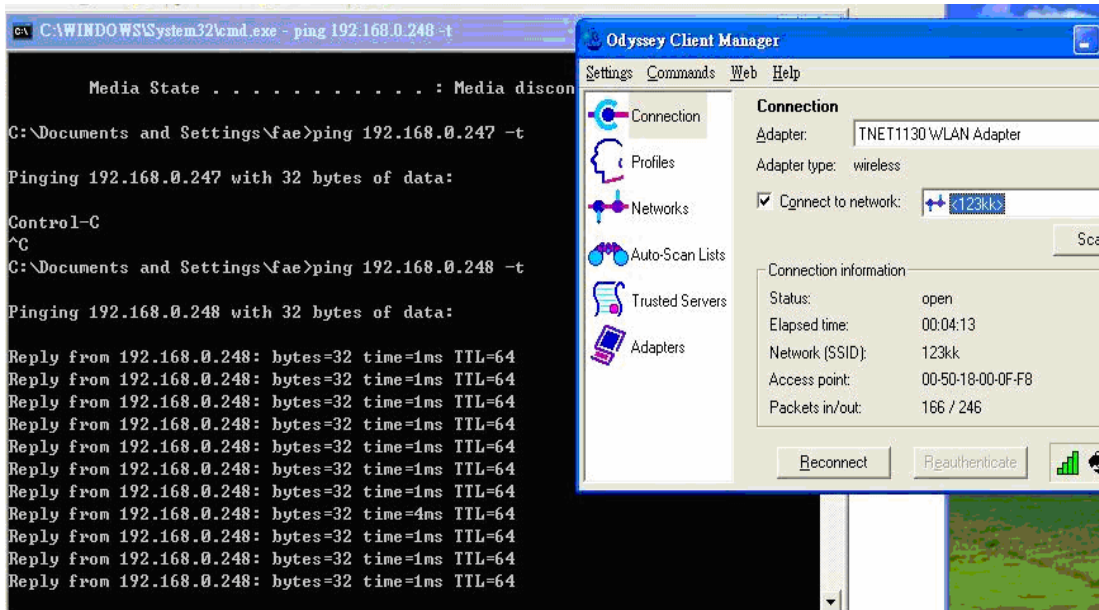


3. Add and edit some settings:



#### 4. Back to Connection:

Then Select “Connect to network” You will see:



#### Method2:

1. First, patch windows XP and have to install “Service package 1”

Patch:

<http://www.microsoft.com/downloads/details.aspx?displaylang=en&FamilyID=5039ef4a-61e0-4c44-94f0-c25c9de0ace9>

2. Then reboot.

3. Setting on the router and client:

Router:

Network ID(SSID)	123kk
Channel	8
Security	WPA-PSK
Key Mode	ASCII
Preshare Key	12345678

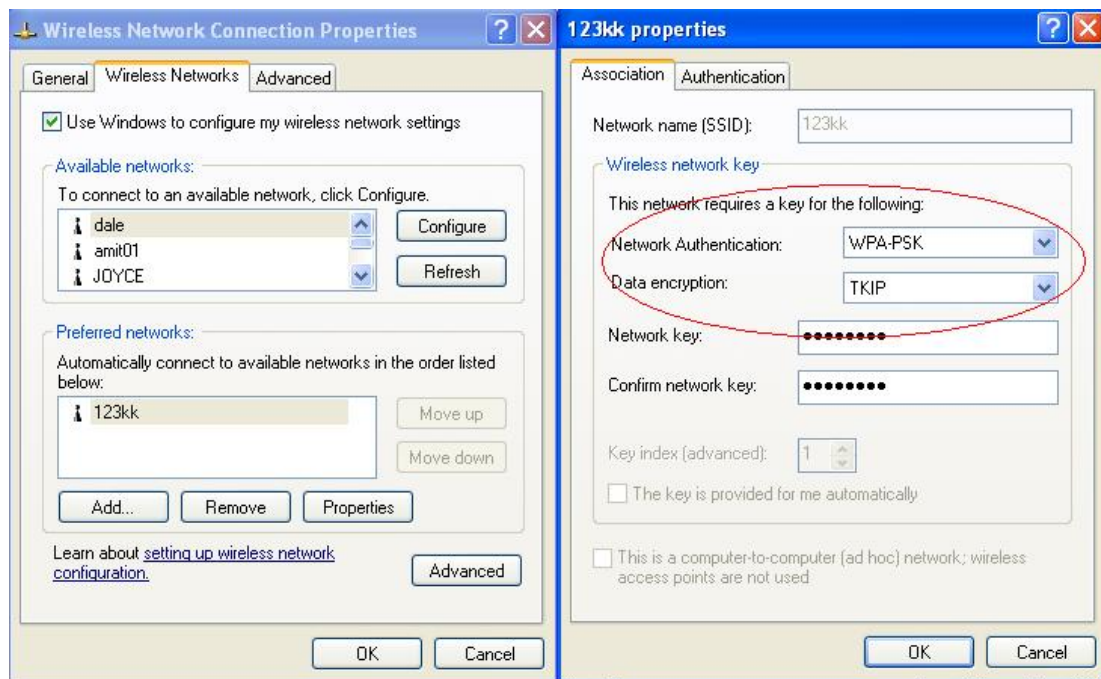
Client:

