



VDSL2 / ADSL BRIDGE MODEM
ALL-BM200VDSL2V



USER MANUAL

NOTICE

This document contains proprietary information protected by copyright, and this Manual and all the accompanying hardware, software, and documentation are copyrighted. All rights are reserved. No part of this document may be photocopied or reproduced by mechanical, electronic, or other means in any form.

The manufacturer does not warrant that the hardware will work properly in all environments and applications, and makes no warranty or representation, either expressed or implied, with respect to the quality, performance, merchantability, or fitness for a particular purpose of the software or documentation. The manufacturer reserves the right to make changes to the hardware, software, and documentation without obligation to notify any person or organization of the revision or change.

All brand and product names are the trademarks of their respective owners.

© Copyright 2015

All rights reserved.

Default-IP
192.168.1.1

Username & Password:
admin

Content

1. Overview	4
1.1 Features.....	4
1.1.1 Data rate	4
1.1.2 DSL Compliance	4
1.1.3 Network Protocol and Features.....	4
1.1.4 ATM Capabilities	5
1.1.5 Firewall.....	5
1.1.6 Management Support.....	5
1.1.7 Operating System Support.....	5
1.1.8 Environmental	6
1.2 Packet Contents.....	6
1.3 System Requirements.....	6
1.4 Factory Defaults.....	6
1.5 Warning and Cautions	6
2. Hardware Description	8
3. Hardware Installation	9
4. PC Configuration Guide	10
4.1 For Windows 7	10
4.2 For Windows 8.....	10
4.3 For Windows XP	10
4.4 For Mac OS X	10
5. Web-Based Management Guide	11
5.1 Setting Page.....	11
5.2 Internet Access Configuration.....	11
5.2.1 Quick Setup Routing	11
5.2.2 ADSL Setup	13
5.2.3 VDSL Setup.....	18
5.2.4 LAN Settings	23
5.3 Management	24
5.3.1 TR069	24
5.3.2 Access Control.....	24
5.3.3 Backup	25
5.3.4 Restore Default.....	26
5.3.5 Update	26
6. Appendix: Frequently Asked Questions	27
6.1 Power, Hardware, Connections and LEDs	27
6.2 Device Access and Login	27
6.3 Internet Access.....	28
7. CE and GPL	29

1. Overview

Thank you for choosing our product. The ALL-BM200VDSL2V VDSL Router uses Broadcom's CPE solution that fully complies with DSL, DSL2, DSL2+ standards. It will provide your SOHO with convenient Internet access.

1.1 Features

1.1.1 Data rate

Downstream data rate up to 50 Mbps,

Upstream data rate up to 100 Mbps

1.1.2 DSL Compliance

ITU G.992.1 (G.DMT)

ITU G.992.2 (G.Lite)

ITU G.994.1 (G.hs)

ITU G.992.3 (G.DMT.BIS)

ITU G.992.4 (G.lite.bis)

ITU G.992.5

Compatible with all T1.413 issue 2 (full rate DMT over analog POTS), and CO DSLAM equipment

TR-069 compliant with ACS

1.1.3 Network Protocol and Features

Ethernet to DSL Self-Learning Transparent Bridging

Internet Control Message Protocol (ICMP)

IP Static Routing

Routing Information Protocol (RIP, RIPv2)

Network Address Translation (NAT)

Virtual Server, Port Forwarding

DDNS

Simple Network Time Protocol (SNTP)

VPN pass-through (IPSec/PPTP/L2TP)

Parent control

1.1.4 ATM Capabilities

RFC 1483 Multi-protocol over ATM "Bridged Ethernet" compliant

RFC 2364 PPP over ATM compliant

RFC 2516 PPP over Ethernet compliant

ATM Forum UNI3.1/4.0 PVC

VPI Range: 0-255

VCI Range: 32-65535

UNI 3.0 & 3.1 Signaling

ATM AAL5 (Adaption Layer type 5)

OAM F4/F5

1.1.5 Firewall

Built-in NAT

MAC Filtering

Packet Filtering

Stateful Packet Inspection (SPI)

Denial of Service Prevention (DoS)

DMZ

1.1.6 Management Support

Web Based GUI

Upgrade or update via FTP/HTTP

Command Line Interface via Telnet

Diagnostic Test

Firmware upgrade-able for future feature enhancement

1.1.7 Operating System Support

WINDOWS 98/SE/ME/2000/XP/VISTA/7/8

Macintosh

LINUX

1.1.8 Environmental

Operating humidity: 10%-90% non-condensing

Non-operating storage humidity: 5%-95% non-condensing

1.2 Packet Contents

1x ALL-BM200VDSL2V

1x TAE-Adapter

1x Power Adapter

1x Telephone Line

1x Ethernet Cable

1x CD

1.3 System Requirements

Before using this ROUTER, verify that you meet the following requirements:

Subscription for DSL service. Your DSL service provider should provide you with at least one valid IP address (static assignment or dynamic assignment via dial-up connection).

One or more computers, each contains an Ethernet 10/100M Base-T network interface card (NIC).

A hub or switch, if you are connecting the device to more than one computer.

For system configuration using the supplied web-based program: A web browser such as Internet Explorer v5.0 or later, or Netscape v4.7 or later.

1.4 Factory Defaults

The device is configured with the following factory defaults:

IP Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Encapsulation: LLC/SNAP-BRIDGING or VC/MUX

VPI/VCI: According to local information

1.5 Warning and Cautions

Never install telephone wiring during storm. Avoid using a telephone during an electrical storm. There might be a risk of electric shock from lightening.

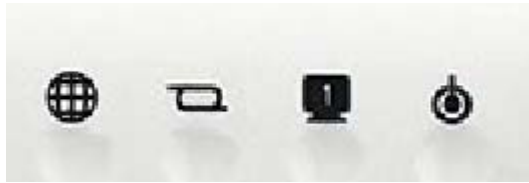
Do not install telephone jacks in wet locations and never use the product near water.





To prevent dangerous overloading of the power circuit, be careful about the designed maximum power load ratings. Not to follow the rating guideline could result in a dangerous situation.

