D-Link®
Building Networks for People

# Unified Services Router User Manual

DSR-250 / 250N / 500 / 500N / 1000 / 1000N

Ver. 1.04

Small Business Gateway Solution http://security.dlink.com

# User Manual

## *Unified Services Router*



http://www.dlink.com

# User Manual

## DSR-250 / 250N / DSR-500 / 500N / 1000 / 1000N
## Unified Services Router
## Version 1.04



### Copyright Notice



### Disclaimer

The information in this document is subject to change without notice. The manufacturer makes no representations or warranties with respect to the contents hereof and specifically disclaim any implied warranties of merchantability or fitness for any particular purpose. The manufacturer reserves the right to revise this publication and to make changes from time to time in the content hereof without obligation of the manufacturer to notify any person of such revision or changes.

### Limitations of Liability

UNDER NO CIRCUMSTANCES SHALL D-LINK OR ITS SUPPLIERS BE LIABLE FOR DAMAGES OF ANY CHARACTER (E.G. DAMAGES FOR LOSS OF PROFIT, SOFTWARE RESTORATION, WORK STOPPAGE, LOSS OF SAVED DATA OR ANY OTHER COMMERCIAL DAMAGES OR LOSSES) RESULTING FROM THE APPLICATION OR IMPROPER USE OF THE D-LINK PRODUCT OR FAILURE OF THE PRODUCT, EVEN IF D-LINK IS INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. FURTHERMORE, D-LINK WILL NOT BE LIABLE FOR THIRD-PARTY CLAIMS AGAINST CUSTOMER FOR LOSSES OR DAMAGES. D-LINK WILL IN NO EVENT BE LIABLE FOR ANY DAMAGES IN EXCESS OF THE AMOUNT D-LINK RECEIVED FROM THE END-USER FOR THE PRODUCT.

# Table of Contents

# List of Figures

# Chapter 1. Introduction

D-Link Unified Services Routers offer a secure, high performance networking solution to address the growing needs of small and medium businesses. Integrated high-speed IEEE 802.11n and 3G wireless technologies offer comparable performance to traditional wired networks, but with fewer limitations. Optimal network security is provided via features such as virtual private network (VPN) tunnels, IP Security (IPsec), Point-to-Point Tunneling Protocol (PPTP), Layer 2 Tunneling Protocol (L2TP), and Secure Sockets Layer (SSL). Empower your road warriors with clientless remote access anywhere and anytime using SSL VPN tunnels.

With the D-Link Unified Services Router you are able to experience a diverse set of benefits:

- Comprehensive Management Capabilities

  The DSR-500, DSR-500N, DSR-1000 and DSR-1000N include dual-WAN Gigabit Ethernet which provides policy-based service management ensuring maximum productivity for your business operations. The failover feature maintains data traffic without disconnecting when a landline connection is lost. The Outbound Load Balancing feature adjusts outgoing traffic across two WAN interfaces and optimizes the system performance resulting in high availability. The second WAN port can be configured as a DMZ port allowing you to isolate servers from your LAN.

DSR-250 /250N have a single WAN interface, and thus it does not support Auto Failover and Load Balancing scenarios.

- Superior Wireless Performance

  Designed to deliver superior wireless performance, the DSR-500N and DSR-1000N include 802.11 a/b/g/n, allowing for operation on either the 2.4 GHz or 5 GHz radio bands. Multiple In Multiple Out (MIMO) technology allows the DSR-500N and DSR-1000N to provide high data rates with minimal “dead spots” throughout the wireless coverage area.

DSR-250N and DSR-500N supports the 2.4GHz radio band only.

- Flexible Deployment Options

  The DSR-1000 / 1000N supports Third Generation (3G) Networks via an extendable USB 3G dongle. This 3G network capability offers an additional secure data connection for networks that provide critical services. The DSR-1000N can be configured to automatically switch to a 3G network whenever a physical link is lost.

- Robust VPN features

  A fully featured virtual private network (VPN) provides your mobile workers and branch offices with a secure link to your network. The DSR-250/250N, DSR-500/500N and DSR-1000 /1000N are capable of simultaneously managing 5, 10, 20 Secure Sockets Layer (SSL) VPN tunnels respectively, empowering your mobile users by providing remote access to a central corporate database.

Site-to-site VPN tunnels use IP Security (IPsec) Protocol, Point-to-Point Tunneling Protocol (PPTP), or Layer 2 Tunneling Protocol (L2TP) to facilitate branch office connectivity through encrypted virtual links. The DSR-250/250N, DSR-500/500N and DSR-1000/1000N support 25, 35 and 75 simultaneous IPSec VPN tunnels respectively.

- Efficient D-Link Green Technology

  As a concerned member of the global community, D-Link is devoted to providing eco-friendly products. D-Link Green WiFi and D-Link Green Ethernet save power and prevent waste. The D-Link Green WLAN scheduler reduces wireless power automatically during off-peak hours. Likewise the D-Link Green Ethernet program adjusts power usage based on the detected cable length and link status. In addition, compliance with RoHS (Restriction of Hazardous Substances) and WEEE (Waste Electrical and Electronic Equipment) directives make D-Link Green certified devices the environmentally responsible choice.

Support for the 3G wireless WAN USB dongle is only available for DSR-1000 and DSR-1000N.

## 1.1 About this User Manual

This document is a high level manual to allow new D-Link Unified Services Router users to configure connectivity, setup VPN tunnels, establish firewall rules and perform general administrative tasks. Typical deployment and use case scenarios are described in each section. For more detailed setup instructions and explanations of each configuration parameter, refer to the online help that can be accessed from each page in the router GUI.

## 1.2 Typographical Conventions

The following is a list of the various terms, followed by an example of how that term is represented in this document:

- Product Name – D-Link Unified Services Router.
  - Model numbers DSR-500/500N/1000/1000N/250/250N
- GUI Menu Path/GUI Navigation – ***Monitoring > Router Status***
- Important note –

# Chapter 2. Configuring Your Network: LAN Setup

It is assumed that the user has a machine for management connected to the LAN to the router. The LAN connection may be through the wired Ethernet ports available on the router, or once the initial setup is complete, the DSR may also be managed through its wireless interface as it is bridged with the LAN. Access the router's graphical user interface (GUI) for management by using any web browser, such as Microsoft Internet Explorer or Mozilla Firefox:

- Go to **http://192.168.10.1** (default IP address) to display the router's management login screen.
- Default login credentials for the management GUI:
  - Username: **admin**
  - Password: **admin**

If the router's LAN IP address was changed, use that IP address in the navigation bar of the browser to access the router's management UI.

## 2.1 LAN Configuration

***Setup > Network Settings > LAN Configuration***

By default, the router functions as a Dynamic Host Configuration Protocol (DHCP) server to the hosts on the WLAN or LAN network. With DHCP, PCs and other LAN devices can be assigned IP addresses as well as addresses for DNS servers, Windows Internet Name Service (WINS) servers, and the default gateway. With the DHCP server enabled the router's IP address serves as the gateway address for LAN and WLAN clients. The PCs in the LAN are assigned IP addresses from a pool of addresses specified in this procedure. Each pool address is tested before it is assigned to avoid duplicate addresses on the LAN.

For most applications the default DHCP and TCP/IP settings are satisfactory. If you want another PC on your network to be the DHCP server or if you are manually configuring the network settings of all of your PCs, set the DHCP mode to 'none'. DHCP relay can be used to forward DHCP lease information from another LAN device that is the network's DHCP server; this is particularly useful for wireless clients.

Instead of using a DNS server, you can use a Windows Internet Naming Service (WINS) server. A WINS server is the equivalent of a DNS server but uses the NetBIOS protocol to resolve hostnames. The router includes the WINS server IP address in the DHCP configuration when acknowledging a DHCP request from a DHCP client.

You can also enable DNS proxy for the LAN. When this is enabled the router then as a proxy for all DNS requests and communicates with the ISP's DNS servers. When disabled all DHCP clients receive the DNS IP addresses of the ISP.

To configure LAN Connectivity, please follow the steps below:

1. In the LAN Setup page, enter the following information for your router:

    - IP address (factory default: 192.168.10.1).

> If you change the IP address and click Save Settings, the GUI will not respond. Open a new connection to the new IP address and log in again. Be sure the LAN host (the machine used to manage the router) has obtained IP address from newly assigned pool (or has a static IP address in the router's LAN subnet) before accessing the router via changed IP address.

    - Subnet mask (factory default: 255.255.255.0).

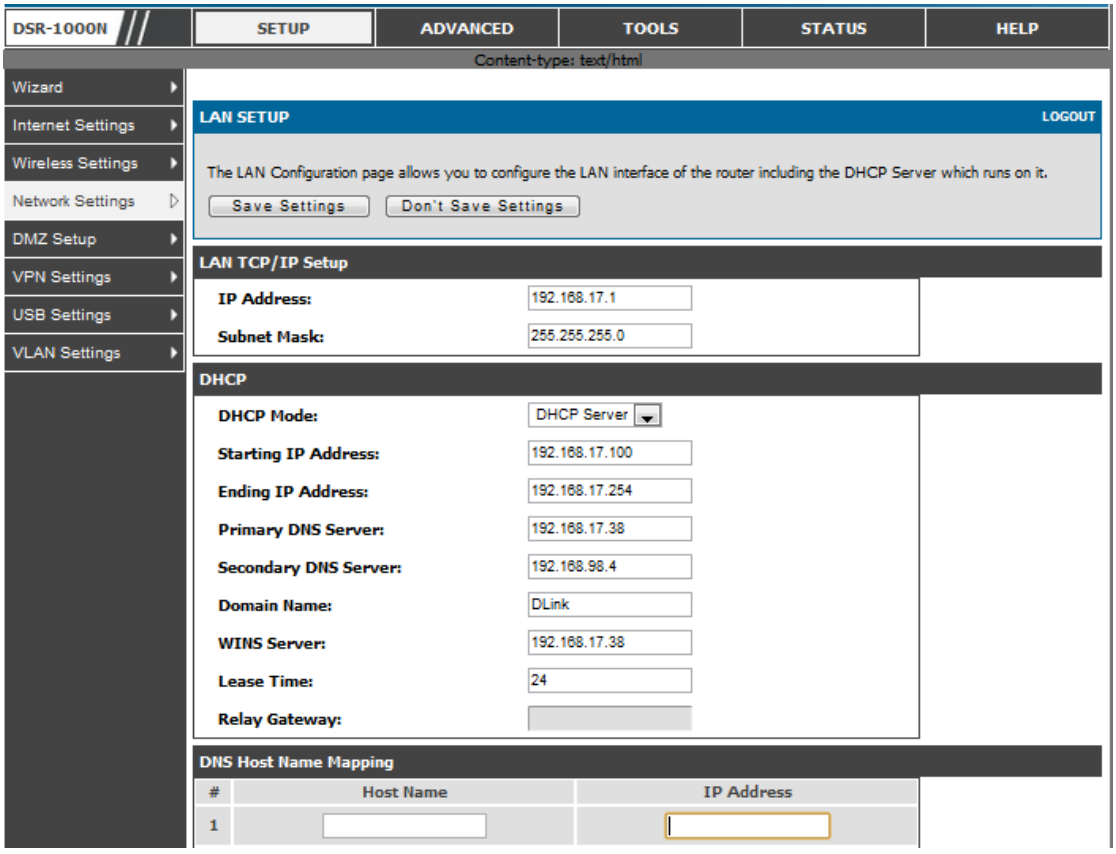
2. In the DHCP section, select the DHCP mode:

    - None: the router's DHCP server is disabled for the LAN
    - DHCP Server. With this option the router assigns an IP address within the specified range plus additional specified information to any LAN device that requests DHCP served addresses.
    - DHCP Relay: With this option enabled, DHCP clients on the LAN can receive IP address leases and corresponding information from a DHCP server on a different subnet. Specify the Relay Gateway, and when LAN clients make a DHCP request it will be passed along to the server accessible via the Relay Gateway IP address.
    - If DHCP is being enabled, enter the following DHCP server parameters:
    - Starting and Ending IP Addresses: Enter the first and last continuous addresses in the IP address pool. Any new DHCP client joining the LAN is assigned an IP address in this range. The default starting address is 192.168.10.2. The default ending address is 192.168.10.100. These addresses should be in the same IP address subnet as the router's LAN IP address. You may wish to save part of the subnet range for devices with statically assigned IP addresses in the LAN.
    - Primary and Secondary DNS servers: If configured domain name system (DNS) servers are available on the LAN enter their IP addresses here.
    - WINS Server (optional): Enter the IP address for the WINS server or, if present in your network, the Windows NetBios server.

- Lease Time: Enter the time, in hours, for which IP addresses are leased to clients.
- Relay Gateway: Enter the gateway address. This is the only configuration parameter required in this section when DHCP Relay is selected as its DHCP mode

3. In the DNS Host Name Mapping section:
   - Host Name: Provide a valid host name
   - IP address: Provide the IP address of the host name,
4. In the LAN proxy section:
   - Enable DNS Proxy: To enable the router to act as a proxy for all DNS requests and communicate with the ISP's DNS servers, click the checkbox.
5. Click Save Settings to apply all changes.