Go to “Network Connection” and select wireless adapter.



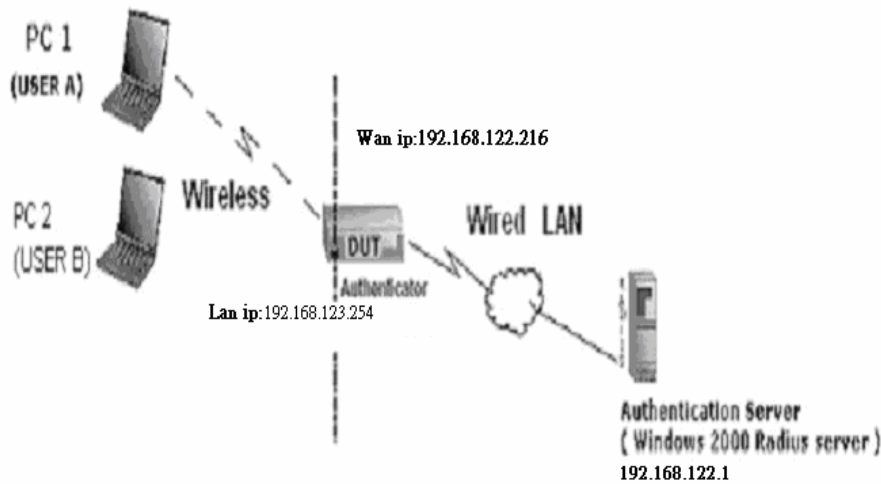
Choose “View available Wireless Networks” like below:

Advanced→ choose “123kk”



## WPA:

For this function, we need the server to authenticate. This function is like 802.1x.



The above is our environment:

Method 1:

1. The UserA or UserB have to get certificate from Radius, first.

<http://192.168.122.1/certsrv>

account : fael

passwd : fael



2. Then, Install this certificate and finish.

3. Go to the Web manager of Wireless Router to configure, like below:

Network ID(SSID)	123kk
Channel	8
Security	WPA

#### 802.1X Settings

RADIUS Server IP	192.168.122.1
RADIUS port	1812
RADIUS Shared Key	costra

4. Go to Odyssey Client Manager, choose “Profiles” and Setup Profile name as “1”

**Add Profile**

Profile name: 1

User Info | Authentication | ITLS Settings | PEAP Settings

Login name: fae1

Password

☒ Permit login using password

☐ use Windows password

☐ prompt for password

☒ use the following password:

fae1

☒ Unmask

Certificate

☒ Permit login using my certificate:

fae1

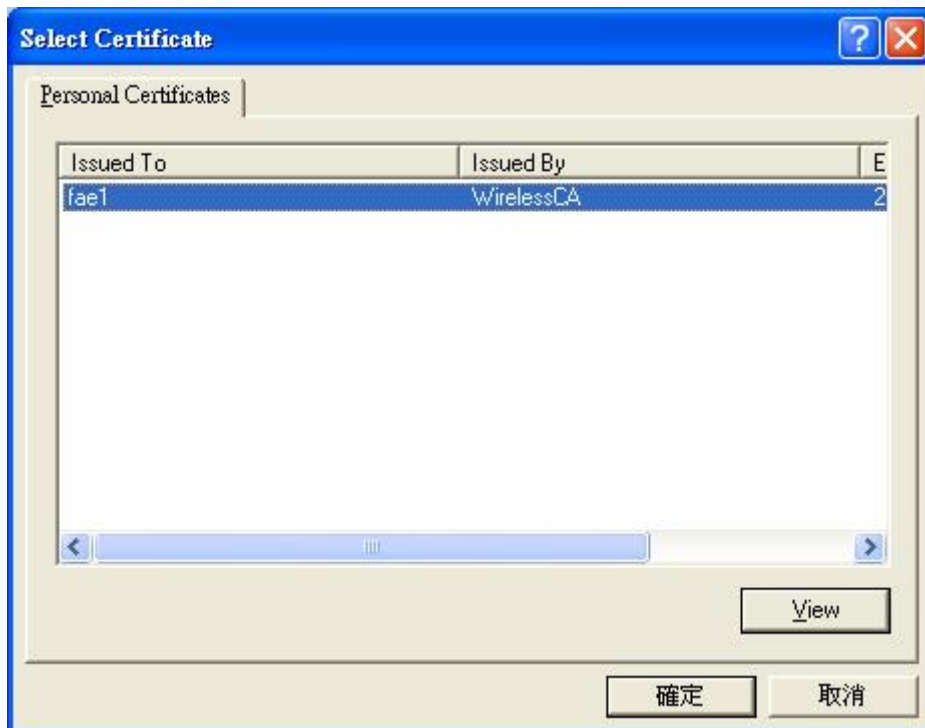
View ... Browse ...