Please note that telephone line on modem must adopt the primary line that directly outputs from junction box. Do not connect Router to extension phone. In addition, if your house developer divides a telephone line to multi sockets inside the wall of house, please only use the telephone that has connected with the splitter of DSL Router when you access the Internet. Under the above condition, if you also install telephone with anti-cheat-dial device, please pull out this kind of telephone, otherwise DSL Router may occur frequently off-line.

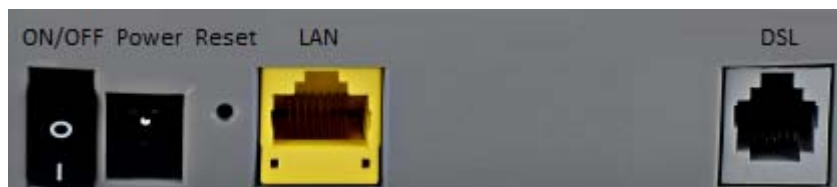
2. Hardware Description

Front Panel



LED	Color	Function
	Green	On: Power on Off: No power
	Green	On: LAN link established and active via LAN port Blinking: DSL data activity occurs Off: No LAN link via LAN port
	Green	On: DSL link established and active Quick Blinking: DSL is trying to establish a connection Slow Blinking: No DSL link
	Green	On: IP connected Blinking: IP connected and IP traffic is passing through the device Off: Modem power off or DSL connection not present

Rear Panel



Port	Function
DSL	Connect the device to an DSL telephone jack or splitter by using a RJ11 telephone cable.
ETH	Connect the device to users PCs ethernet port or to the uplink port on users hub/switch by using a RJ45 cable
Reset	System reset or reset to factory defaults
ON/OFF	Switch it on or off
Power	Connect tot he supplied power adapter

3. Hardware Installation

This chapter shows the user how to connect the Router. Meanwhile, it introduces the appropriate environment for the Router and installation instructions.

1. Using a telephone line to connect the **DSL** port of ROUTER to the **Modem** port of the splitter, and using a other telephone line connect user's telephone to the **PHONE** port of the splitter, then connect the wall phone jack to the **LINE** port of the splitter.

The splitter comes with three connectors as below:

LINE: Connects to a wall phone jack (RJ-11 jack)

ROUTER: Connects to the DSL jack of ROUTER

PHONE: Connects to a telephone set

2. Using an Ethernet Cable to connect the LAN port of the ROUTER to user's LAN or a PC with network card installed.
3. Connect the power cable to the POWER connector on ROUTER, then plug in the power adapter to the power outlet, and then press the on-off button.

Notes: Without the splitter and certain situation, transient noise from telephone can interfere with the operation of the Router, and the Router may introduce noise to the telephone line. To prevent this from happening, a small external splitter must be connected to each telephone.

4. PC Configuration Guide

4.1 For Windows 7

1. Click **"Start -> Control Panel-> Network and Internet -> View networks status -> Change adapter settings"**
2. Right-click **Wireless Network Connection** (or Local Area connection), and then click **Properties**.
3. Select **Internet Protocol Version 4 (TCP/IPv4)**, and then click **Properties**.
4. Select **Static IP** for **IP address** 192.168.1.2, **subnet mask** 255.255.255.0, **default gateway** 192.168.1.1 and **Static DNS Server for 192.168.1.1 or 8.8.8.8**. Then click OK.

4.2 For Windows 8

1. Move your mouse to the lower right corner and click the **Search** icon in the popups.
2. Go to **Apps**, type **Control Panel** in the search box and press enter.
3. Go to **"Control Panel -> View networks status-> Change adapter settings"**
4. Right-click **Ethernet**, select **Properties**, then double-click **internet protocol version 4 (TCP/IPv4)**.
5. Select **Static IP** for **IP address** 192.168.1.2, **subnet mask** 255.255.255.0, **default gateway** 192.168.1.1 and **Static DNS Server for 192.168.1.1 or 8.8.8.8**. Then click OK.

4.3 For Windows XP

1. Click **"Start" -> Control Panel -> Network and Internet Connection -> Network Connections"**
2. Right-click **Wireless Networks Connection** (or Local Area Connection), and then click **Properties**.
3. Select **Internet Protocol (TCP/IP)**, and then click **Properties**.
4. Select **Static IP** for **IP address** 192.168.1.2, **subnet mask** 255.255.255.0, **default gateway** 192.168.1.1 and **Static DNS Server for 192.168.1.1 or 8.8.8.8**. Then click OK.