**Figure 1: Setup page for LAN TCP/IP settings**



## 2.1.1 LAN Configuration in an IPv6 Network

***Advanced > IPv6 > IPv6 LAN > IPv6 LAN Config***

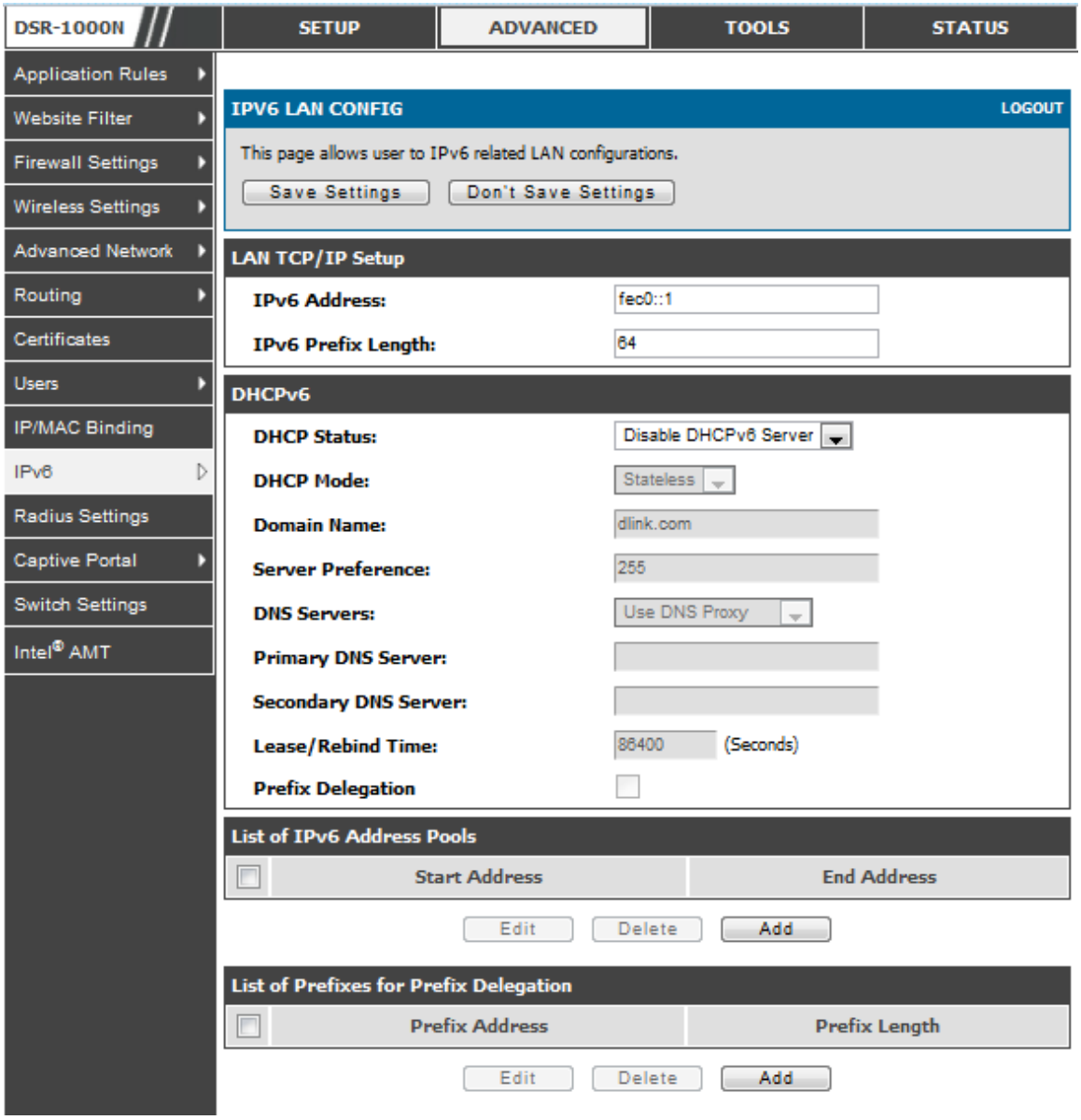
In IPv6 mode, the LAN DHCP server is enabled by default (similar to IPv4 mode). The DHCPv6 server will serve IPv6 addresses from configured address pools with the IPv6 Prefix Length assigned to the LAN.

IPv4 / IPv6 mode must be enabled in the ***Advanced > IPv6 > IP mode*** to enable IPv6 configuration options.

### LAN Settings

The default IPv6 LAN address for the router is **fec0::1**. You can change this 128 bit IPv6 address based on your network requirements. The other field that defines the LAN settings for the router is the prefix length. The IPv6 network (subnet) is identified by the initial bits of the address called the prefix. By default this is **64** bits long. All hosts in the network have common initial bits for their IPv6 address; the number of common initial bits in the network's addresses is set by the prefix length field.

**Figure 2: IPv6 LAN and DHCPv6 configuration**




If you change the IP address and click Save Settings, the GUI will not respond. Open a new connection to the new IP address and log in again. Be sure the LAN host (the machine used to manage the router) has obtained IP address from newly assigned pool (or has a static IP address in the router's LAN subnet) before accessing the router via changed IP address.

As with an IPv4 LAN network, the router has a DHCPv6 server. If enabled, the router assigns an IP address within the specified range plus additional specified information to any LAN PC that requests DHCP served addresses.

The following settings are used to configure the DHCPv6 server:

- DHCP Mode: The IPv6 DHCP server is either stateless or stateful. If stateless is selected an external IPv6 DHCP server is not required as the IPv6 LAN hosts are auto-configured by this router. In this case the router advertisement daemon (RADVD) must be configured on this device and ICMPv6 router discovery messages are used by the host for auto-configuration. There are no managed addresses to serve the LAN nodes. If stateful is selected the IPv6 LAN host will rely on an external DHCPv6 server to provide required configuration settings
- The domain name of the DHCPv6 server is an optional setting
- Server Preference is used to indicate the preference level of this DHCP server. DHCP advertise messages with the highest server preference value to a LAN host are preferred over other DHCP server advertise messages. The default is 255.
- The DNS server details can be manually entered here (primary/secondary options. An alternative is to allow the LAN DHCP client to receive the DNS server details from the ISP directly. By selecting Use DNS proxy, this router acts as a proxy for all DNS requests and communicates with the ISP's DNS servers (a WAN configuration parameter).
- Primary and Secondary DNS servers: If there are configured domain name system (DNS) servers available on the LAN enter the IP addresses here.
- Lease/Rebind time sets the duration of the DHCPv6 lease from this router to the LAN client.

### IPv6 Address Pools

This feature allows you to define the IPv6 delegation prefix for a range of IP addresses to be served by the gateway's DHCPv6 server. Using a delegation prefix you can automate the process of informing other networking equipment on the LAN of DHCP information specific for the assigned prefix.

### Prefix Delegation

The following settings are used to configure the Prefix Delegation:

- Prefix Delegation: Select this option to enable prefix delegation in DHCPv6 server. This option can be selected only in Stateless Address Auto Configuration mode of DHCPv6 server.

- Prefix Address: IPv6 prefix address in the DHCPv6 server prefix pool
- Prefix Length: Length prefix address

## 2.1.2 Configuring IPv6 Router Advertisements

Router Advertisements are analogous to IPv4 DHCP assignments for LAN clients, in that the router will assign an IP address and supporting network information to devices that are configured to accept such details. Router Advertisement is required in an IPv6 network is required for stateless auto configuration of the IPv6 LAN. By configuring the Router Advertisement Daemon on this router, the DSR will listen on the LAN for router solicitations and respond to these LAN hosts with router advisements.

### RADVD

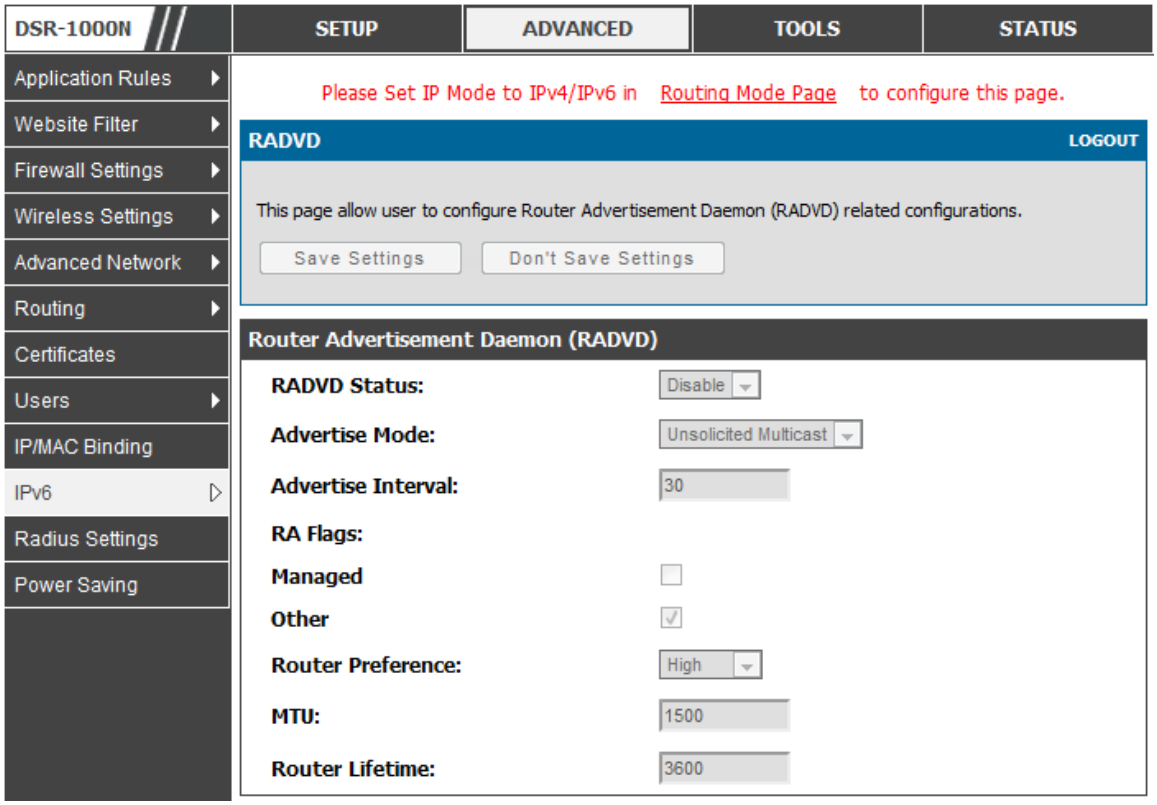
***Advanced > IPv6 > IPv6 LAN > Router Advertisement***

To support stateless IPv6 auto configuration on the LAN, set the RADVD status to Enable. The following settings are used to configure RADVD:

- Advertise Mode: Select Unsolicited Multicast to send router advertisements (RA's) to all interfaces in the multicast group. To restrict RA's to well known IPv6 addresses on the LAN, and thereby reduce overall network traffic, select Unicast only.
- Advertise Interval: When advertisements are unsolicited multicast packets, this interval sets the maximum time between advertisements from the interface. The actual duration between advertisements is a random value between one third of this field and this field. The default is 30 seconds.
- RA Flags: The router advertisements (RA's) can be sent with one or both of these flags. Chose Managed to use the administered /stateful protocol for address auto configuration. If the Other flag is selected the host uses administered/stateful protocol for non-address auto configuration.
- Router Preference: this low/medium/high parameter determines the preference associated with the RADVD process of the router. This is useful if there are other RADVD enabled devices on the LAN as it helps avoid conflicts for IPv6 clients.
- MTU: The router advertisement will set this maximum transmission unit (MTU) value for all nodes in the LAN that are autoconfigured by the router. The default is 1500.
- Router Lifetime: This value is present in RA's and indicates the usefulness of this router as a default router for the interface. The default is 3600

seconds. Upon expiration of this value, a new RADVD exchange must take place between the host and this router.

**Figure 3: Configuring the Router Advertisement Daemon**




## Advertisement Prefixes

### *Advanced > IPv6 > IPv6 LAN > Advertisement Prefixes*

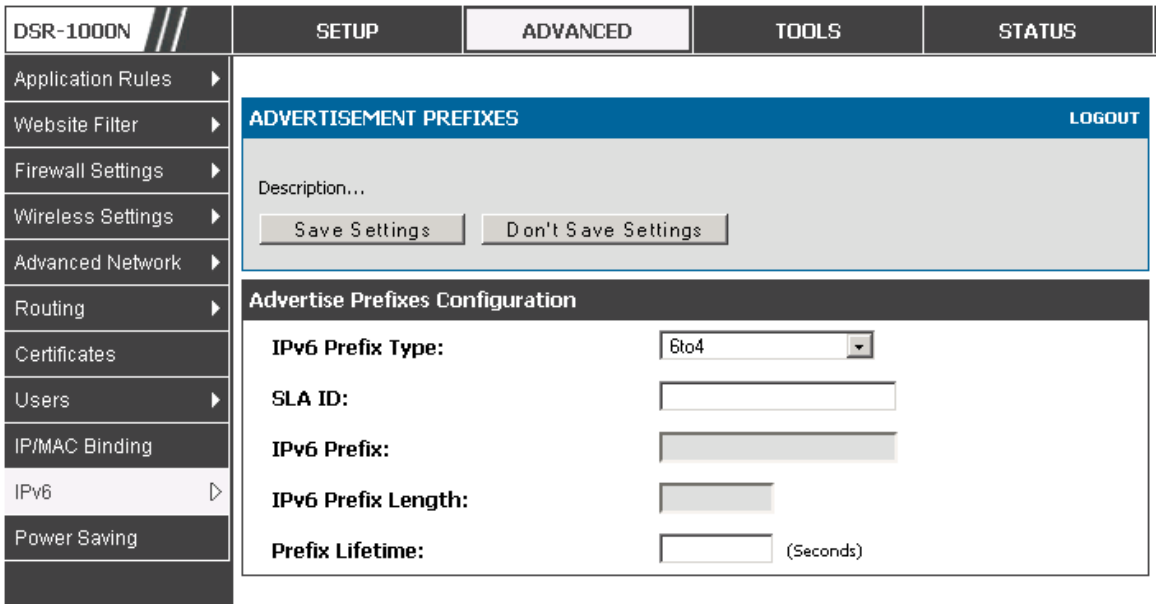
The router advertisements configured with advertisement prefixes allow this router to inform hosts how to perform stateless address auto configuration. Router advertisements contain a list of subnet prefixes that allow the router to determine neighbors and whether the host is on the same link as the router.

The following prefix options are available for the router advertisements:

- IPv6 Prefix Type: To ensure hosts support IPv6 to IPv4 tunnel select the 6to4 prefix type. Selecting Global/Local/ISATAP will allow the nodes to support all other IPv6 routing options
- SLA ID: The SLA ID (Site-Level Aggregation Identifier) is available when 6to4 Prefixes are selected. This should be the interface ID of the router's LAN interface used for router advertisements.

- IPv6 Prefix: When using Global/Local/ISATAP prefixes, this field is used to define the IPv6 network advertised by this router.
- IPv6 Prefix Length: This value indicates the number contiguous, higher order bits of the IPv6 address that define up the network portion of the address. Typically this is 64.
- Prefix Lifetime: This defines the duration (in seconds) that the requesting node is allowed to use the advertised prefix. It is analogous to DHCP lease time in an IPv4 network.

**Figure 4: IPv6 Advertisement Prefix settings**




# 2.2 VLAN Configuration

The router supports virtual network isolation on the LAN with the use of VLANs. LAN devices can be configured to communicate in a subnetwork defined by VLAN identifiers. LAN ports can be assigned unique VLAN IDs so that traffic to and from that physical port can be isolated from the general LAN. VLAN filtering is particularly useful to limit broadcast packets of a device in a large network

VLAN support is disabled by default in the router. In the VLAN Configuration page, enable VLAN support on the router and then proceed to the next section to define the virtual network.