OK Cancel

Login name and passwd are fae1 and fae1.

Remember that you get certificate from Radius in Step1.

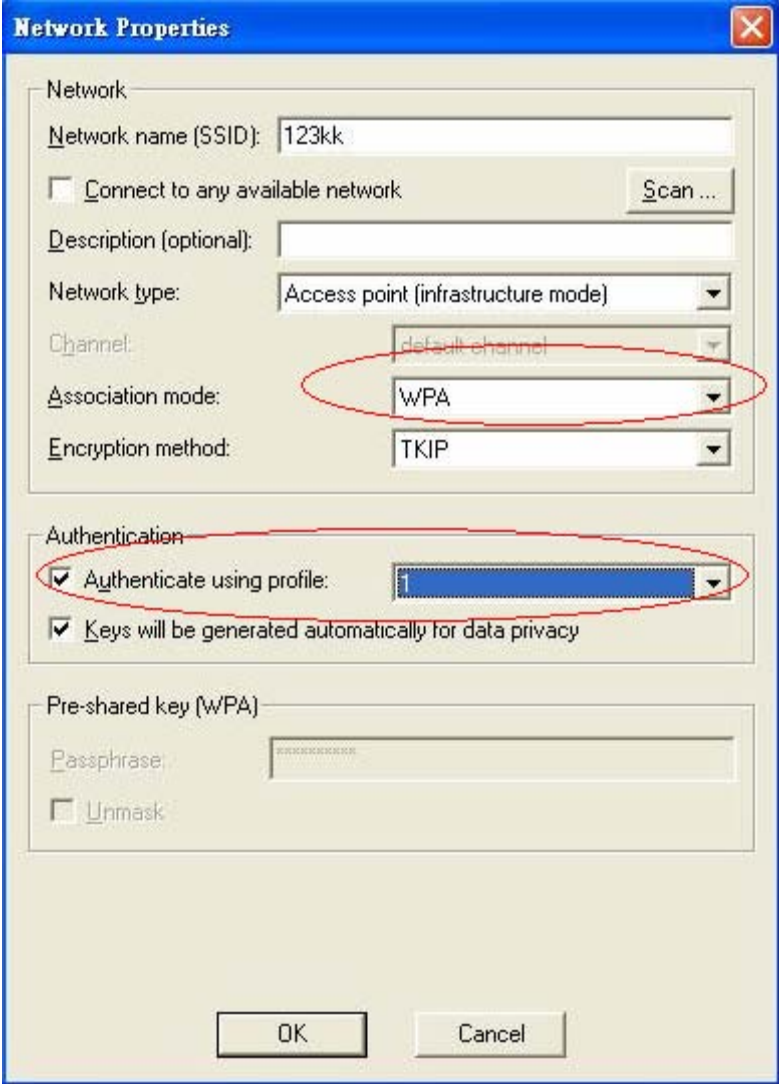
5. Then Choose “certificate” like above.



6. Then go to Authentication and first Remove EAP/ TLS and Add EAP/TLS again.



7. Go “Network” and Select “1” and ok



The image shows a Windows XP-style dialog box titled "Network Properties". It contains several sections for configuring a network connection. The "Network" section includes a text field for "Network name (SSID)" with the value "123kk", a checkbox for "Connect to any available network", a "Scan ..." button, a text field for "Description (optional)", a dropdown for "Network type" set to "Access point (infrastructure mode)", a dropdown for "Channel" set to "default channel", a dropdown for "Association mode" set to "WPA", and a dropdown for "Encryption method" set to "TKIP". The "Authentication" section has a checked checkbox for "Authenticate using profile:" with a dropdown menu, and another checked checkbox for "Keys will be generated automatically for data privacy". The "Pre-shared key (WPA)" section includes a "Passphrase:" text field with masked characters and an unchecked "Unmask" checkbox. At the bottom are "OK" and "Cancel" buttons. Red circles highlight the "Association mode" dropdown (set to WPA) and the "Authenticate using profile:" checkbox and dropdown.