4.4 For Mac OS X

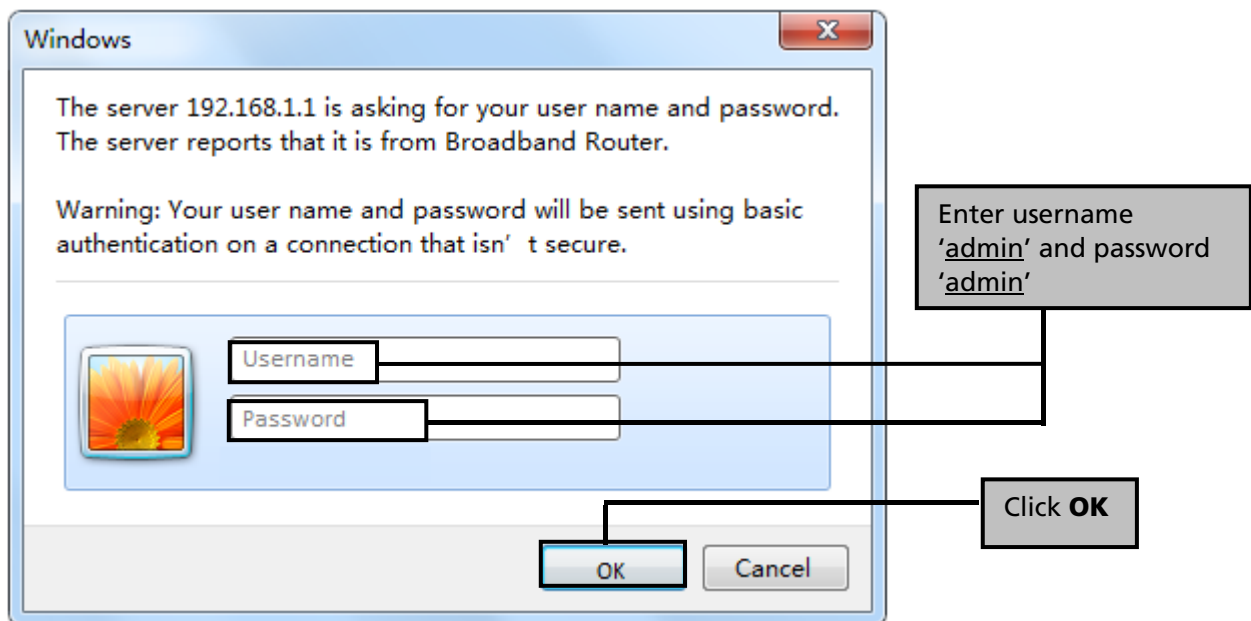
1. Click the **Apple** icon on the upper left corner of the screen.
2. Go to **"System Preference" -> Network"**.
3. Select **Airport** on the left menu bar, and then click **Advanced** for wireless configuration; or select **Ethernet** for wired configuration,
4. In the **Configure IPv4** box under TCP/IP, select **Static IP** for **IP address** 192.168.1.2, **subnet mask** 255.255.255.0, **default gateway** 192.168.1.1 and **Static DNS Server for 192.168.1.1 or 8.8.8.8**. Then click OK. Click **Apply** to save the settings at last.

5. Web-based Management Guide

In order to use the web-based management software it will be necessary to use a computer that occupies the same subnet as the Router. The simplest way to do this for many users will be to use DHCP server that is enabled by default on the Router.

5.1 Setting page

Launch a web browser, such as Internet Explorer, and then use <http://192.168.1.1> to log on to the setting pages.



We can select wizard setup or advanced setup mode to setup KD218. the wizard set up will guide us for a basic setting, and the advanced setup will guide us to home page for more detailed setup.

5.2 Internet Access Configuration

5.2.1 Quick Setup Routing

1. After log in, you will see the following screen. Click **Quick Setup** from the panel and then click **Next**.

Please select Wizard or Advanced mode

The Wizard setup walks you through the most common configuration settings. We suggest you use this mode if it is the first time you are setting up your router or if you need to make basic configuration changes.

Use Advanced mode if you need access to more advanced features not included in Wizard mode.

- ☒ **Go to Wizard setup**
- ☐ **Go to Advanced setup**
- ☐ **Click here to always start with the Advanced setup.**

Apply

Exit

- Then Select Layer2 Interface ADSL over ATM (ADSL Setup) or PTM (VDSL Setup).
- If your ISP provide ATM mode please input VPI/VCI parameters.

Internet Configuration

ISP Parameters for Internet Access

Please verify the following settings with your Internet Service Provider (ISP). Your ISP may have given you a welcome letter or network setup letter including this information.

Layer2 Interface Type: ADSL over ATM
Select the Layer2 Interface Type used by your ISP. Select ADSL will use ATM mode, Select VDSL will use PTM mode.

WAN service type: PPPoE
Select the WAN service type used by your ISP.

Virtual Circuit ID
VPI: [0-255] 0

VCI: [32-65535] 35
Select the VPI (Virtual Path Identifier) and VCI (Virtual Channel Identifier) used by your ISP.

Please enter the User Name and Password given to you by your Internet Service Provider here. If your ISP gave you a Service Name, enter it in the third field.

PPP Username:

PPP Password:

Continue to Wireless Setup wizard? ☒ Yes ☐ No

Note:
Device is automatically configured to obtain an IP address automatically. The ISP will assign you a different one each time you connect to the Internet.

<Back

Next >

Exit

Then select WAN service and input PPP configuration. Most ISP provides PPP username and password. Then click **Next**.

Internet Configuration

ISP Parameters for Internet Access

Please verify the following settings with your Internet Service Provider (ISP). Your ISP may have given you a welcome letter or network setup letter including this information.

Layer2 Interface Type: ADSL over ATM
Select the Layer2 Interface Type used by your ISP. Select ADSL will use ATM mode, Select VDSL will use PTM mode.

WAN service type: PPPoE
Select the WAN service type used by your ISP.

Virtual Circuit ID
VPI: [0-255]

VCI: [32-65535]
Select the VPI (Virtual Path Identifier) and VCI (Virtual Channel Identifier) used by your ISP.

Please enter the User Name and Password given to you by your Internet Service Provider here. If your ISP gave you a Service Name, enter it in the third field.

PPP Username:

PPP Password:

Continue to Wireless Setup wizard? ☒ Yes ☐ No

Note:
Device is automatically configured to obtain an IP address automatically. The ISP will assign you a different one each time you connect to the Internet.

<Back

Next >

Exit

- If your ISP provides PTM Mode, please choose 'ADSL/VDSL over PTM' in 'Select Layer2 Interface'. Then select 'WAN service type' and input PPP configuration. Most ISP provides PPP username and password. Then click **Next**.

Internet Configuration

ISP Parameters for Internet Access

Please verify the following settings with your Internet Service Provider (ISP). Your ISP may have given you a welcome letter or network setup letter including this information.

Layer2 Interface Type:

Select the Layer2 Interface Type used by your ISP. Select ADSL will use ATM mode, Select VDSL will use PTM mode.

ADSL/VDSL over PTM

WAN service type:

Select the WAN service type used by your ISP.

PPPoE

Please enter the User Name and Password given to you by your Internet Service Provider here. If your ISP gave you a Service Name, enter it in the third field.

PPP Username:

12345677

PPP Password:

Continue to Wireless Setup wizard?

Note:

Device is automatically configured to obtain an IP address automatically. The ISP will assign you a different one each time you connect to the Internet.