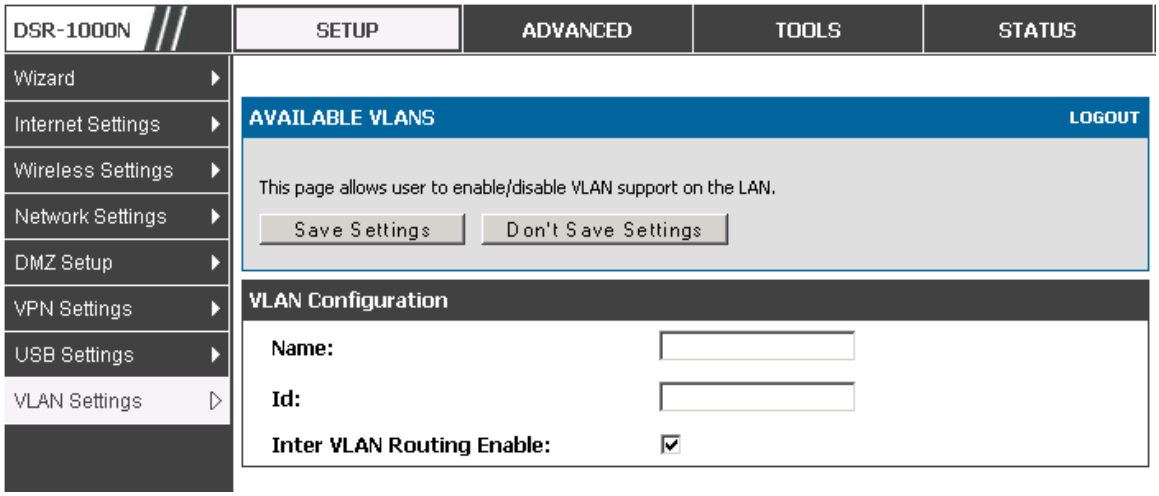
### *Setup > VLAN Settings > Available VLAN*

The Available VLAN page shows a list of configured VLANs by name and VLAN ID. A VLAN membership can be created by clicking the Add button below the List of Available VLANs.

A VLAN membership entry consists of a VLAN identifier and the numerical VLAN ID which is assigned to the VLAN membership. The VLAN ID value can be any

number from 2 to 4091. VLAN ID 1 is reserved for the default VLAN, which is used for untagged frames received on the interface. By enabling Inter VLAN Routing, you will allow traffic from LAN hosts belonging to this VLAN ID to pass through to other configured VLAN IDs that have Inter VLAN Routing enabled.

**Figure 5: Adding VLAN memberships to the LAN**




## 2.2.1 Associating VLANs to ports

In order to tag all traffic through a specific LAN port with a VLAN ID, you can associate a VLAN to a physical port.

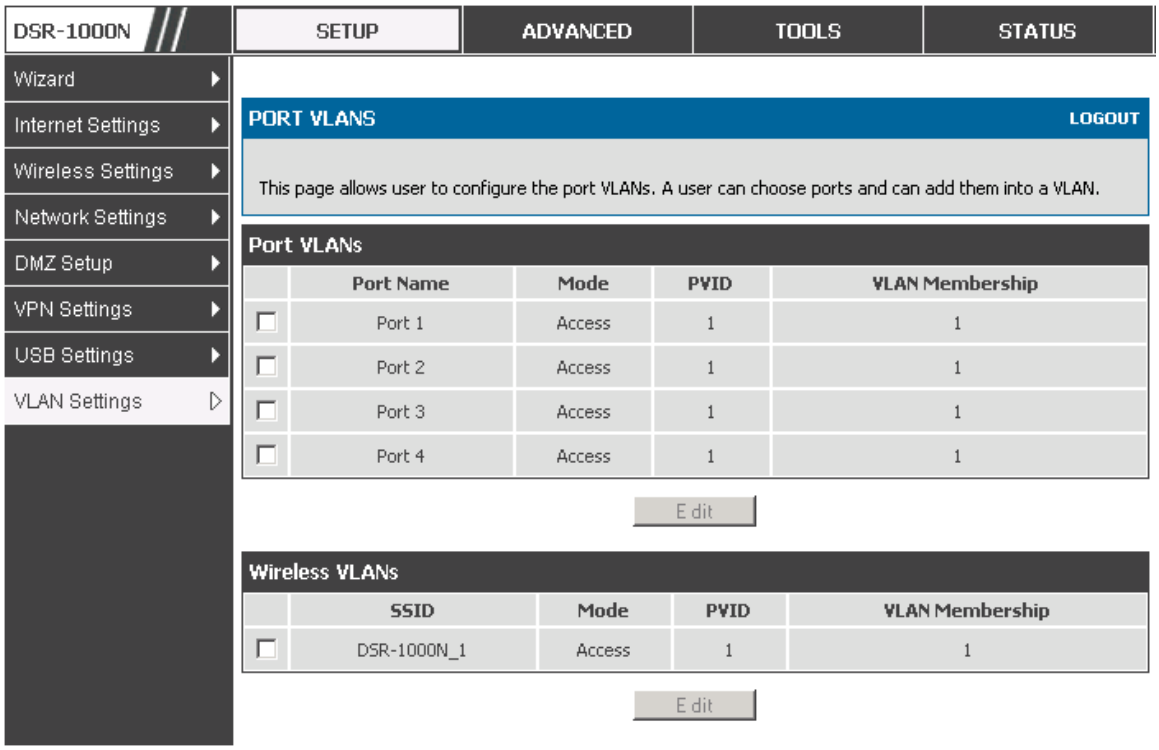
### *Setup > VLAN Settings > Port VLAN*

VLAN membership properties for the LAN and wireless LAN are listed on this page. The VLAN Port table displays the port identifier, the mode setting for that port and VLAN membership information. The configuration page is accessed by selecting one of the four physical ports or a configured access point and clicking Edit.

The edit page offers the following configuration options:

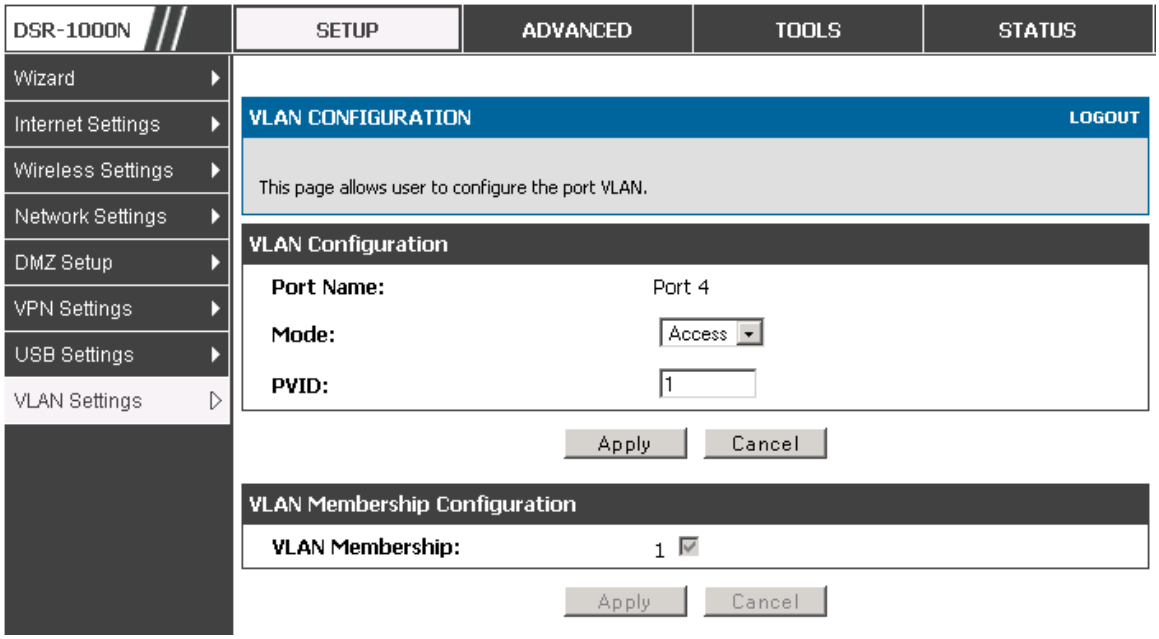
- Mode: The mode of this VLAN can be General, Access, or Trunk. The default is access.
- In General mode the port is a member of a user selectable set of VLANs. The port sends and receives data that is tagged or untagged with a VLAN ID. If the data into the port is untagged, it is assigned the defined PVID. In the configuration from Figure 4, Port 3 is a General port with PVID 3, so untagged data into Port 3 will be assigned PVID 3. All tagged data sent out of the port with the same PVID will be untagged. This is mode is typically used with IP Phones that have dual Ethernet ports. Data coming from phone to the switch port on the router will be tagged. Data passing through the phone from a connected device will be untagged.

**Figure 6: Port VLAN list**




- In Access mode the port is a member of a single VLAN (and only one). All data going into and out of the port is untagged. Traffic through a port in access mode looks like any other Ethernet frame.
- In Trunk mode the port is a member of a user selectable set of VLANs. All data going into and out of the port is tagged. Untagged coming into the port is not forwarded, except for the default VLAN with PVID=1, which is untagged. Trunk ports multiplex traffic for multiple VLANs over the same physical link.
- Select PVID for the port when the General mode is selected.
- Configured VLAN memberships will be displayed on the VLAN Membership Configuration for the port. By selecting one more VLAN membership options for a General or Trunk port, traffic can be routed between the selected VLAN membership IDs

**Figure 7: Configuring VLAN membership for a port**




# 2.3 Configurable Port: DMZ Setup

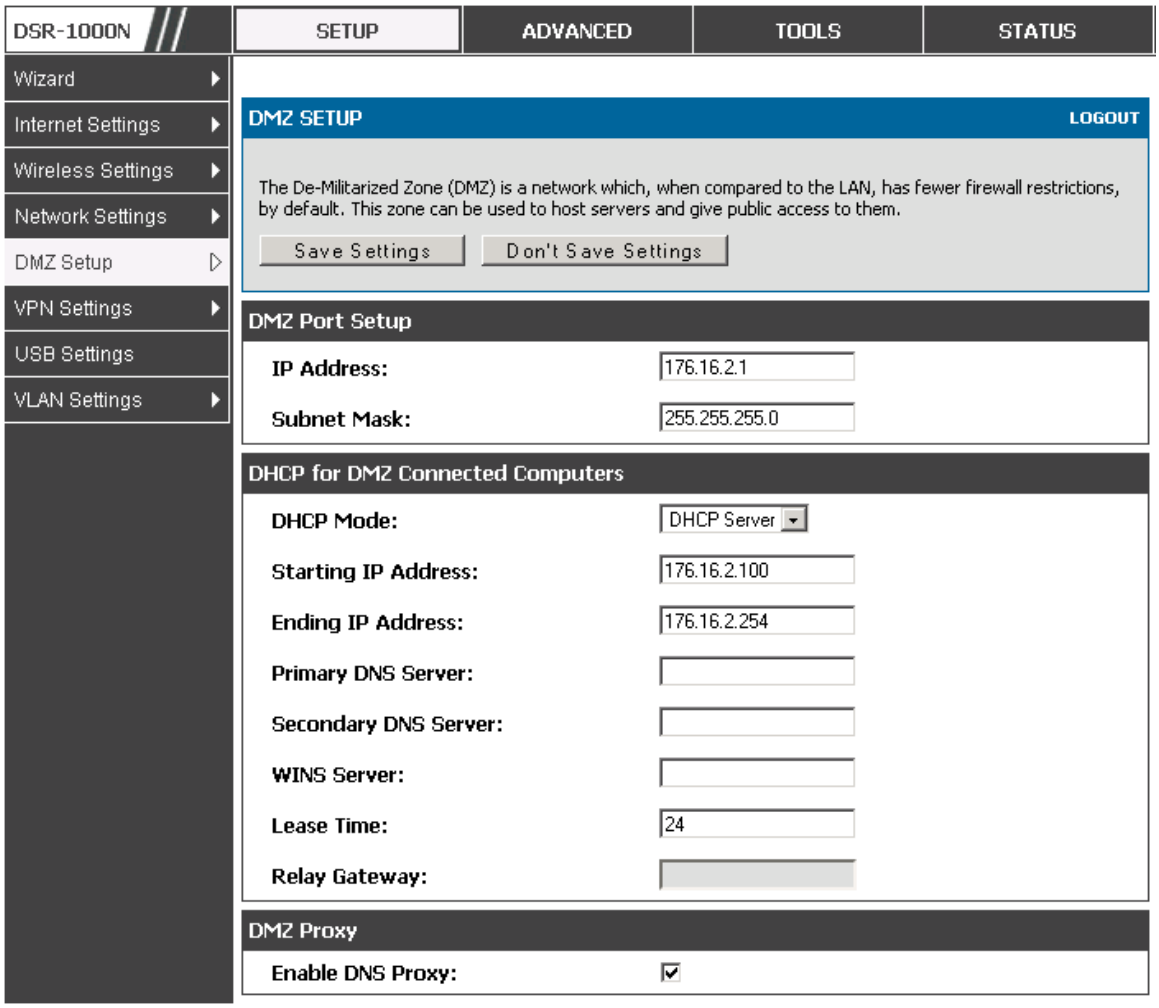
> DSR-250/250N does not have a configurable port – there is no DMZ support.

This router supports one of the physical ports to be configured as a secondary WAN Ethernet port or a dedicated DMZ port. A DMZ is a subnetwork that is open to the public but behind the firewall. The DMZ adds an additional layer of security to the LAN, as specific services/ports that are exposed to the internet on the DMZ do not have to be exposed on the LAN. It is recommended that hosts that must be exposed to the internet (such as web or email servers) be placed in the DMZ network. Firewall rules can be allowed to permit access specific services/ports to the DMZ from both the LAN or WAN. In the event of an attack to any of the DMZ nodes, the LAN is not necessarily vulnerable as well.

### *Setup > DMZ Setup > DMZ Setup Configuration*

DMZ configuration is identical to the LAN configuration. There are no restrictions on the IP address or subnet assigned to the DMZ port, other than the fact that it cannot be identical to the IP address given to the LAN interface of this gateway.

**Figure 8: DMZ configuration**




In order to configure a DMZ port, the router's configurable port must be set to DMZ in the ***Setup > Internet Settings > Configurable Port*** page.