**Network Properties**

Network

Network name (SSID): 123kk

☐ Connect to any available network Scan ...

Description (optional):

Network type: Access point (infrastructure mode)

Channel: default channel

Association mode: WPA

Encryption method: TKIP

Authentication

☒ Authenticate using profile:

☒ Keys will be generated automatically for data privacy

Pre-shared key (WPA)

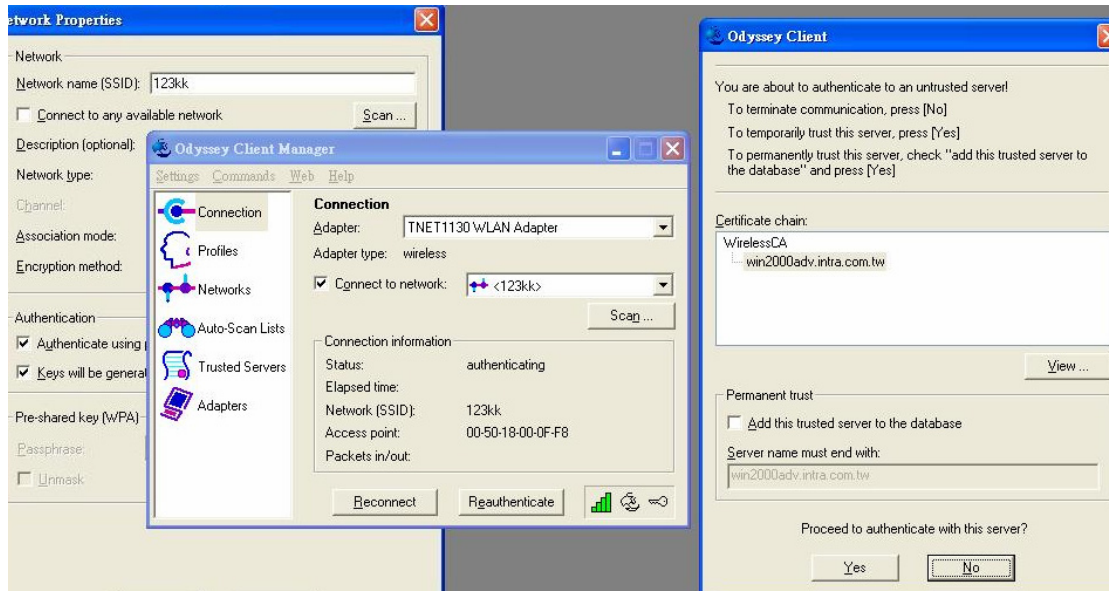
Passphrase:

☐ Unmask

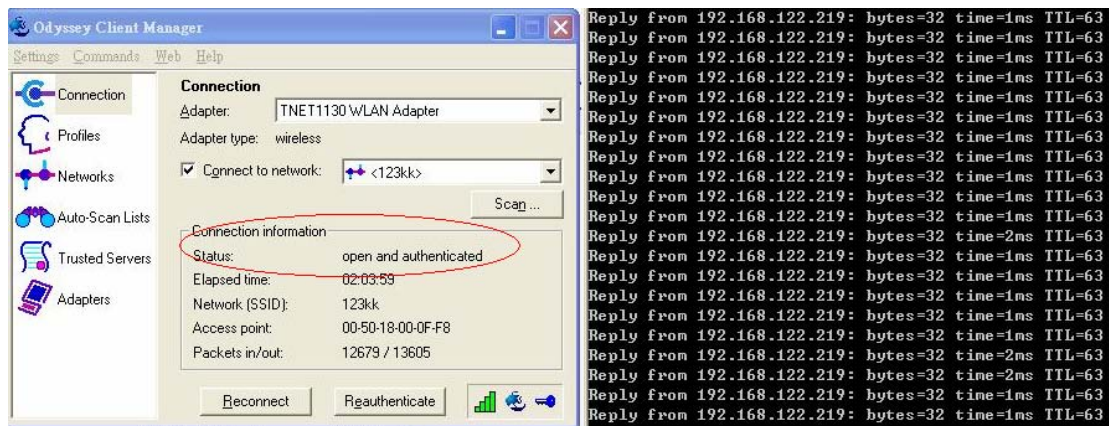
OK Cancel

8. Back to Connection and Select “123kk.

If **successfully**, the wireless client has to authenticate with Radius Server, like below:



9.Result:



Method 2:

1. The UserA or UserB have to get certificate from Radius,first.

<http://192.168.122.1/certsrv>

account:fae1

passwd:fae1



2. Then Install this certificate and finish.

3. Setting on the router and client:

Router:

Network ID(SSID)	<input type="text" value="123kk"/>
Channel	<input type="text" value="8"/>
Security	<input type="text" value="WPA"/>

#### 802.1X Settings

RADIUS Server IP	<input type="text" value="192.168.122.1"/>
RADIUS port	<input type="text" value="1812"/>
RADIUS Shared Key	<input type="text" value="costra"/>



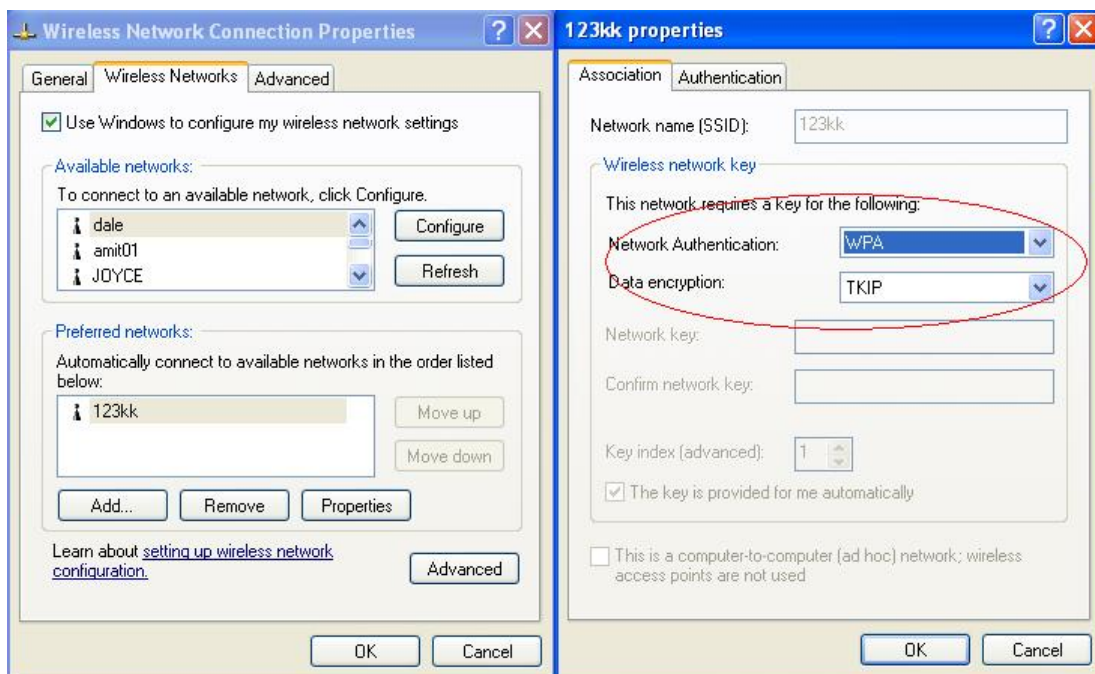
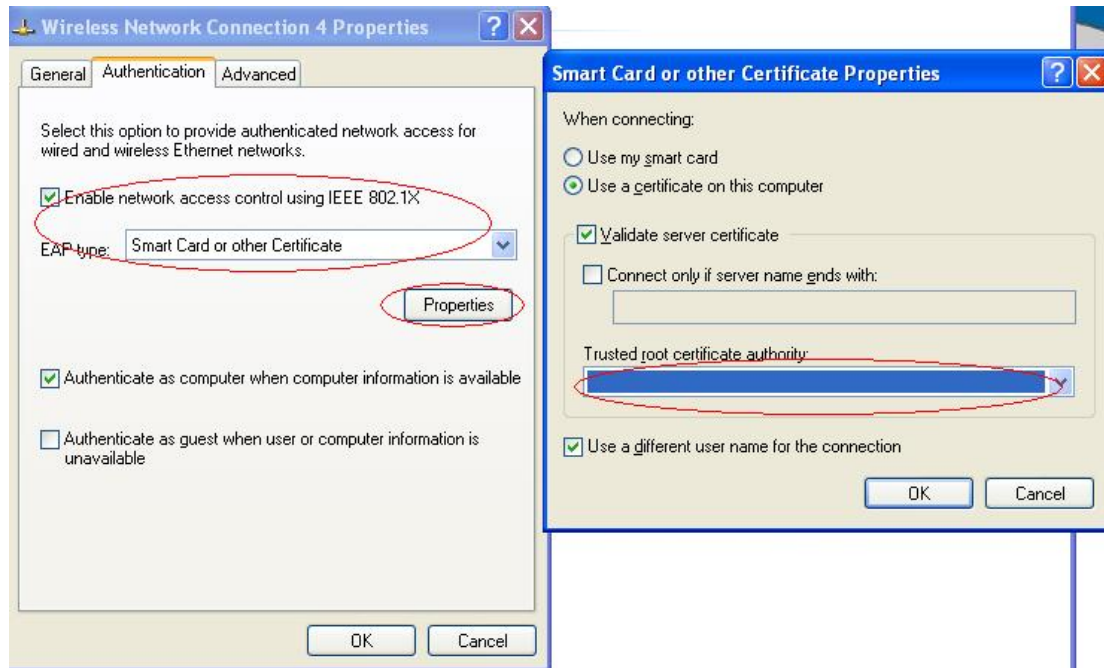
Client:

Go to “Network Connection” and select wireless adapter.

Choose “View available Wireless Networks” like below:

Advanced→ choose “123kk”

Select “WirelessCA and Enable” in Trusted root certificate authority:



Then, if the wireless client wants to associate, it has to request to authenticate.

## Appendix D FAQ and Troubleshooting

### What can I do when I have some trouble at the first time?

**1. Why can I not configure the router even if the cable is plugged in the ports of Router and the led is also light?**

**A:** First, make sure that which port is plugged. If the cable is in the Wan port, please change to plug in Lan port 1 or Lan port 4:



Then, please check if the Pc gets ip address from Router. Use command mode as below:

```
C:\>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . .               : 192.168.123.115
    Subnet Mask . . . . .             : 255.255.255.0
    Default Gateway . . . . .         : 192.168.123.254
```

If yes, please execute Browser, like Mozilla and key 192.168.123.254 in address.

If not, please ipconfig /release, then ipconfig /renew.

```
C:\>ipconfig /release

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . .               : 0.0.0.0
    Subnet Mask . . . . .             : 0.0.0.0
    Default Gateway . . . . .         : 

C:\>ipconfig /renew

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . .               : 192.168.123.115
    Subnet Mask . . . . .             : 255.255.255.0
    Default Gateway . . . . .         : 192.168.123.254
```

Whatever I setup, the pc can not get ip. Please check Status Led and refer to the Q2:

**2. Why can I not connect the router even if the cable is plugged in Lan port and**

## the led is light?

**A:** First, please check Status Led. If the device is normal, the led will blink per second.

If not, please check How blinking Status led shows.

There are many abnormal symptoms as below:

**Status Led is bright or dark in work:** The system hanged up .Suggest powering off and on the router. But this symptom often occurs, please reset to default or upgrade latest fw to try again.

**Status led flashes irregularly:** Maybe the root cause is Flash rom and please press reset Button to reset to default or try to use Recovery mode.(Refer to Q3 and Q4)

**Status flashes very fast while powering on:** Maybe the router is the recovery mode and please refer to Q4.

## 3.How to reset to factory default?

**A:** There are 2 methods to reset to default.

### 1. Restore with RESET button

First, turn off the router and press the RESET button in. And then, power on the router and push the RESET button down until the M1 and or M2 LED (or Status LED) start flashing, then remove the finger. If LED flashes about 8 times, the RESTORE process is completed. However, if LED flashes 2 times, repeat.

### 2. Restore directly when the router power on

First, push the RESET button about 5 seconds (Status will start flashing about 5 times), remove the finger. The RESTORE process is completed.

## 4.How to do recovery mode when the router is abnormal ?

**A:** Allocate a Static IP Address on your computer as below:

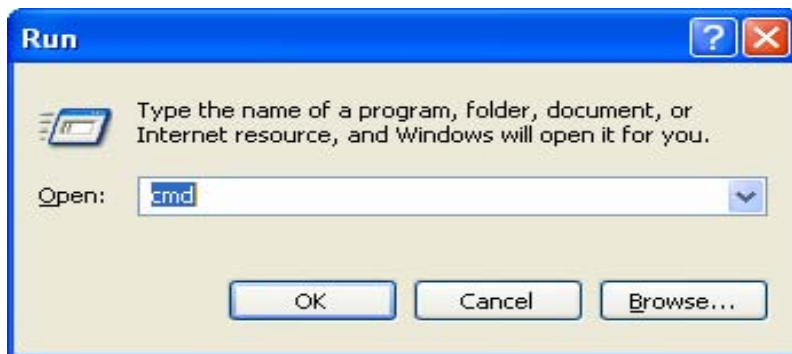
**Step1:**First, press the reset button and power on the router until Status blinks very ffast.