☒ Yes

☐ No

<Back

Next >

Exit

3. Then check your configuration is OK, click **Apply/Save**.

CONGRATULATIONS

The Internet/Wireless Setup configuration is complete. Here are your current settings.

Internet Settings

Layer2 Interface Type:

ADSL/VDSL over PTM

WAN service type:

PPPoE

PPP Username:

12345678

PPP Password:

12345678

Press "Apply/Save" button to finish this wizard configuration, or give up the config and click the following link to open other pages.

1. [Return to Wizard Main Page](#)

2. [Go to Advanced Setup Page](#)

<Back

Apply/Save >

5.2.2 ADSL Setup

From home page, you can find **Advanced Setup** option on the left router configuration page. Delete all the **WAN Services & ATM, PTM Interface**.

1. From **Layer2 Interface**, click **ATM Interface**. You can set it up according to the following steps. You Choose **Add** or **Remove** to configure DSL ATM interfaces.

Interface	Vpi	Vci	DSL Latency	Category	Peak Cell Rate (cells/s)	Sustainable Cell Rate(cells/s)	Max Burst Size (bytes)	Link Type	Conn Mode	IP QoS	MPAAL Prec/Alg/Wght	Remove
-----------	-----	-----	-------------	----------	--------------------------	--------------------------------	------------------------	-----------	-----------	--------	---------------------	--------

Add

Remove

2. Click **Add** to configure PVC identifier, select DSL latency and select connection mode according to your local occasion. After the configuration, you need to click **Apply/Save**.

VPI: [0-255]

VCI: [32-65535]

Select DSL Latency

☒ Path0

☐ Path1

Select DSL Link Type (EoA is for PPPoE, IPoE, and Bridge.)

☒ EoA

☐ PPPoA

☐ IPoA

Select Connection Mode

☒ Default Mode - Single service over one connection

☐ VLAN MUX Mode - Multiple Vlan service over one connection

Encapsulation Mode:

LLC/SNAP-BRIDGING

Service Category:

UBR Without PCR

3. Click **WAN Service** from the left menu.

Interface	Description	Type	Vlan8021p	VlanMuxId	Icmp	NAT	Firewall	IPv6	Mld	Remove	Edit
-----------	-------------	------	-----------	-----------	------	-----	----------	------	-----	--------	------

4. Click **Add** to select a layer 2 interface for this service and then click **Next**.

atm0/ (0_0_35)

5. Choose WAN service type, just choose PPPoE for example here. You can enter your own service description here if you want and then click **Next**.

Select WAN service type:

☒ PPP over Ethernet (PPPoE)

☐ IP over Ethernet

☐ Bridging

Enter Service Description:


pppoe_0_0_35

6. Input **PPP Username & PPP Password** and then click **Next**. The user interface allows a maximum of 256 characters in the user name and a maximum of 32 characters in the password.

PPP Username:

PPP Password:

PPPoE Service Name:

Authentication Method: 

☐ Enable Fullcone NAT

☐ Dial on demand (with idle timeout timer)

☐ PPP IP extension

☐ Use Static IPv4 Address

☐ Enable PPP Debug Mode

☐ Bridge PPPoE Frames Between WAN and Local Ports

Multicast Proxy

☐ Enable IGMP Multicast Proxy

☐ No Multicast VLAN Filter

PPPoE service name can be blank unless your Internet Service Provider gives you a value to enter.

Authentication method is default to **Auto**. It is recommended that you leave the **Authentication method** in **Auto**, however, you may select **PAP** or **CHAP** if necessary. The default value for MTU (Maximum Transmission Unit) is **1500** for PPPoA and **1492** for PPPoE. Do not change these values unless your ISP asks you to.

Enable Full Cone NAT: In full cone NAT, all requests from the same private IP address and port are mapped to the same public source IP address and port. Someone on the Internet only needs to know the mapping scheme in order to send packets to a device behind the VDSL Device.

The gateway can be configured to disconnect if there is no activity for a specific period of time by selecting the **Dial on demand** check box and entering the **Inactivity timeout**. The entered value must be between 1 minute and 4320 minutes.

Use Static IPv4 address: If the ISP gave you a static (fixed) IP address, select this option and enter it in the IP Address field. If the ISP did not give you a static IP address, clear the Use Static IP Address option. The ISP automatically assigns the WAN connection an IP address when it connects.

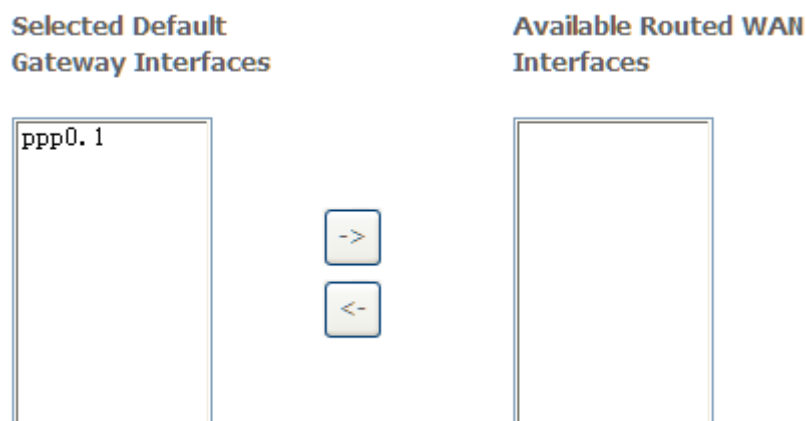
Enable PPP Debug Mode: Select this to turn on the debug mode for the PPP connection.

Bridge PPPoE Frames Between WAN and Local Ports: In addition to the VDSL Device's built-in PPPoE client, you can enable this to pass PPPoE through in order to allow LAN hosts to use PPPoE client software on their computers to connect to the ISP via the VDSL Device. Each host can have a separate account and a public WAN IP address. PPPoE pass through is an alternative to NAT for applications where NAT is not appropriate. Disable PPPoE pass through if you do not need to allow hosts on the LAN to use PPPoE client software on their computers to connect to the ISP.