# 2.4 Universal Plug and Play (UPnP)

***Advanced > Advanced Network > UPnP***

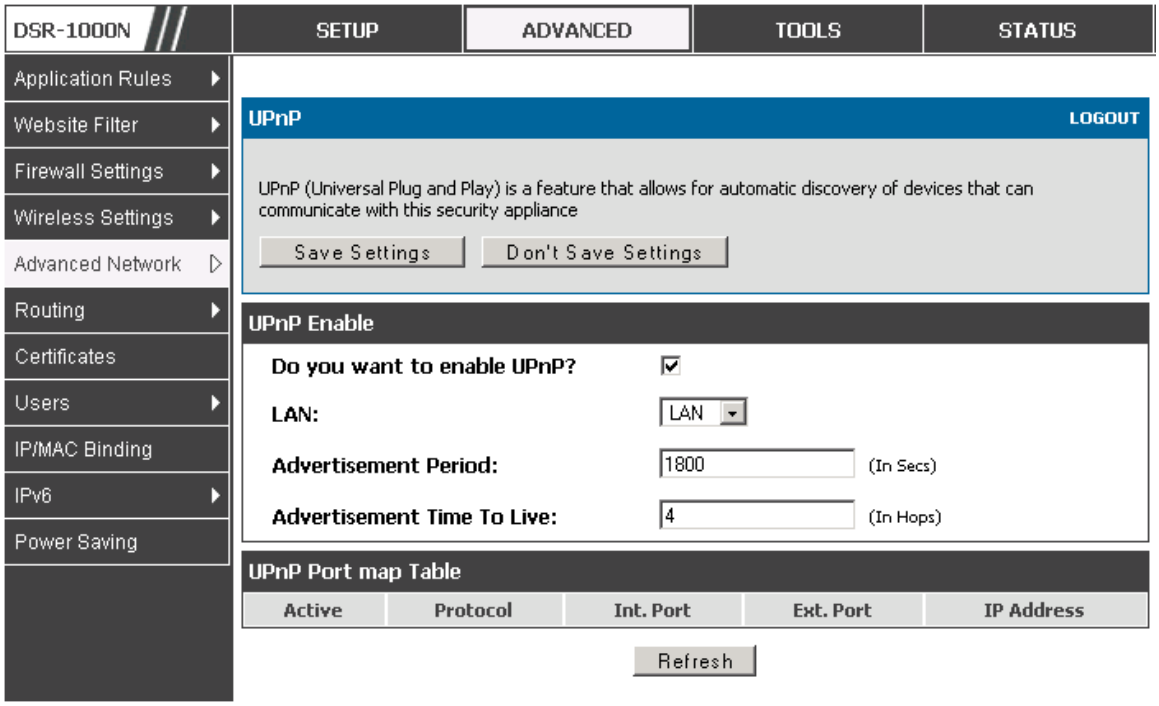
Universal Plug and Play (UPnP) is a feature that allows the router to discovery devices on the network that can communicate with the router and allow for auto configuration. If a network device is detected by UPnP, the router can open internal or external ports for the traffic protocol required by that network device.

Once UPnP is enabled, you can configure the router to detect UPnP-supporting devices on the LAN (or a configured VLAN). If disabled, the router will not allow for automatic device configuration.

Configure the following settings to use UPnP:

- Advertisement Period: This is the frequency that the router broadcasts UPnP information over the network. A large value will minimize network traffic but cause delays in identifying new UPnP devices to the network.
- Advertisement Time to Live: This is expressed in hops for each UPnP packet. This is the number of steps a packet is allowed to propagate before being discarded. Small values will limit the UPnP broadcast range. A default of 4 is typical for networks with few switches.

**Figure 9: UPnP Configuration**




UPnP Port map Table

The UPnP Port map Table has the details of UPnP devices that respond to the router's advertisements. The following information is displayed for each detected device:

- Active: A yes/no indicating whether the port of the UPnP device that established a connection is currently active
- Protocol: The network protocol (i.e. HTTP, FTP, etc.) used by the DSR
- Int. Port (Internal Port): The internal ports opened by UPnP (if any)
- Ext. Port (External Port): The external ports opened by UPnP (if any)
- IP Address: The IP address of the UPnP device detected by this router

Click Refresh to refresh the portmap table and search for any new UPnP devices.

# 2.5 Captive Portal

DSR-250/250N does not have support for the Captive Portal feature.

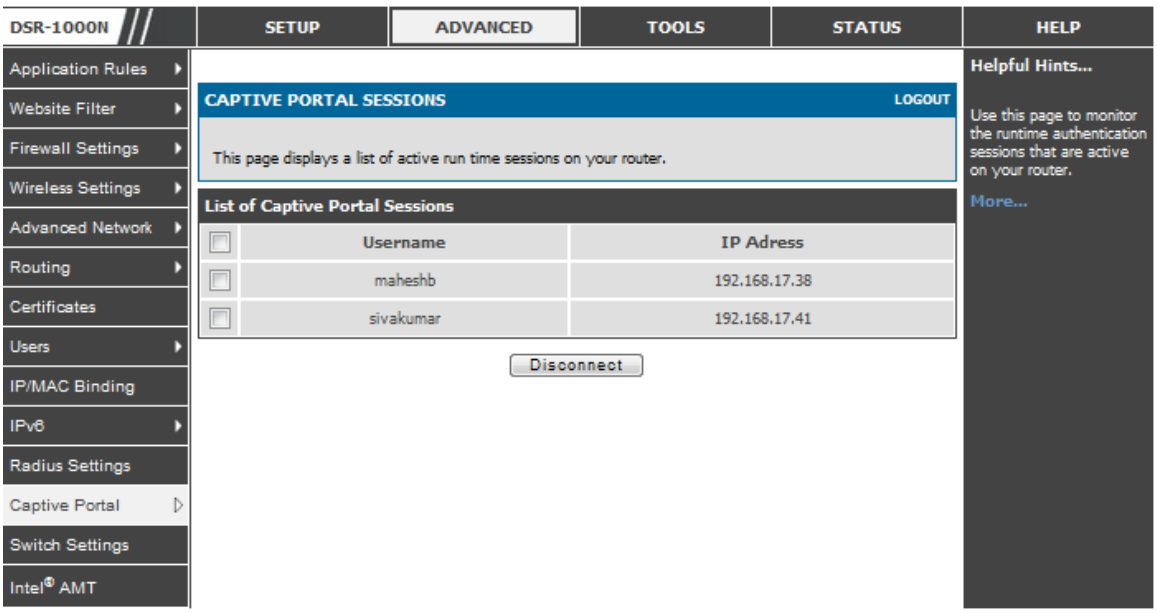
LAN users can gain internet access via web portal authentication with the DSR. Also referred to as Run-Time Authentication, a Captive Portal is ideal for a web café scenario where users initiate HTTP connection requests for web access but are not interested in accessing any LAN services. Firewall policies underneath will define which users require authentication for HTTP access, and when a matching user request is made the DSR will intercept the request and prompt for a username / password. The login credentials are compared against the RunTimeAuth users in user database prior to granting HTTP access.

Captive Portal is available for LAN users only and not for DMZ hosts.

### *Advanced > Captive Portal >Captive Portal Sessions*

The Active Runtime internet sessions through the router's firewall are listed in the below table. These users are present in the local or external user database and have had their login credentials approved for internet access. A 'Disconnect' button allows the DSR admin to selectively drop an authenticated user.

**Figure 10: Active Runtime sessions**



# Chapter 3. Connecting to the Internet: WAN Setup

This router has two WAN ports that can be used to establish a connection to the internet. The following ISP connection types are supported: DHCP, Static, PPPoE, PPTP, L2TP, 3G Internet (via USB modem).

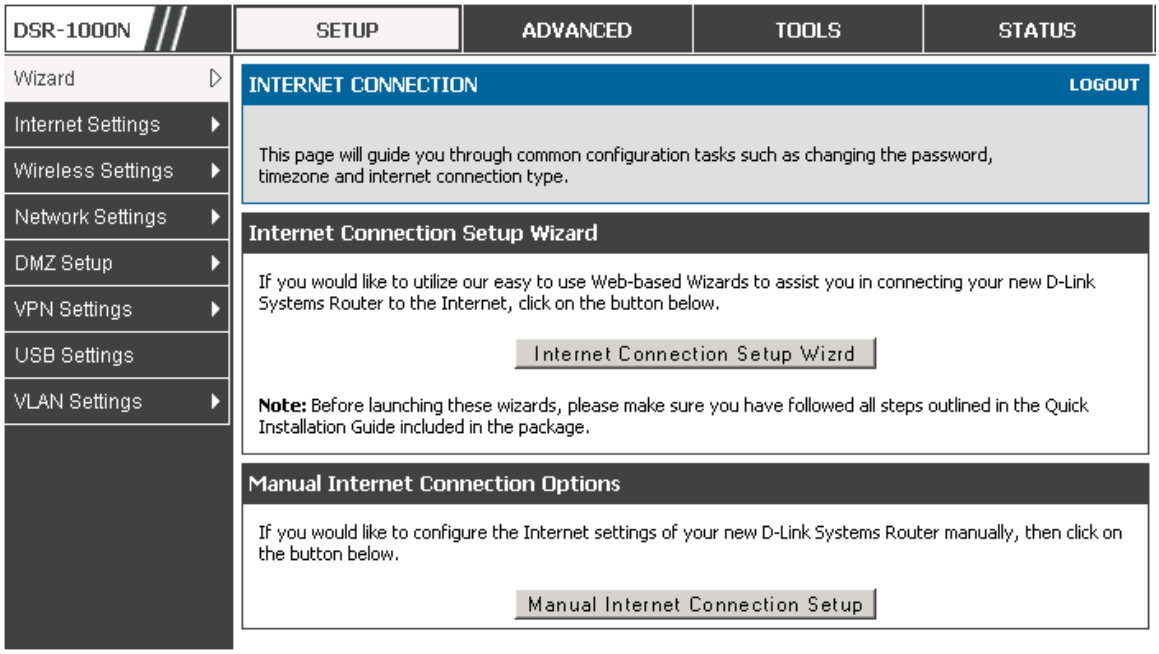
It is assumed that you have arranged for internet service with your Internet Service Provider (ISP). Please contact your ISP or network administrator for the configuration information that will be required to setup the router.

## 3.1 Internet Setup Wizard

***Setup > Wizard > Internet***

The Internet Connection Setup Wizard is available for users new to networking. By going through a few straightforward configuration pages you can take the information provided by your ISP to get your WAN connection up and enable internet access for your network.

**Figure 11: Internet Connection Setup Wizard**




You can start using the Wizard by logging in with the administrator password for the router. Once authenticated set the time zone that you are located in, and then choose the type of ISP connection type: DHCP, Static, PPPoE, PPTP, L2TP. Depending on the connection type a username/password may be required to register this router with the ISP. In most cases the default settings can be used if the ISP did not specify that parameter. The last step in the Wizard is to click the Connect button, which confirms the settings by establishing a link with the ISP. Once connected, you can move on and configure other features in this router.

> 3G Internet access with a USB modem is supported on WAN3. The Internet Connection Setup Wizard assists with the primary WAN port (WAN1) configuration only.

# 3.2 WAN Configuration

***Setup > Internet Settings > WAN1 Setup***

You must either allow the router to detect WAN connection type automatically or configure manually the following basic settings to enable Internet connectivity:

- ISP Connection type: Based on the ISP you have selected for the primary WAN link for this router, choose Static IP address, DHCP client, Point-to-Point Tunneling Protocol (PPTP), Point-to-Point Protocol over Ethernet (PPPoE), Layer 2 Tunneling Protocol (L2TP). Required fields for the selected ISP type become highlighted. Enter the following information as needed and as provided by your ISP:
- PPPoE Profile Name. This menu lists configured PPPoE profiles, particularly useful when configuring multiple PPPoE connections (i.e. for Japan ISPs that have multiple PPPoE support).
- ISP login information. This is required for PPTP and L2TP ISPs.
    - User Name
    - Password
    - Secret (required for L2TP only)
- MPPE Encryption: For PPTP links, your ISP may require you to enable Microsoft Point-to-Point Encryption (MPPE).
- Split Tunnel (supported for PPTP and L2TP connection). This setting allows your LAN hosts to access internet sites over this WAN link while still permitting VPN traffic to be directed to a VPN configured on this WAN port.

> If split tunnel is enabled, DSR won't expect a default route from the ISP server. In such case, user has to take care of routing manually by configuring the routing from Static Routing page.

- Connectivity Type: To keep the connection always on, click Keep Connected. To log out after the connection is idle for a period of time (useful if your ISP costs are based on logon times), click Idle Timeout and enter the time, in minutes, to wait before disconnecting in the Idle Time field.

- My IP Address: Enter the IP address assigned to you by the ISP.
- Server IP Address: Enter the IP address of the PPTP or L2TP server.

DSR-250/250N doesn't have a dual WAN support.

## 3.2.1 WAN Port IP address

Your ISP assigns you an IP address that is either dynamic (newly generated each time you log in) or static (permanent). The IP Address Source option allows you to define whether the address is statically provided by the ISP or should be received dynamically at each login. If static, enter your IP address, IPv4 subnet mask, and the ISP gateway's IP address. PPTP and L2TP ISPs also can provide a static IP address and subnet to configure, however the default is to receive that information dynamically from the ISP.

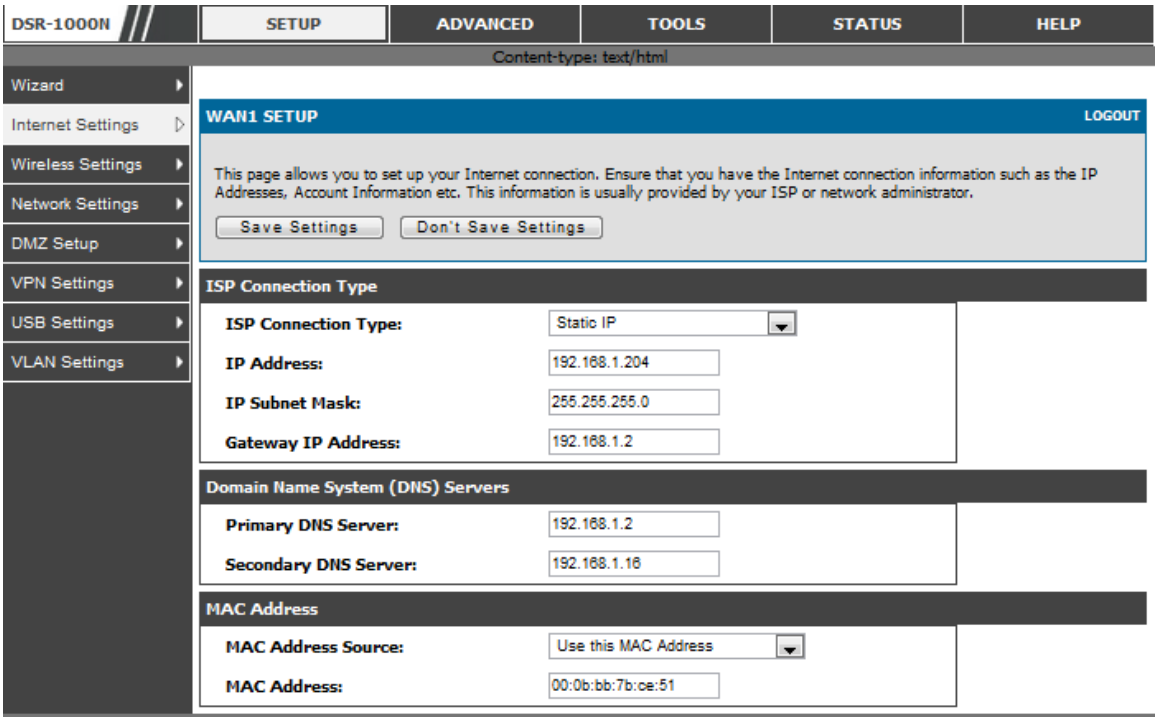
## 3.2.2 WAN DNS Servers

The IP Addresses of WAN Domain Name Servers (DNS) are typically provided dynamically from the ISP but in some cases you can define the static IP addresses of the DNS servers. DNS servers map Internet domain names (example: www.google.com) to IP addresses. Click to indicate whether to get DNS server addresses automatically from your ISP or to use ISP-specified addresses. If its latter, enter addresses for the primary and secondary DNS servers. To avoid connectivity problems, ensure that you enter the addresses correctly.