**Step2:**Find the **Inter Protocol(TCP/IP)** Properties from **My Network Places** and check **Properties of Local Area Network Connection**. And click the **“General”** icon and assign one **IP address** which can be from 192.168.123.1 to 192.168.123.253. Here we use the 192.168.123.88 as the IP address. The **Subnet mask** must be 255.255.255.0, and the **Default gateway** must be 192.168.123.254. Then click **“OK”** button to complete TCP/IP setup.

☐ Obtain an IP address automatically  
☒ Use the following IP address:

IP address: 192 . 168 . 123 . 88  
 Subnet mask: 255 . 255 . 255 . 0  
 Default gateway: 192 . 168 . 123 . 254

**Step2:** Open the command mode and input “cmd” then check if the router replies to ping 192.168.123.254



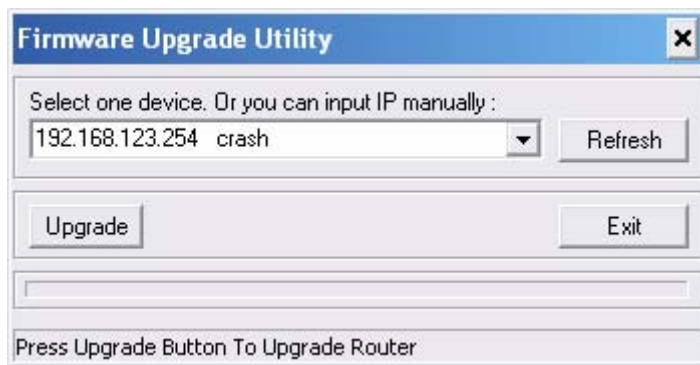
```

C:\>ping 192.168.123.254

Pinging 192.168.123.254 with 32 bytes of data:

Reply from 192.168.123.254: bytes=32 time<1ms TTL=64
Reply from 192.168.123.254: bytes=32 time<1ms TTL=64
Reply from 192.168.123.254: bytes=32 time<1ms TTL=64
  
```

**Step3:**Please use the exe-file of fw and click as below:



Then click” Upgrade” if necessary, please input password ”admin” .Then reset to default and refer to Q1 How to connect Router.

However, if those methods can not make the router normal, please send the unit to the seller to check, thanks.

**5.Why can I not connect Internet even though the cables are plugged in Wan port and Lan port and the leds are blink. In addition, Status led is also normal and I can configure web management?**

**A:** Make sure that the network cable from DSL or Cable modem is plugged in Wan port of Router and that the network cable from Lan port of router is plugged in Ethernet adapter. Then, please check which wan type you use. If you are not sure, please call the isp. Then please go to this page to input the information isp is assigned.

Choose WAN Type	
Type	Usage
<input type="radio"/> Static IP Address	ISP assigns you a static IP address.
<input checked="" type="radio"/> Dynamic IP Address	Obtain an IP address from ISP automatically.
<input type="radio"/> Dynamic IP Address with Road Runner Session Management.(e.g. Telstra BigPond)	
<input type="radio"/> PPP over Ethernet	Some ISPs require the use of PPPoE to connect to their services.
<input type="radio"/> PPTP	Some ISPs require the use of PPTP to connect to their services.
<input type="radio"/> L2TP	Some ISPs require the use of L2TP to connect to their services.

**6.When I use Static IP Address to roam Internet, I can access or ping global IP 202.93.91.218, But I can not access the site that inputs domain name, for example <http://espn.com> ?**

**A:** Please check the dns configuration of Static IP Address. Please refer to the information of ISP and assign one or two in dns item.