The **PPP IP Extension** is a special feature deployed by some service providers. Unless your service provider specifically requires this setup, do not select it. If you need to select it, the PPP IP Extension supports the following conditions:

- It allows only one computer on the LAN.
- The public IP address assigned by the remote using the PPP/PCP protocol is actually not used on the WAN PPP interface. Instead, it is forwarded to the computer's LAN interface through DHCP. Only one system on the LAN can be connected to the remote, since the DHCP server within the VDSL gateway has only a single IP address to assign to a LAN device.
- NAPT and firewall are disabled when this option is selected.
- The gateway becomes the default gateway and DNS server to the computer through DHCP using the LAN interface IP address.
- The gateway extends the IP subnet at the remote service provider to the LAN computer. That is, the PC becomes a host belonging to the same IP subnet.
- The VDSL gateway bridges the IP packets between WAN and LAN ports, unless the packet is addressed to the gateway's LAN IP address.

7. Select a preferred wan interface as the system default gateway.



8. Get DNS server information from the selected WAN interface or enter static DNS server IP addresses. If only single PVC with IPoA or static MER protocol is configured, you must enter static DNS server IP addresses.

☒ **Select DNS Server Interface from available WAN interfaces:**

Selected DNS Server
Interfaces

Available WAN Interfaces

ppp0.1	->	
	<-	

☐ **Use the following Static DNS IP address:**

Primary DNS server:

Secondary DNS server:

9. Make sure that the settings below match the settings provided by your ISP. Click on the **Apply/Save** button to save your configurations.

Connection Type:	PPPoE
NAT:	Enabled
Full Cone NAT:	Disabled
Firewall:	Enabled
IGMP Multicast:	Disabled
Quality Of Service:	Enabled

10. Then you will see the following screen at **Device Info**.

WAN Information	
- WAN Type:	
- WAN service type:	
- IP Address:	
- Primary DNS server:	
- Secondary DNS server:	
- Default Gateway:	
- Default IPv6 Gateway:	
LAN Information	
- LAN IPv4 Address:	192.168.1.1
- IPv4 Subnet Mask:	255.255.255.0
- LAN IPv6 ULA Address:	
Wireless Information	
- Status:	Enabled
- SSID:	WLAND19BE9
- Chanel:	Auto(Current: 1)
- Security:	WPA2 -PSK
- WPS:	Disabled

5.2.3 VDSL Setup

From home page, you can find **Advanced Setup** option on the left router configuration page. Delete all the **WAN Services & ATM, PTM Interface** first.

1. From **Layer2 Interface**, click **PTM Interface**. You can set it up according to the following steps. You Choose **Add** or **Remove** to configure DSL PTM interfaces.

Interface	DSL Latency	PTM Priority	Conn Mode	IP QoS	Remove
<div style="text-align: center;"> <input type="button" value="Add"/> <input type="button" value="Remove"/> </div>					

2. Click **Add** to configure **PTM Priority**, select DSL latency and select connection mode according to your local occasion. After the configuration, you need to click **Apply/Save**.

Select DSL Latency

- ☒ Path0 (Fast)
☐ Path1 (Interleaved)

Select Scheduler for Queues of Equal Precedence as the Default Queue

- ☒ Weighted Round Robin
☐ Weighted Fair Queuing

Default Queue Weight: [1-63]

Default Queue Precedence: [1-8] (lower value, higher priority)

Default Queue Shaping Rate: [Kbits/s] (blank indicates no shaping)

Default Queue Shaping Burst Size: [bytes] (shall be >=1600)

3. Click **WAN Service** from the left menu.

Interface	Description	Type	Vlan8021p	VlanMuxId	Igmp	NAT	Firewall	IPv6	Mld	Remove	Edit
-----------	-------------	------	-----------	-----------	------	-----	----------	------	-----	--------	------

4. Click **Add** to select a layer 2 interface for this service and then click **Next**.

ptm0/(0_1_1) ▼


5. Choose WAN service type, just choose PPPoE for example here. You can enter your own service description here if you want and then click **Next**.

Select WAN service type:

- ☒ PPP over Ethernet (PPPoE)
☐ IP over Ethernet
☐ Bridging

Enter Service Description:

6. Input **PPP Username** & **PPP Password** and then click **Next**. The user interface allows a maximum of 256 characters in the user name and a maximum of 32 characters in the password.

PPP Username:
 PPP Password:
 PPPoE Service Name:
 Authentication Method: 

☐ Enable Fullcone NAT

☐ Dial on demand (with idle timeout timer)

☐ PPP IP extension

☐ Use Static IPv4 Address

☐ Enable PPP Debug Mode

☐ Bridge PPPoE Frames Between WAN and Local Ports

Multicast Proxy

☐ Enable IGMP Multicast Proxy

☐ No Multicast VLAN Filter

PPPoE service name can be blank unless your Internet Service Provider gives you a value to enter.

Authentication method is default to **Auto**. It is recommended that you leave the **Authentication method** in **Auto**, however, you may select **PAP** or **CHAP** if necessary. The default value for MTU (Maximum Transmission Unit) is **1500** for PPPoA and **1492** for PPPoE. Do not change these values unless your ISP asks you to.

Enable Full Cone NAT: In full cone NAT, all requests from the same private IP address and port are mapped to the same public source IP address and port. Someone on the Internet only needs to know the mapping scheme in order to send packets to a device behind the VDSL Device.

The gateway can be configured to disconnect if there is no activity for a specific period of time by selecting the **Dial on demand** check box and entering the **Inactivity timeout**. The entered value must be between 1 minute and 4320 minutes.