## 3.2.3 DHCP WAN

For DHCP client connections, you can choose the MAC address of the router to register with the ISP. In some cases you may need to clone the LAN host's MAC address if the ISP is registered with that LAN host.

**Figure 12: Manual WAN configuration**

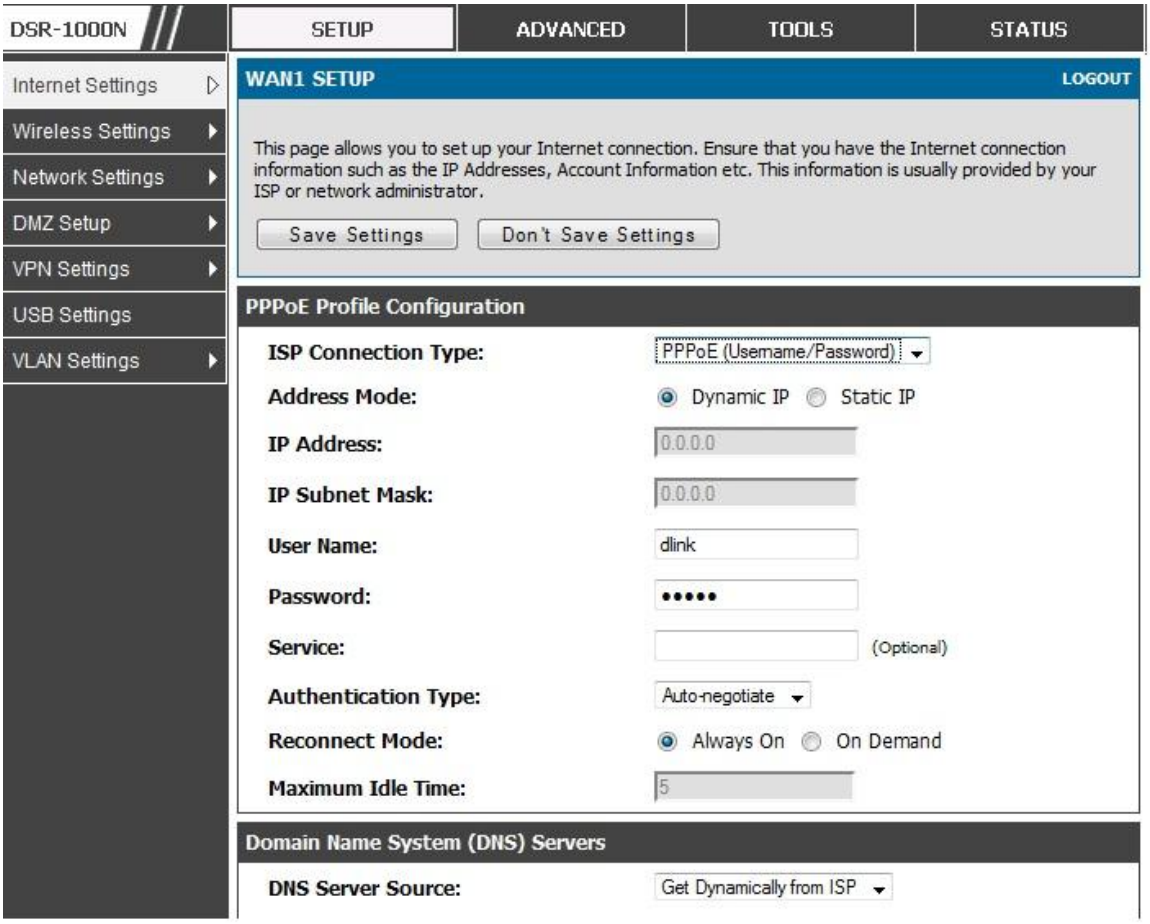



## 3.2.4 PPPoE

***Setup > Internet Settings***

The PPPoE ISP settings are defined on the WAN Configuration page. There are two types of PPPoE ISP's supported by the DSR: the standard username/password PPPoE and Japan Multiple PPPoE.

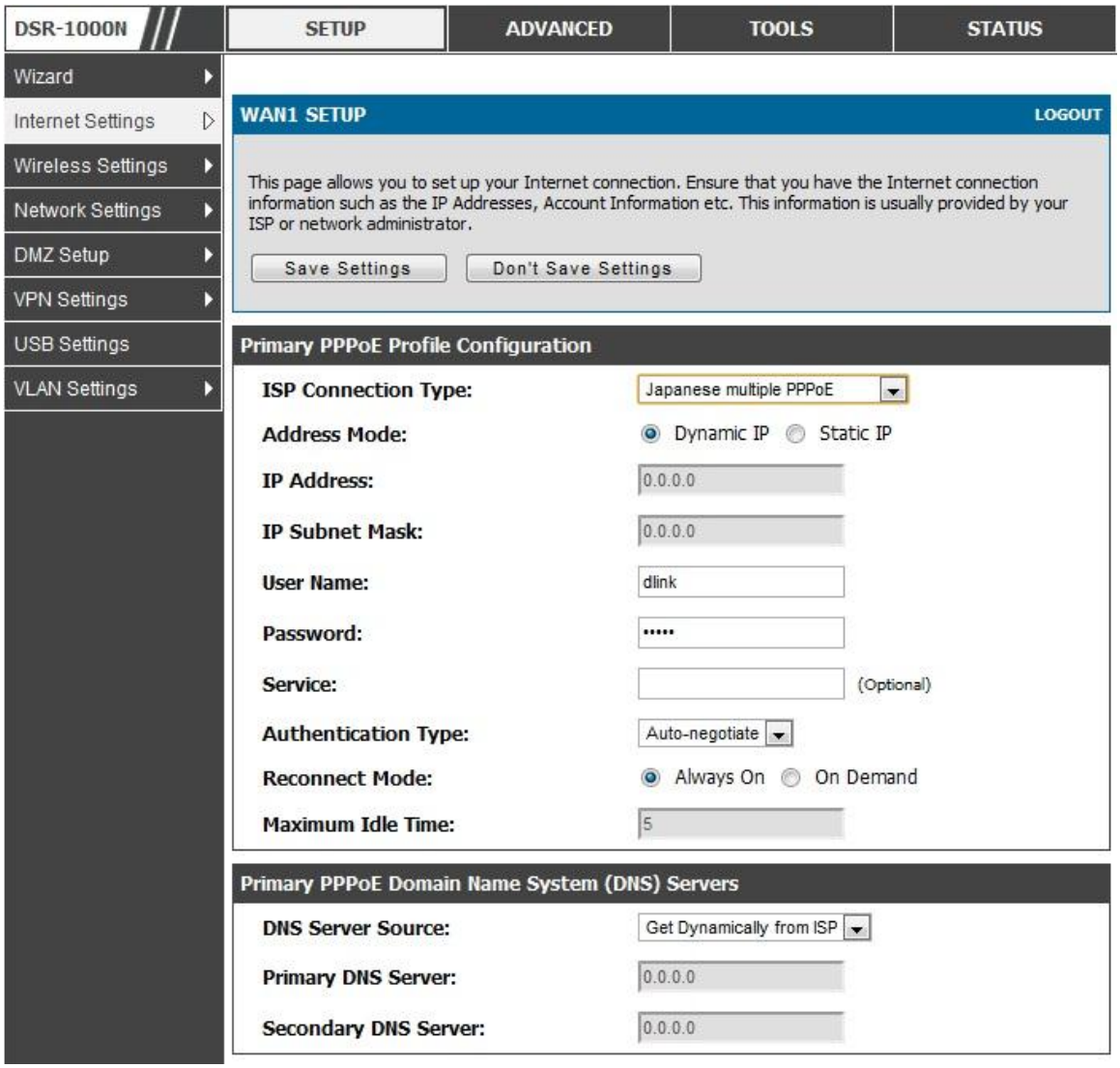
**Figure 13: PPPoE configuration for standard ISPs**




Most PPPoE ISP's use a single control and data connection, and require username / password credentials to login and authenticate the DSR with the ISP. The ISP connection type for this case is "PPPoE (Username/Password)". The GUI will prompt you for authentication, service, and connection settings in order to establish the PPPoE link.

For some ISP's, most popular in Japan, the use of "Japanese Multiple PPPoE" is required in order to establish concurrent primary and secondary PPPoE connections between the DSR and the ISP. The Primary connection is used for the bulk of data and internet traffic and the Secondary PPPoE connection carries ISP specific (i.e. control) traffic between the DSR and the ISP.

**Figure 14: WAN configuration for Japanese Multiple PPPoE (part 1)**

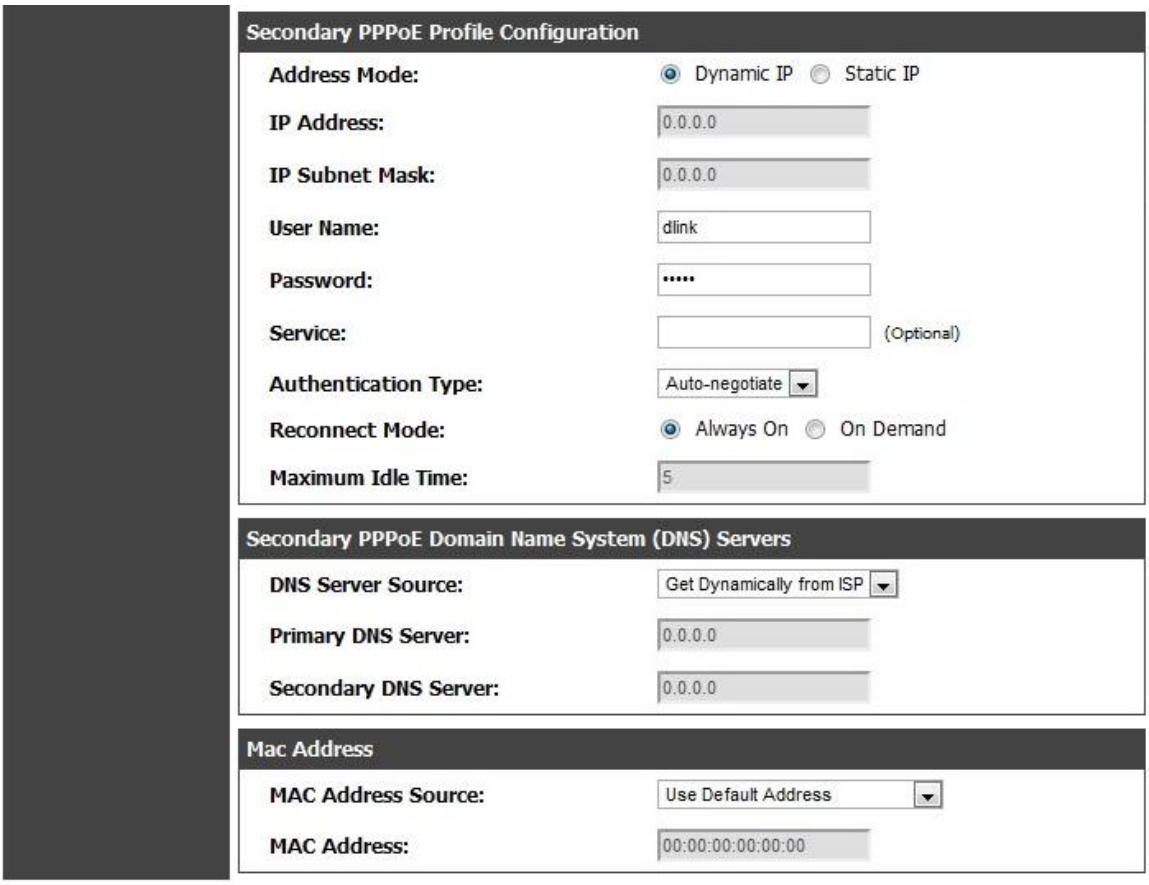



There are a few key elements of a multiple PPPoE connection:

- Primary and secondary connections are concurrent
- Each session has a DNS server source for domain name lookup, this can be assigned by the ISP or configured through the GUI
- The DSR acts as a DNS proxy for LAN users
- Only HTTP requests that specifically identify the secondary connection's domain name (for example *.flets) will use the secondary profile to access the content available through this secondary PPPoE terminal. All other HTTP / HTTPS requests go through the primary PPPoE connection.

When Japanese multiple PPPoE is configured and secondary connection is up, some predefined routes are added on that interface. These routes are needed to access the internal domain of the ISP where he hosts various services. These routes can even be configured through the static routing page as well.

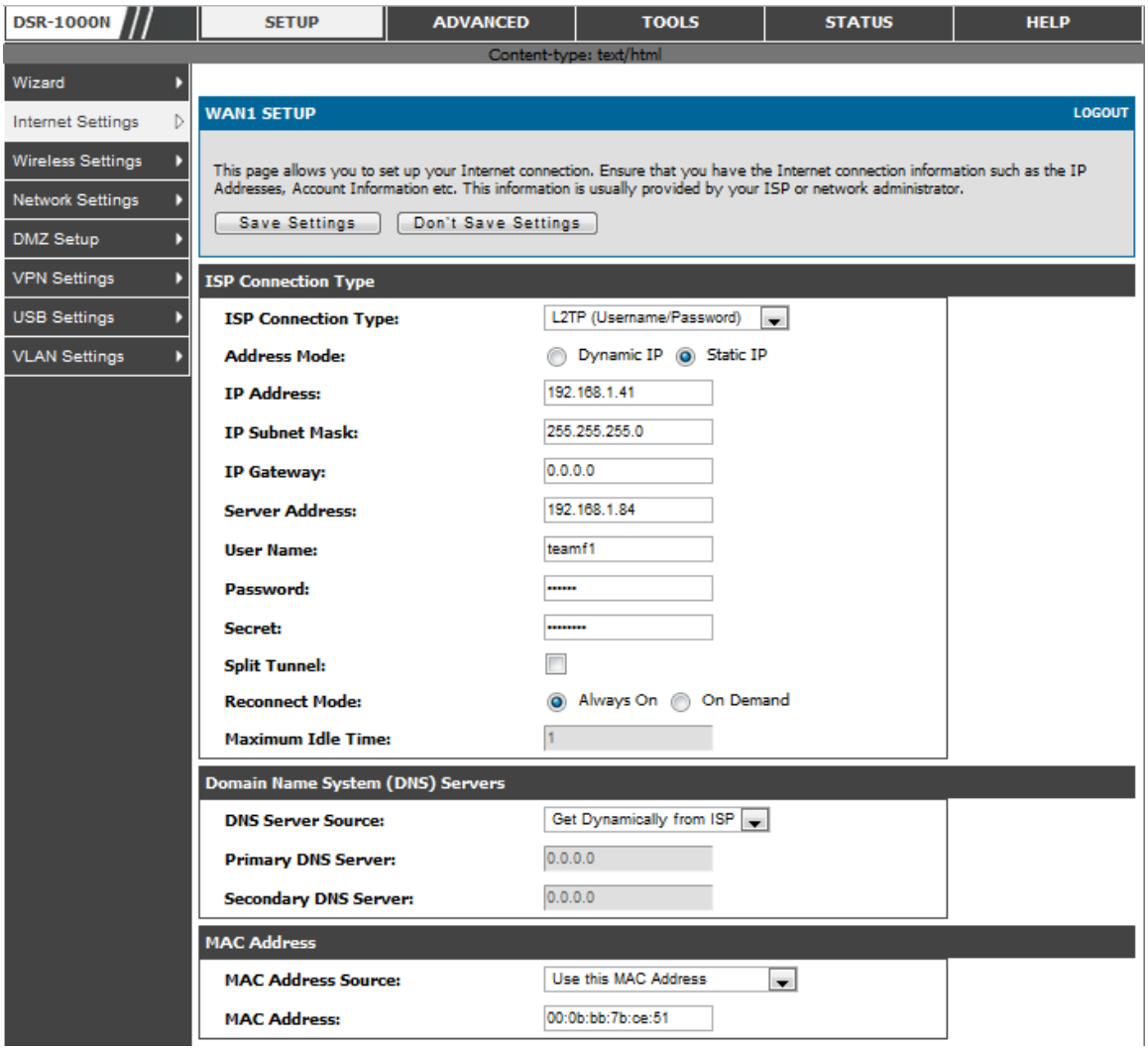
**Figure 15: WAN configuration for Multiple PPPoE (part 2)**




## 3.2.5 Russia L2TP and PPTP WAN

For Russia L2TP WAN connections, you can choose the address mode of the connection to get an IP address from the ISP or configure a static IP address provided by the ISP. For DHCP client connections, you can choose the MAC address of the router to register with the ISP. In some cases you may need to clone the LAN host's MAC address if the ISP is registered with that LAN host.