## How do I connect router by using wireless?

### 1.How to start to use wireless?

**A:** First, make sure that you already installed wireless client device in your computer. Then check the Configuration of wireless router. The default is as below:

Wireless Setting [ HELP ]	
Item	Setting
▶ Wireless	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
▶ Network ID(SSID)	<input type="text" value="default"/>
▶ Wireless Mode	<input type="radio"/> Mixed <input checked="" type="radio"/> 11g only
▶ SSID broadcast	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
▶ Channel	<input type="text" value="11"/> ▼
▶ Security	<input type="text" value="None"/> ▼

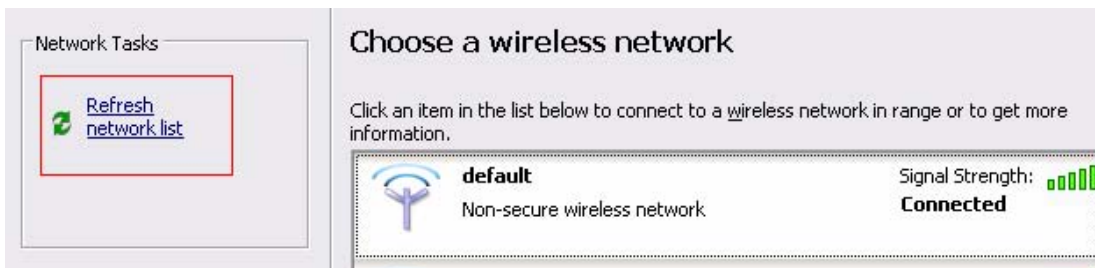
About wireless client, you will see wireless icon:



Then click and will see the ap list that wireless client can be accessed:



If the client can not access your wireless router, please refresh network list again. However, I still can not find the device which ssid is “default”, please refer to Q3.



Choose the one that you will want to connect and Connect:



If successfully, the computer will show



and get ip from router:

```

Ethernet adapter Wireless Network Connection 5:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . .               : 192.168.123.165
    Subnet Mask . . . . .             : 255.255.255.0
    Default Gateway . . . . .         : 192.168.123.254

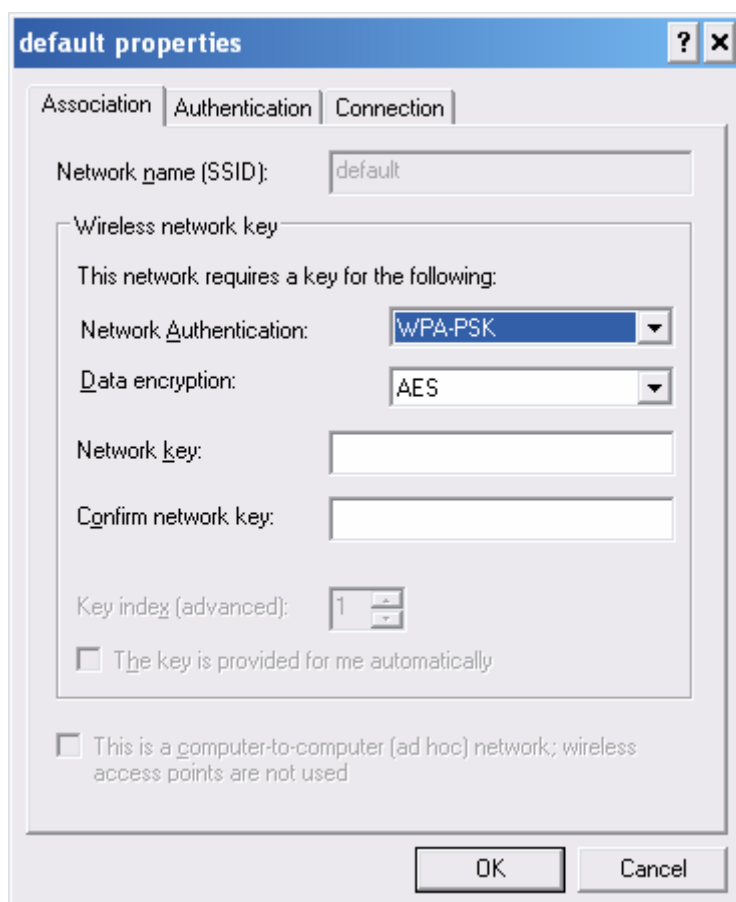
```

## 2. When I use AES encryption of WPA-PSK to connect even if I input the correct pre-share key?

**A:** First, you must check if the driver of wireless client supports AES encryption. Please refer to the below:



If SSID is default and click “Properties” to check if the driver of wireless client supports AES encryption.



**3. When I use wireless to connect the router, but I find the signal is very low even if I am close to the router?**

**A:** Please check if the wireless client is normal, first. If yes, please send the unit to the seller and verify what the problem is.

Attention :

1. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. A minimum separation distance of 20 cm between the antenna and from all persons must be maintained to satisfy the RF exposure requirements.