Use Static IPv4 address: If the ISP gave you a static (fixed) IP address, select this option and enter it in the IP Address field. If the ISP did not give you a static IP address, clear the Use Static

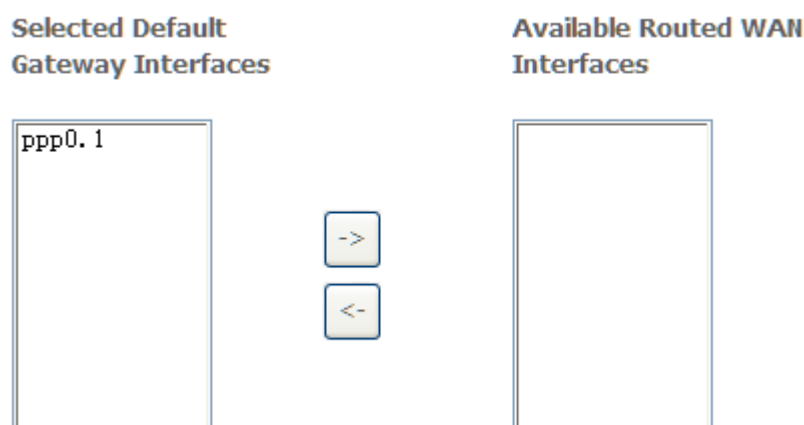
IP Address option. The ISP automatically assigns the WAN connection an IP address when it connects.

Enable PPP Debug Mode: Select this to turn on the debug mode for the PPP connection.

Bridge PPPoE Frames Between WAN and Local Ports: In addition to the VDSL Device's built-in PPPoE client, you can enable this to pass PPPoE through in order to allow LAN hosts to use PPPoE client software on their computers to connect to the ISP via the VDSL Device. Each host can have a separate account and a public WAN IP address. PPPoE pass through is an alternative to NAT for applications where NAT is not appropriate. Disable PPPoE pass through if you do not need to allow hosts on the LAN to use PPPoE client software on their computers to connect to the ISP.

The **PPP IP Extension** is a special feature deployed by some service providers. Unless your service provider specifically requires this setup, do not select it. If you need to select it, the PPP IP Extension supports the following conditions:

- a. It allows only one computer on the LAN.
 - b. The public IP address assigned by the remote using the PPP/IPCP protocol is actually not used on the WAN PPP interface. Instead, it is forwarded to the computer's LAN interface through DHCP. Only one system on the LAN can be connected to the remote, since the DHCP server within the VDSL gateway has only a single IP address to assign to a LAN device.
 - c. NAT and firewall are disabled when this option is selected.
 - d. The gateway becomes the default gateway and DNS server to the computer through DHCP using the LAN interface IP address.
 - e. The gateway extends the IP subnet at the remote service provider to the LAN computer. That is, the PC becomes a host belonging to the same IP subnet.
 - f. The VDSL gateway bridges the IP packets between WAN and LAN ports, unless the packet is addressed to the gateway's LAN IP address.
7. Select a preferred wan interface as the system default gateway.



8. Get DNS server information from the selected WAN interface or enter static DNS server IP addresses. If only a single PVC with IPoA or static MER protocol is configured, you must enter static DNS server IP addresses.

☒ **Select DNS Server Interface from available WAN interfaces:**

Selected DNS Server
Interfaces

Available WAN Interfaces

ppp0.1	->	
	<-	

☐ **Use the following Static DNS IP address:**

Primary DNS server:

Secondary DNS server:

9. Make sure that the settings below match the settings provided by your ISP. Click on the **Apply/Save** button to save your configurations.

Connection Type:	PPPoE
NAT:	Enabled
Full Cone NAT:	Disabled
Firewall:	Enabled
IGMP Multicast:	Disabled
Quality Of Service:	Enabled

10. Then you will see the following screen at **Device Info**.

WAN Information	
- WAN Type:	
- WAN service type:	
- IP Address:	
- Primary DNS server:	
- Secondary DNS server:	
- Default Gateway:	
- Default IPv6 Gateway:	
LAN Information	
- LAN IPv4 Address:	192.168.1.1
- IPv4 Subnet Mask:	255.255.255.0
- LAN IPv6 ULA Address:	
Wireless Information	
- Status:	Enabled
- SSID:	WLAND19BE9
- Chanel:	Auto(Current: 1)
- Security:	WPA2 -PSK
- WPS:	Disabled

5.2.4 LAN Settings

From **LAN**, Configure the DSL Router's IP Address and Subnet Mask for LAN interface. In this page.

Local Area Network (LAN) Setup

Configure the Broadband Router IP Address and Subnet Mask for LAN interface. GroupName Default ▼

IP Address:

Subnet Mask:

☒ Enable IGMP Snooping

☐ Standard Mode

☒ Blocking Mode

Enable IGMP LAN to LAN Multicast:

Disable ▼

(LAN to LAN Multicast is enabled until the first WAN service is connected, regardless of this setting.)

☐ Enable LAN side firewall

Item	Description
IP address	This is the IP address that other devices on your local network will use to connect to the modem.
Subnet mask	This defines the size of your network. The default is 255.255.255.0 .

5.3 Management

5.3.1 TR069

WAN Management Protocol (TR-069) allows a Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to this device. Select **TR-069 Configuration** from **Advanced->CWMP**.

Device Info
Quick Setup
Advanced Setup
Diagnostics
Management
Settings
System Log
Security Log
SNMP Agent
TR-069 Client
Access Control
Update Software
Reboot

TR-069 client - Configuration

WAN Management Protocol (TR-069) allows a Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to this device.

Select the desired values and click "Apply/Save" to configure the TR-069 client options.

Inform ☒ Disable ☐ Enable

Inform Interval:

ACS URL:

ACS User Name:

ACS Password:

WAN Interface used by TR-069 client:

Display SOAP messages on serial console ☒ Disable ☐ Enable

☒ Connection Request Authentication

Connection Request User Name:

Connection Request Password:

Connection Request URL:

Inform: Whether or not the CPE must periodically send CPE information to Server using the Inform method call.

Inform Interval: The duration in seconds of the interval for which the CPE MUST attempt to connect with the ACS and call the Inform method if Inform is enabled.

ACS URL: URL for the CPE to connect to the ACS using the CPE WAN Management Protocol. And through ACS (Auto-Configuration Server) you can perform auto-configuration, provision, collection, and diagnostics to this router.

ACS User Name: Username used to authenticate an ACS making a Connection Request to the CPE.