**Figure 16: Russia L2TP ISP configuration**




## 3.2.6 WAN Configuration in an IPv6 Network

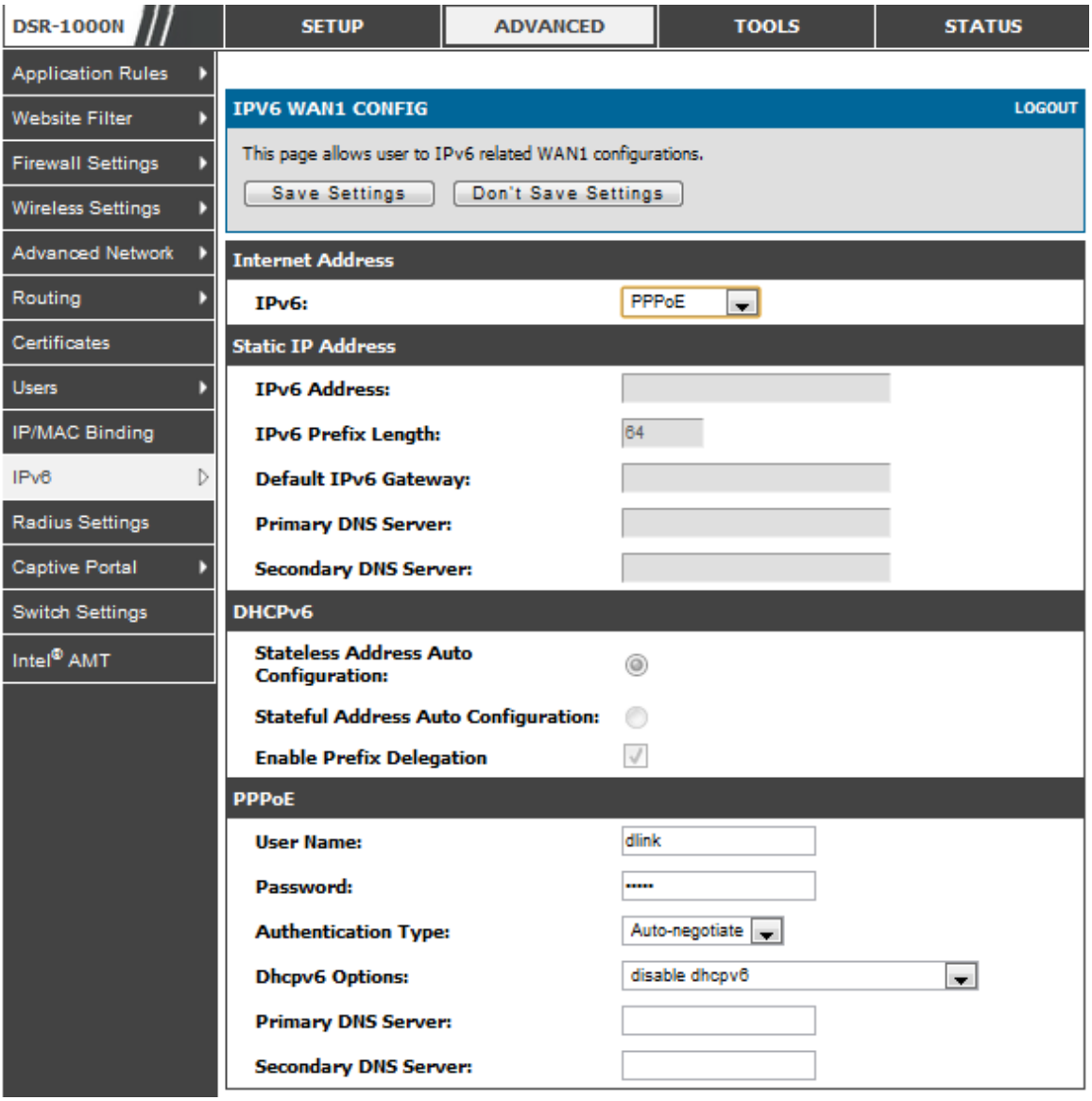
### *Advanced > IPv6 > IPv6 WAN1 Config*

For IPv6 WAN connections, this router can have a static IPv6 address or receive connection information when configured as a DHCPv6 client. In the case where the ISP assigns you a fixed address to access the internet, the static configuration settings must be completed. In addition to the IPv6 address assigned to your router, the IPv6 prefix length defined by the ISP is needed. The default IPv6 Gateway address is the server at the ISP that this router will connect to for accessing the internet. The primary and secondary DNS servers on the ISP's IPv6 network are used for resolving internet addresses, and these are provided along with the static IP address and prefix length from the ISP.

When the ISP allows you to obtain the WAN IP settings via DHCP, you need to provide details for the DHCPv6 client configuration. The DHCPv6 client on the

gateway can be either stateless or stateful. If a stateful client is selected the gateway will connect to the ISP's DHCPv6 server for a leased address. For stateless DHCP there need not be a DHCPv6 server available at the ISP, rather ICMPv6 discover messages will originate from this gateway and will be used for auto configuration. A third option to specify the IP address and prefix length of a preferred DHCPv6 server is available as well.

**Figure 17: IPv6 WAN Setup page**




Prefix Delegation: Select this option to request router advertisement prefix from any available DHCPv6 servers available on the ISP, the obtained prefix is updated to the advertised prefixes on the LAN side. This option can be selected only in Statesless Address Auto Configuration mode of DHCPv6 Client.

When IPv6 is PPPoE type, the following PPPoE fields are enabled.

- Username: Enter the username required to log in to the ISP.
- Password: Enter the password required to login to the ISP.
- Authentication Type: The type of Authentication in use by the profile: Auto-Negotiate/PAP/CHAP/MS-CHAP/MS-CHAPv2.
- 
- Dhcpv6 Options: The mode of Dhcpv6 client that will start in this mode: disable dhcpv6/stateless dhcpv6/stateful dhcpv6/stateless dhcpv6 with prefix delegation.
- Primary DNS Server: Enter a valid primary DNS Server IP Address.
- Secondary DNS Server: Enter a valid secondary DNS Server IP Address.

Click Save Settings to save your changes.

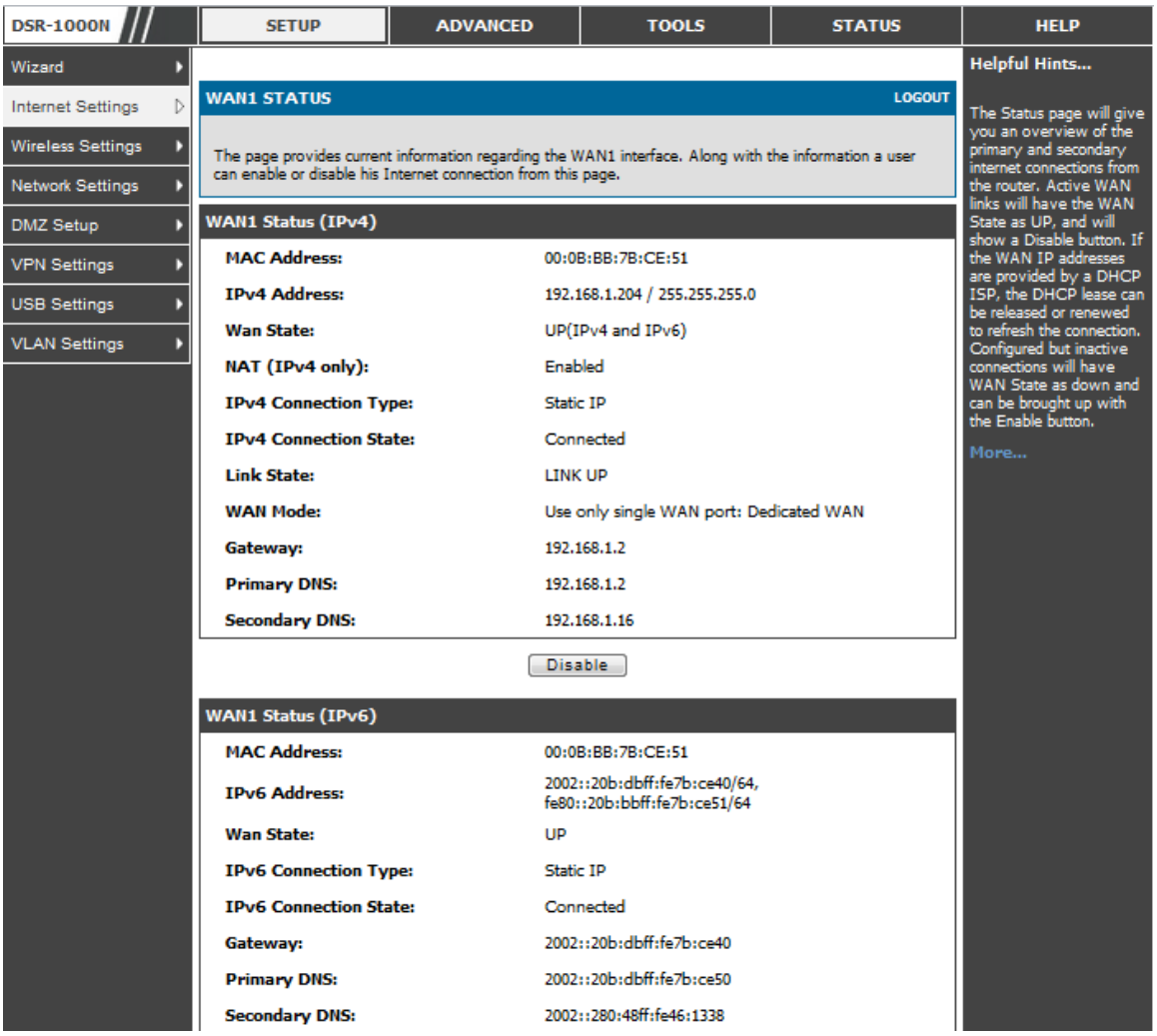
## 3.2.7 Checking WAN Status

***Setup > Internet Settings > WAN1 Status***

The status and summary of configured settings for both WAN1, WAN2 and WAN3 are available on the WAN Status page. You can view the following key connection status information for each WAN port:

- Connection time: The connection uptime
- Connection type: Dynamic IP or Static IP
- Connection state: This is whether the WAN is connected or disconnected to an ISP. The Link State is whether the physical WAN connection in place; the Link State can be UP (i.e. cable inserted) while the WAN Connection State is down.
- IP address / subnet mask: IP Address assigned
- Gateway IP address: WAN Gateway Address

**Figure 18: Connection Status information for both WAN ports**




The WAN status page allows you to Enable or Disable static WAN links. For WAN settings that are dynamically received from the ISP, you can Renew or Release the link parameters if required.

# 3.3 Bandwidth Controls

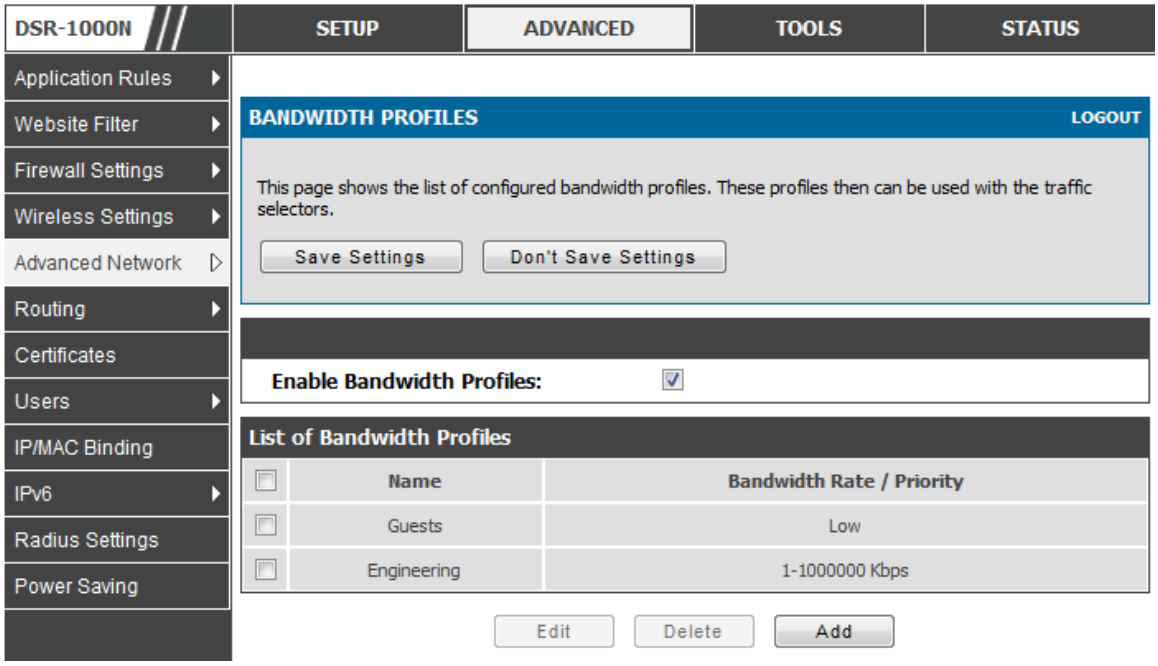
***Advanced > Advanced Network > Traffic Management > Bandwidth Profiles***

Bandwidth profiles allow you to regulate the traffic flow from the LAN to WAN 1 or WAN 2. This is useful to ensure that low priority LAN users (like guests or HTTP service) do not monopolize the available WAN's bandwidth for cost-savings or bandwidth-priority-allocation purposes.