ACS Password: Password used to authenticate an ACS making a Connection Request to the CPE. When read, this parameter returns an empty string, regardless of the actual value.

WAN Interface used by TR-069 client: Remember to choose the interface of PVC used for TR069.

Connection Request User Name: Username used to authenticate the CPE when making a connection to the ACS using the CPE WAN Management Protocol. This username is used only for authentication of the CPE.

Connection Request Password: Password used to authenticate the CPE when making a connection to the ACS using the CPE WAN Management Protocol. This password is used only for authentication of the CPE.

GetRPCMethods: Used by a CPE or ACS to discover the set of methods supported by the ACS or CPE it is in communicate with.

Note: If you want to cancel all modification that you do on the Router, please select from "Admin -> Commit/Reboot -> Factory Default Configuration -> Reboot" to restore factory default settings.

5.3.2 Access Control

Access Control will let you change the password that you need to login in the router's setting page.

1. Select **Passwords** from **Management->Access Control**.

Device Info
Quick Setup
Advanced Setup
Diagnostics
Management
Settings
System Log
Security Log
SNMP Agent
TR-069 Client
Access Control
Passwords
Remote Access
Update Software
Reboot

Access Control -- Passwords

Access to your broadband router is controlled through three user accounts: admin, support, and user.

The user name "admin" has unrestricted access to change and view configuration of your Broadband Router.

The user name "support" is used to allow an ISP technician to access your Broadband Router for maintenance and to run diagnostics.

The user name "user" can access the Broadband Router, view configuration settings and statistics, as well as, update the router's software.

Use the fields below to enter up to 16 characters and click "Apply/Save" to change or create passwords. Note: Password cannot contain a space.

User Name:

Old Password:

New Password:

Confirm Password:

2. Type the user name in the **User Name**. There are 3 user name has different power to manage the router. Each of them has been shown in the screen;
3. Type in the **Old Password**;
4. Type in the **New Password** and **Confirm Password**. These two blanks should be typed in the same words;
5. Click **Apply/Save**;
6. You will see the following screen.

Message

Password change successful

Note: If you want to cancel all modification that you do on the Router, please select from "Maintenance -> Reboot -> Restore factory default settings."

5.3.3 Backup

1. You can choose **Backup** in the **Management -> Settings**. Click **Backup Settings** to storage your settings at present.
2. Choose the path where your settings want to set in.

Device Info
Quick Setup
Advanced Setup
Diagnostics
Management
Settings
Backup
Update
Restore Default
System Log
Security Log
SNMP Agent
TR-069 Client
Access Control
Update Software
Reboot

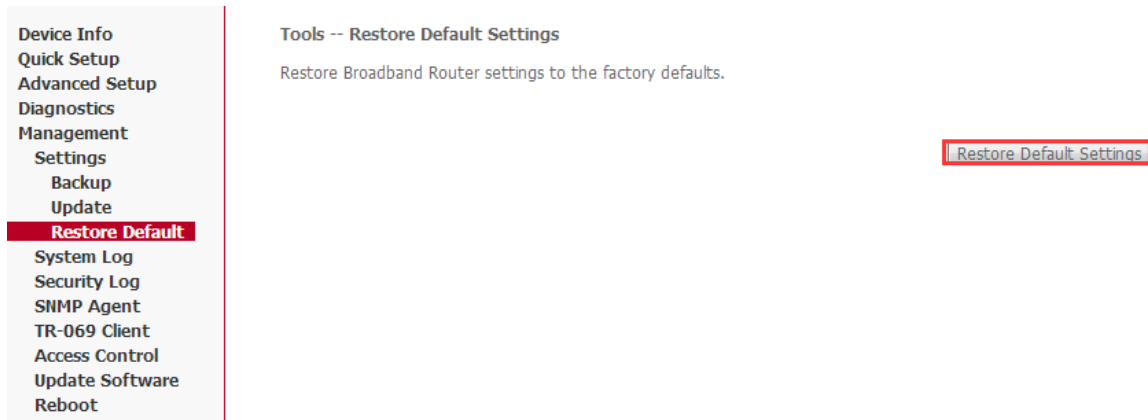
Settings - Backup

Backup Broadband Router configurations. You may save your router configurations to a file on your PC.

Note: If you want to cancel all modification that you do on the Router, please select from "Maintenance -> Reboot -> Restore factory default settings."

5.3.4 Restore Default

1. You can release the ball-point after about 5 seconds.
2. You can go to Restore Default at Management and click Restore Default Settings and wait until the router reboot it again.



Note: After you have then completed the full-reset. Your VDSL router will now have its factory default settings. IP address will be 192.168.1.1 and the subnet mask will be 255.255.255.0. User name will be admin and password will be admin.

5.3.5 Update

1. You can update your firmware at Update in **Management-Update Software**.



Note: Be sure that the firmware you want to update is the same product model as yours. Do not turn off the power when the updating is not finished ! When it finished, you can't turn back to the default version unless you have the previous firmware!

6. Appendix: Frequently Asked Questions

This chapter offers some suggestions to solve problems you might encounter. The potential problems are divided into 3 categories: Power, Hardware Connections, and LEDs; Device Access and Login; Internet Access.

6.1 Power, Hardware Connections and LEDs

None of the LEDs are on when power on the router.

Please make sure what you use is the power adaptor (as attached in the package) and check the connection between AC power and VDSL router.

DSL LED doesn't turn on after connect telephone line.

Please make sure what you use is the standard telephone line (as attached in the package), make sure the line is connected correctly and check whether there is poor contact at each interface. Wait for 30 seconds to allow the VDSL router to establish connection with your VDSL operator.

DSL LED is in the circulation of slow-flashing and fast-flashing after connection telephone line.

This situation means the VDSL router is in the status of failing to establish connection with Central Office. Please check carefully and confirm whether the VDSL router has been installed correctly.

LAN LED doesn't turn on after Ethernet cable is been connected.