Bandwidth profiles configuration consists of enabling the bandwidth control feature from the GUI and adding a profile which defines the control parameters. The profile

can then be associated with a traffic selector, so that bandwidth profile can be applied to the traffic matching the selectors. Selectors are elements like IP addresses or services that would trigger the configured bandwidth regulation.

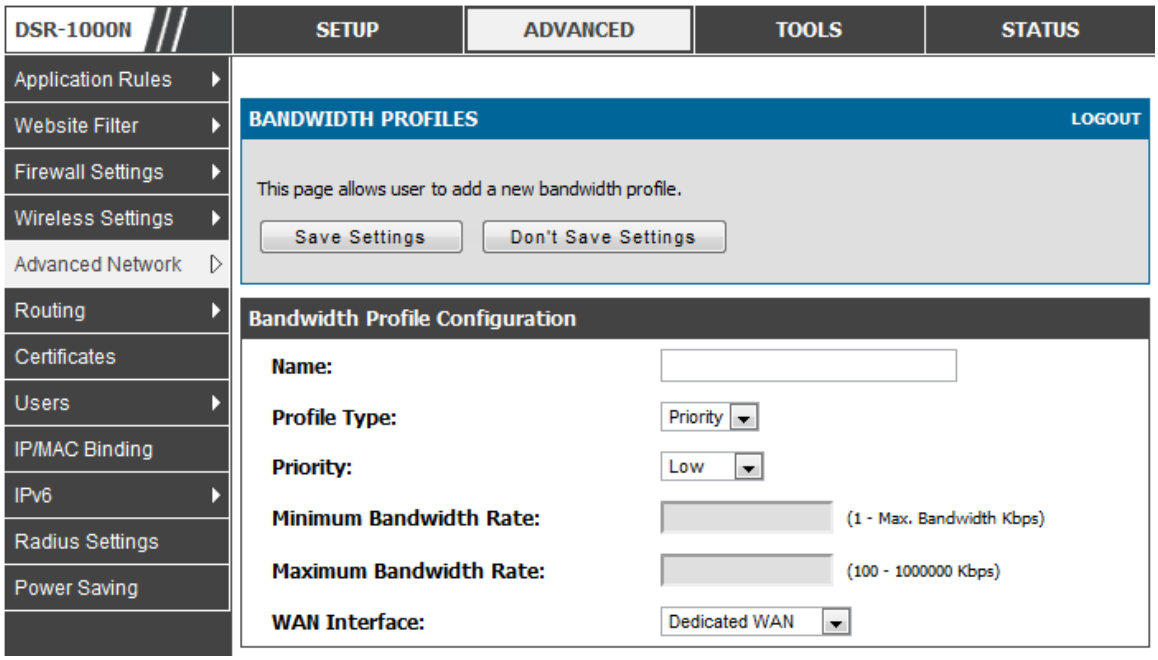
**Figure 19: List of Configured Bandwidth Profiles**




To create a new bandwidth profile, click Add in the List of Bandwidth Profiles. The following configuration parameters are used to define a bandwidth profile:

- Profile Name: This identifier is used to associate the configured profile to the traffic selector
- You can choose to limit the bandwidth either using priority or rate.
    - If using priority "Low", "High", and "Medium" can be selected. If there is a low priority profile associated with traffic selector A and a high priority profile associated with traffic selector B, then the WAN bandwidth allocation preference will be to traffic selector B packets.
    - For finer control, the Rate profile type can be used. With this option the minimum and maximum bandwidth allowed by this profile can be limited.
- Choose the WAN interface that the profile should be associated with.

**Figure 20: Bandwidth Profile Configuration page**

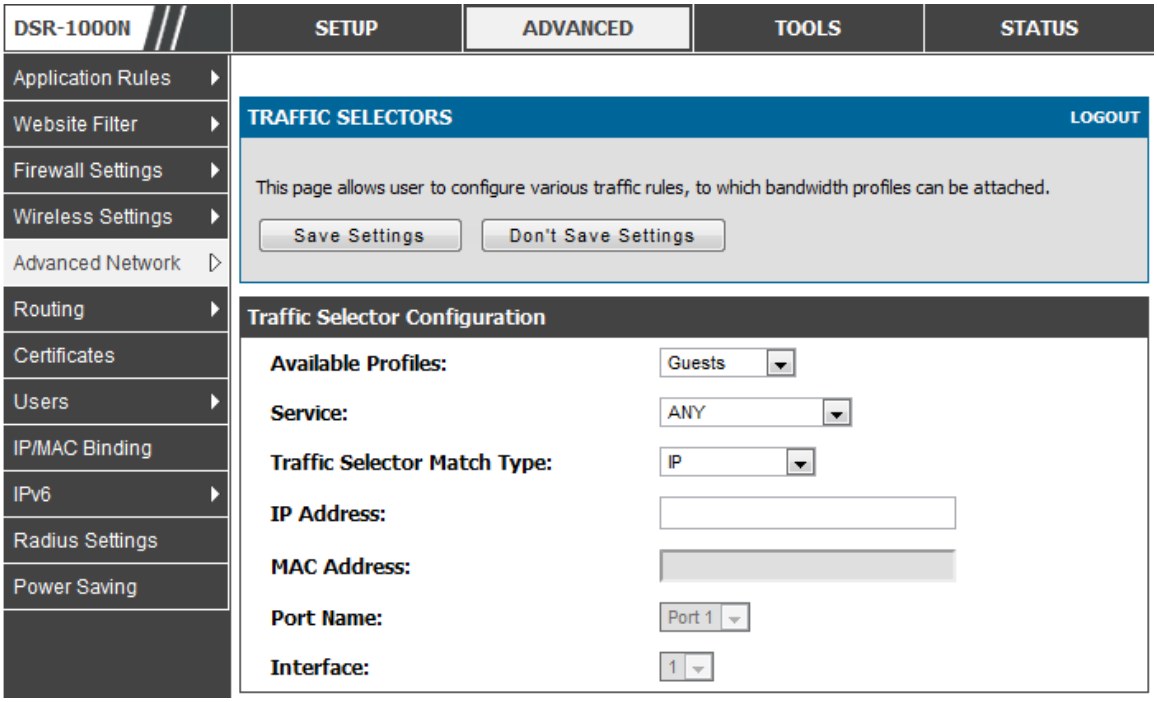



### *Advanced > Advanced Network > Traffic Management > Traffic Selectors*

Once a profile has been created it can then be associated with a traffic flow from the LAN to WAN. To create a traffic selector, click Add on the Traffic Selectors page. Traffic selector configuration binds a bandwidth profile to a type or source of LAN traffic with the following settings:

- Available profiles: Assign one of the defined bandwidth profiles
- Service: You can have the selected bandwidth regulation apply to a specific service (i.e. FTP) from the LAN. If you do not see a service that you want, you can configure a custom service through the ***Advanced > Firewall Settings > Custom Services*** page. To have the profile apply to all services, select ANY.
- Traffic Selector Match Type: this defines the parameter to filter against when applying the bandwidth profile. A specific machine on the LAN can be identified via IP address or MAC address, or the profile can apply to a LAN port or VLAN group. As well a wireless network can be selected by its BSSID for bandwidth shaping.

**Figure 21: Traffic Selector Configuration**




# 3.4 Features with Multiple WAN Links

This router supports multiple WAN links. This allows you to take advantage of failover and load balancing features to ensure certain internet dependent services are prioritized in the event of unstable WAN connectivity on one of the ports.

***Setup > Internet Settings > WAN Mode***

To use Auto Failover or Load Balancing, WAN link failure detection must be configured. This involves accessing DNS servers on the internet or ping to an internet address (user defined). If required, you can configure the number of retry attempts when the link seems to be disconnected or the threshold of failures that determines if a WAN port is down.

## 3.4.1 Auto Failover

In this case one of your WAN ports is assigned as the primary internet link for all internet traffic. The secondary WAN port is used for redundancy in case the primary link goes down for any reason. Both WAN ports (primary and secondary) must be configured to connect to the respective ISP's before enabling this feature. The secondary WAN port will remain unconnected until a failure is detected on the primary link (either port can be assigned as the primary). In the event of a failure on the primary port, all internet traffic will be rolled over to the backup port. When configured in Auto Failover mode, the link status of the primary WAN port is checked at regular intervals as defined by the failure detection settings.

Note that both WAN1, WAN2 and WAN3 can be configured as the primary internet link.

- Auto-Rollover using WAN port
- Primary WAN: Selected WAN is the primary link (WAN1/WAN2/WAN3)
- Secondary WAN: Selected WAN is the secondary link.

Failover Detection Settings: To check connectivity of the primary internet link, one of the following failure detection methods can be selected:

- DNS lookup using WAN DNS Servers: DNS Lookup of the DNS Servers of the primary link are used to detect primary WAN connectivity.
- DNS lookup using DNS Servers: DNS Lookup of the custom DNS Servers can be specified to check the connectivity of the primary link.
- Ping these IP addresses: These IP's will be pinged at regular intervals to check the connectivity of the primary link.
- Retry Interval is: The number tells the router how often it should run the above configured failure detection method.
- Failover after: This sets the number of retries after which failover is initiated.

## 3.4.2 Load Balancing

This feature allows you to use multiple WAN links (and presumably multiple ISP's) simultaneously. After configuring more than one WAN port, the load balancing option is available to carry traffic over more than one link. Protocol bindings are used to segregate and assign services over one WAN port in order to manage internet flow. The configured failure detection method is used at regular intervals on all configured WAN ports when in Load Balancing mode.

DSR currently support three algorithms for Load Balancing:

**Round Robin**: This algorithm is particularly useful when the connection speed of one WAN port greatly differs from another. In this case you can define protocol bindings to route low-latency services (such as VOIP) over the higher-speed link and let low-volume background traffic (such as SMTP) go over the lower speed link. Protocol binding is explained in next section.

**Spill Over**: If Spill Over method is selected, WAN1 acts as a dedicated link till a threshold is reached. After this, WAN2 will be used for new connections. You can configure spill-over mode by using folloing options:

- Load Tolerance: It is the percentage of bandwidth after which the router switches to secondary WAN.
- Max Bandwidth: This sets the maximum bandwidth tolerable by the primary WAN.

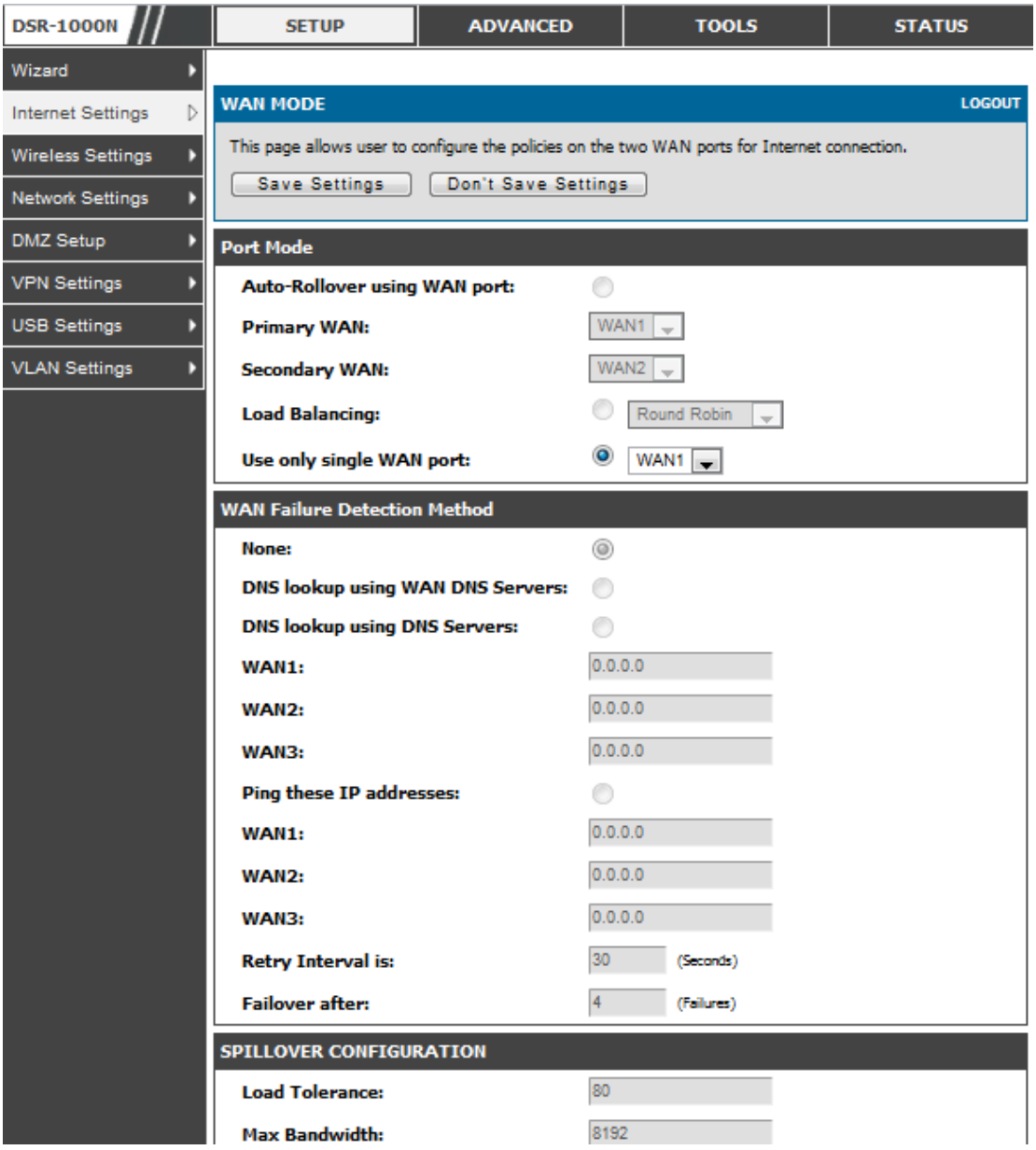
If the link bandwidth goes above the load tolerance value of max bandwidth, the router will spill-over the next connections to secondary WAN.

For example, if the maximum bandwidth of primary WAN is 1 Kbps and the load tolerance is set to 70. Now every time a new connection is established the bandwidth increases. After a certain number of connections say bandwidth reached 70% of 1Kbps, the new connections will be spilled-over to secondary WAN. The maximum value of load tolerance is 80 and the least is 20.

**Protocol Bindings**: Refer Section 3.4.3 for details

Load balancing is particularly useful when the connection speed of one WAN port greatly differs from another. In this case you can define protocol bindings to route low-latency services (such as VOIP) over the higher-speed link and let low-volume background traffic (such as SMTP) go over the lower speed link.