Please make sure the Ethernet cable is connected to hub/PC and VDSL router correctly. Then please make sure the PC/hub has been powered on. Please make sure that you use parallel network cable to connect Uplink port of hub, or use parallel network cable to connect PC. If connect normal port of hub (not Uplink port), you must use cross-cable. Please make sure that your network cables meet the networking requirements above.

6.2 Device Access and Login

I forgot the IP address of the VDSL Router.

1. The default IP address is **192.168.1.1**.
2. If you changed the IP address and have forgotten it, you might get the IP address of the Router by looking up the IP address of the default gateway of your computer. To do this in most Windows computers, click **Start > Run**, enter **cmd**, and then enter **ipconfig**. The IP address of the **Default Gateway** might be the IP address of the router (it depends on the network), so enter this IP address in your Internet browser.
3. If this does not work, you have to reset the device to its factory defaults.

I forgot the password.

1. The default password is **password**.
2. If this does not work, you have to reset the device to its factory defaults.

I cannot see or access the Login screen in the web configurator.

1. Make sure you are using the correct IP address.

- The default IP address is **192.168.1.1**.
- If you changed the IP address, use the new IP address.
- If you changed the IP address and have forgotten it, see the **Frequently Asked Question -> I forgot the IP address of the VDSL router**.
- Make sure you are using the correct IP address.
- 2. Check the hardware connections and make sure the LEDs are behaving as expected.
- 3. Make sure your Internet browser doesn't block pop-up windows.
- 4. Make sure your computer is in the same subnet as the router.
- 5. Reset the device to its factory defaults and reboot it again.

6.3 Internet Access

My PC cannot access the Internet

First check whether PC can ping the interface Ethernet IP address of this product successfully (default value is 192.168.1.1) by using ping application. If ping application fails, please check the connection of Ethernet cable and check whether the states of LEDs are in gear.

If the PC uses private IP address that is set manually (non-registered legal IP address), please check:

1. Whether IP address of the PC gateway is legal IP address. Otherwise please use the right gateway, or set the PC to Obtain an IP address automatically.
2. Please confirm the validity of DNS server appointed to the PC with VDSL operator. Otherwise please use the right DNS, or set the PC to Obtain an IP address automatically.
3. Please make sure you have set the NAT rules and convert private IP address to legal IP address. IP address range of the PC that you specify should meet the setting range in NAT rules.
4. Central Office equipment may have problem.
5. The country or the wireless network type you selected is wrong.

My PC cannot browser Internet web page.

Please make sure DNS server appointed to the PC is correct. You can use ping application program to test whether the PC can connect to the DNS server of the VDSL operator.

Initialization of the PVC connection failed.

Be sure that cable is connected properly from the DSL port to the wall jack. The DSL LED on the front panel of the VDSL router should be on. Check your VPI, VCI, type of encapsulation and type of multiplexing setting are the same as what you collected from your service provider, Re-configure VDSL router and reboot it. If you still cannot work it out, you may need to verify these variables with the service provider.

7. CE and GPL

ALLNET GmbH Computersysteme declares that the device **ALL-BM200VDSL2V** is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC or 2014/30/EU. The Declaration of conformity can be found under this link: www.allnet.de/downloads.html

ALLNET GmbH Computersysteme
Maistrasse 2
82110 Germering

Tel.: +49 (0)89 894 222 - 22

Fax: +49 (0)89 894 222 - 33

Email: info@allnet.de

GPL Declaration for ALLNET products

DISCLAIMER OF WARRANTY

This Program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; version 2 of the License.

This Program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this Program; if not, write to the Free Software Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA.

The full text of the GNU General Public License version 2 is included with the software distribution in the file LICENSE.GPLv2

NO WARRANTY

BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Written Offer for Source Code

For binaries that you receive from ALLNET GmbH Computersysteme on physical media or within the download of the offered firmware that are licensed under any version of the GNU General Public License (GPL) or the GNU LGPL, you can receive a complete machine-readable copy of the source code by sending a written request to:

ALLNET GmbH Computersysteme
Maistrasse 2
82110 Germering

Your request should include: (i) the name of the covered binary, (ii) the version number of the ALLNET product containing the covered binary, (iii) your name, (iv) your company name (if applicable) and (v) your return mailing and email address (if available). We may charge you a nominal fee to cover the cost of the media and distribution. Your request must be sent within three (3) years of the date you received the GPL or LGPL covered code. For your convenience, some or all of the source code may also be found at:

<http://www.allnet.de/gpl.html>

LICENSE.GPLv2
GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software—to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".
Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.
1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.
You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.
2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
 - a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.
 - b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.
 - c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)
These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it. Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:
 - a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
 - b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,
 - c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.
6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.
7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.
10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

© ALLNET GmbH Computersysteme 2017 - All rights reserved

Errors and omissions excepted

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.
12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms. To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.> Copyright (C) <year> <name of author>

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA
Also add information on how to contact you by electronic and paper mail. If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author

Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.

This is free software, and you are welcome to redistribute it under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
'Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

LICENSE.LGPLv2.1

GNU LESSER GENERAL PUBLIC LICENSE

Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc. 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed. [This is the first released version of the Lesser GPL. It also counts as the successor of the GNU Library Public License, version 2, hence the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things. To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".
A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.
The "Library", below, refers to any such software library or work which has been distributed under these terms.
A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)
"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.
Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.
1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:
 - a) The modified work must itself be a software library.
 - b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.
 - c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.
 - d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.
(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.
Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.
This option is useful when you wish to copy part of the code of the Library into a program that is not a library.
4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.
If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.
5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.
However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.
When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.
If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)
Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.
6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.
You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:
 - a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that

the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

- b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.
- c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.
- d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.
- e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

- 7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:
 - a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.
 - b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.
- 8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.
- 9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.
- 10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.
- 11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

- 12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.
- 13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

- 14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the

Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.
16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.> Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or modify it under the terms of the GNU Lesser General Public License as published by the Free Software Foundation; either version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public License along with this library; if not, write to the Free Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the library 'Frob' (a library for tweaking knobs) written by James Random Hacker.

<signature of Ty Coon>, 1 April 1990 Ty Coon, President of Vice

That's all there is to it!