**Figure 22: Load Balancing is available when multiple WAN ports are configured and Protocol Bindings have been defined**



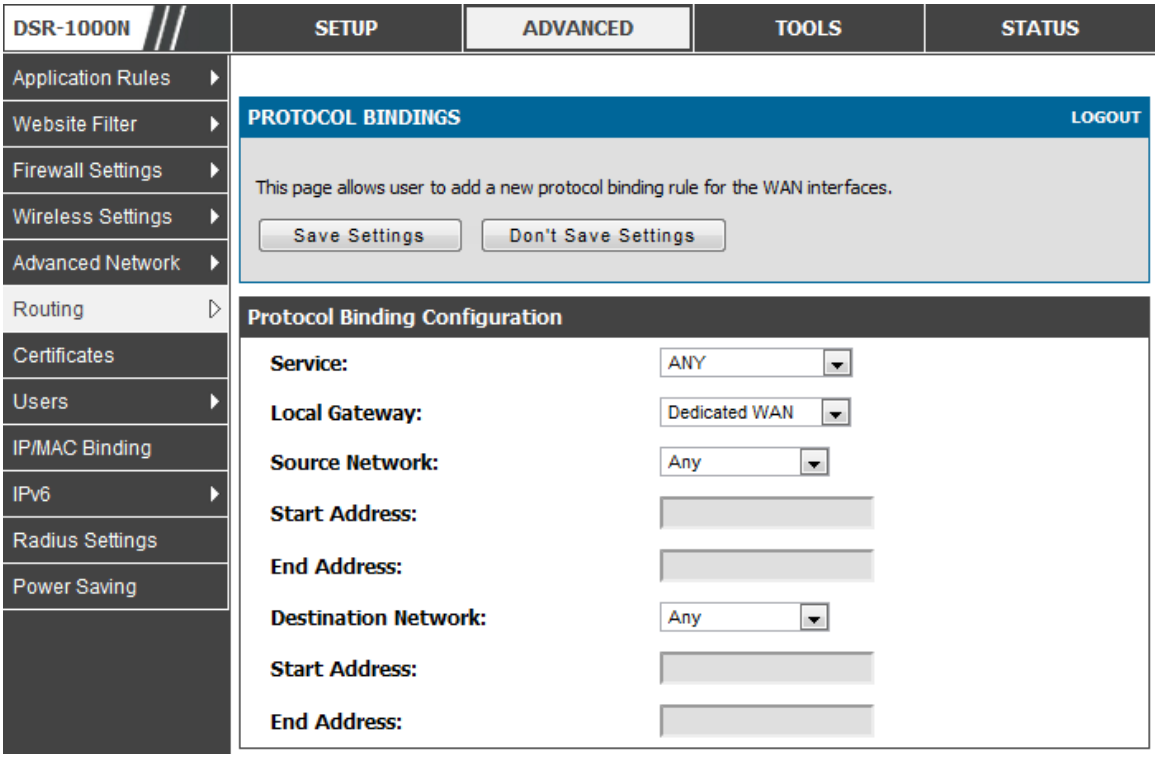

## 3.4.3 Protocol Bindings

***Advanced > Routing > Protocol Bindings***

Protocol bindings are required when the Load Balancing feature is in use. Choosing from a list of configured services or any of the user-defined services, the type of

traffic can be assigned to go over only one of the available WAN ports. For increased flexibility the source network or machines can be specified as well as the destination network or machines. For example the VOIP traffic for a set of LAN IP addresses can be assigned to one WAN and any VOIP traffic from the remaining IP addresses can be assigned to the other WAN link. Protocol bindings are only applicable when load balancing mode is enabled and more than one WAN is configured.

**Figure 23: Protocol binding setup to associate a service and/or LAN source to a WAN and/or destination network**




# 3.5 Routing Configuration

Routing between the LAN and WAN will impact the way this router handles traffic that is received on any of its physical interfaces. The routing mode of the gateway is core to the behaviour of the traffic flow between the secure LAN and the internet.

## 3.5.1 Routing Mode

***Setup > Internet Settings > Routing Mode***

This device supports classical routing, network address translation (NAT), and transport mode routing.

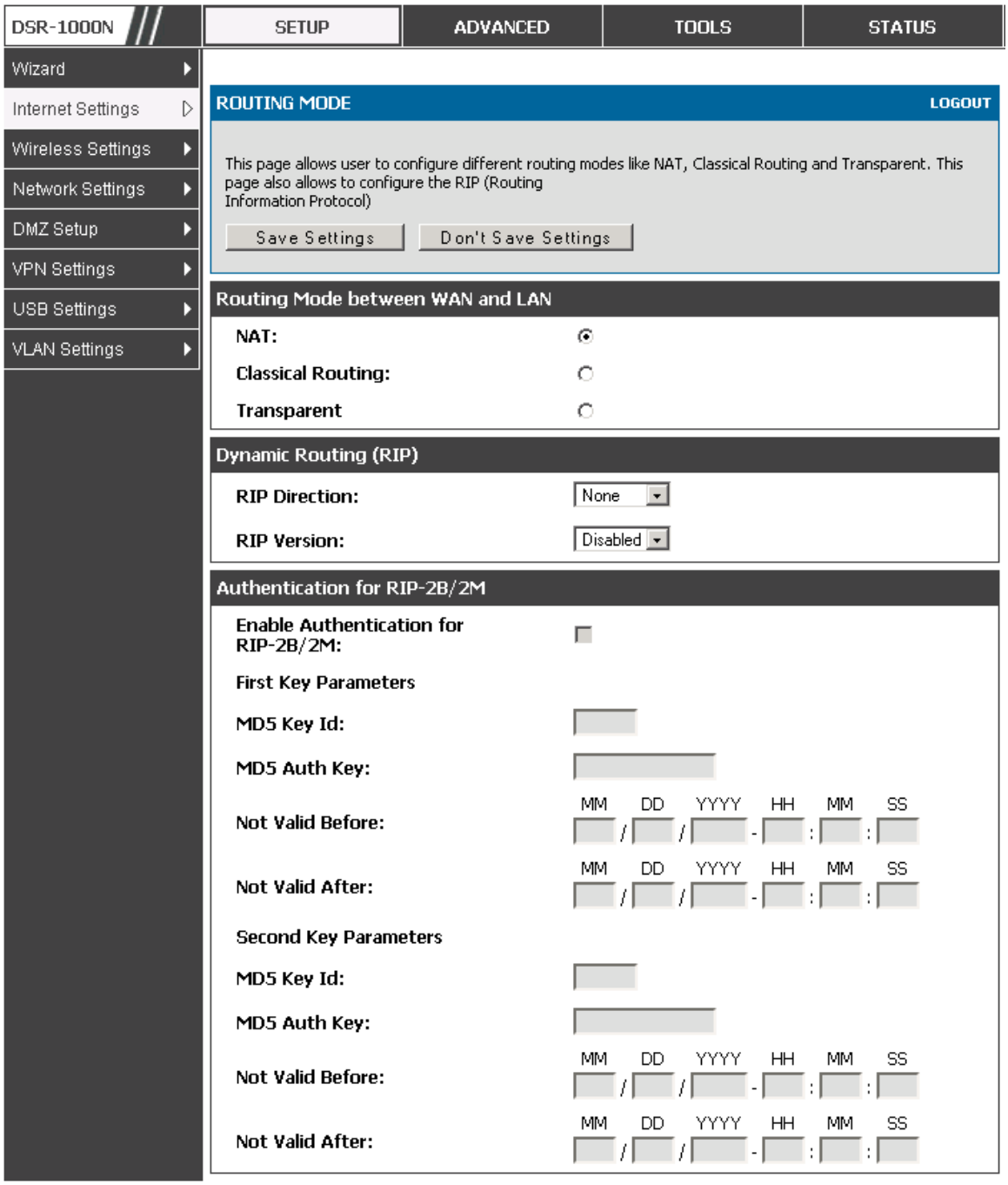
- With classical routing, devices on the LAN can be directly accessed from the internet by their public IP addresses (assuming appropriate firewall settings). If

your ISP has assigned an IP address for each of the computers that you use, select Classic Routing.

- NAT is a technique which allows several computers on a LAN to share an Internet connection. The computers on the LAN use a "private" IP address range while the WAN port on the router is configured with a single "public" IP address. Along with connection sharing, NAT also hides internal IP addresses from the computers on the Internet. NAT is required if your ISP has assigned only one IP address to you. The computers that connect through the router will need to be assigned IP addresses from a private subnet.
- Transparent routing between the LAN and WAN does not perform NAT. Broadcast and multicast packets that arrive on the LAN interface are switched to the WAN and vice versa, if they do not get filtered by firewall or VPN policies. To maintain the LAN and WAN in the same broadcast domain select Transparent mode, which allows bridging of traffic from LAN to WAN and vice versa, except for router-terminated traffic and other management traffic. All DSR features (such as 3G modem support) are supported in transparent mode assuming the LAN and WAN are configured to be in the same broadcast domain.

NAT routing has a feature called “NAT Hair-pinning” that allows internal network users on the LAN and DMZ to access internal servers (eg. an internal FTP server) using their externally-known domain name. This is also referred to as “NAT loopback” since LAN generated traffic is redirected through the firewall to reach LAN servers by their external name.

**Figure 24: Routing Mode is used to configure traffic routing between WAN and LAN, as well as Dynamic routing (RIP)**



## 3.5.2 Dynamic Routing (RIP)

DSR- 250/250N does not support RIP.

***Setup > Internet Settings > Routing Mode***

Dynamic routing using the Routing Information Protocol (RIP) is an Interior Gateway Protocol (IGP) that is common in LANs. With RIP this router can exchange routing information with other supported routers in the LAN and allow for dynamic adjustment of routing tables in order to adapt to modifications in the LAN without interrupting traffic flow.

The RIP direction will define how this router sends and receives RIP packets. Choose between:

- Both: The router both broadcasts its routing table and also processes RIP information received from other routers. This is the recommended setting in order to fully utilize RIP capabilities.
- Out Only: The router broadcasts its routing table periodically but does not accept RIP information from other routers.
- In Only: The router accepts RIP information from other routers, but does not broadcast its routing table.
- None: The router neither broadcasts its route table nor does it accept any RIP packets from other routers. This effectively disables RIP.
    - The RIP version is dependent on the RIP support of other routing devices in the LAN.
- Disabled: This is the setting when RIP is disabled.
- RIP-1 is a class-based routing version that does not include subnet information. This is the most commonly supported version.
- RIP-2 includes all the functionality of RIPv1 plus it supports subnet information. Though the data is sent in RIP-2 format for both RIP-2B and RIP-2M, the mode in which packets are sent is different. RIP-2B broadcasts data in the entire subnet while RIP-2M sends data to multicast addresses.

If RIP-2B or RIP-2M is the selected version, authentication between this router and other routers (configured with the same RIP version) is required. MD5 authentication is used in a first/second key exchange process. The authentication key validity lifetimes are configurable to ensure that the routing information exchange is with current and supported routers detected on the LAN.

# 3.5.3 Static Routing

***Advanced > Routing > Static Routing***

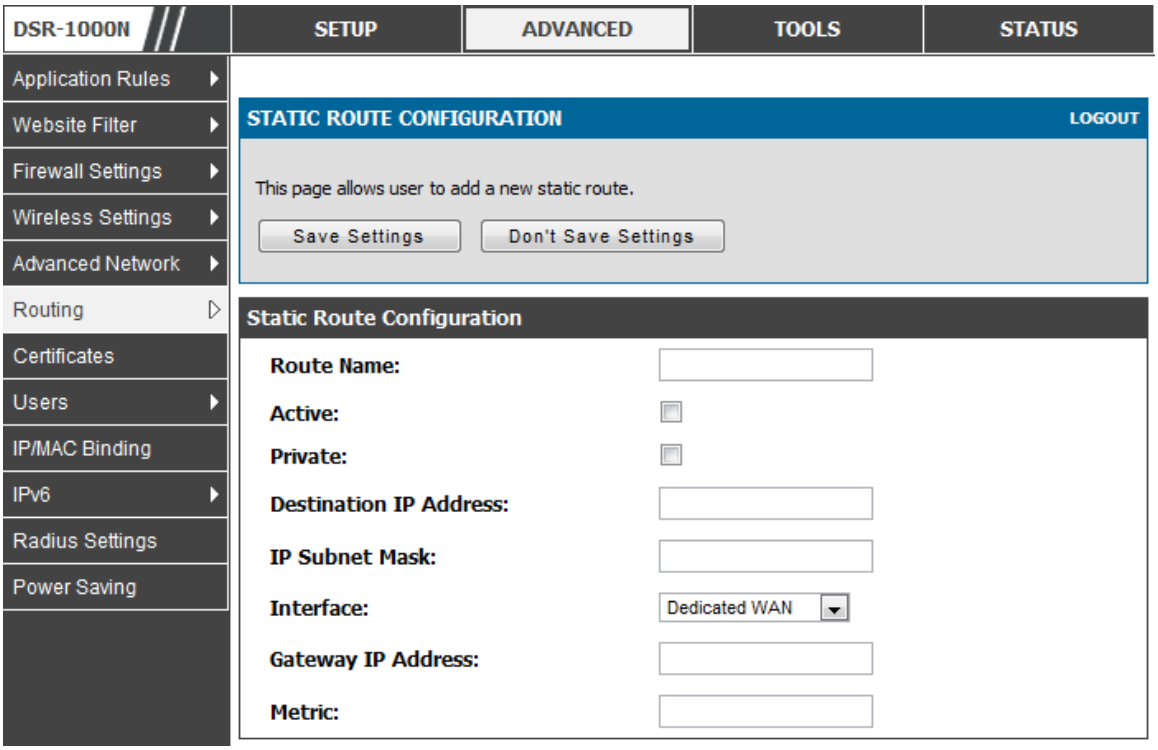
***Advanced > IPv6 > IPv6 Static Routing***

Manually adding static routes to this device allows you to define the path selection of traffic from one interface to another. There is no communication between this router and other devices to account for changes in the path; once configured the static route will be active and effective until the network changes.

The List of Static Routes displays all routes that have been added manually by an administrator and allows several operations on the static routes. The List of IPv4 Static Routes and List of IPv6 Static Routes share the same fields (with one exception):

- Name: Name of the route, for identification and management.
- Active: Determines whether the route is active or inactive. A route can be added to the table and made inactive, if not needed. This allows routes to be used as needed without deleting and re-adding the entry. An inactive route is not broadcast if RIP is enabled.
- Private: Determines whether the route can be shared with other routers when RIP is enabled. If the route is made private, then the route will not be shared in a RIP broadcast or multicast. This is only applicable for IPv4 static routes.
- Destination: the route will lead to this destination host or IP address.
- IP Subnet Mask: This is valid for IPv4 networks only, and identifies the subnet that is affected by this static route
- Interface: The physical network interface (WAN1, WAN2, WAN3, DMZ or LAN), through which this route is accessible.
- Gateway: IP address of the gateway through which the destination host or network can be reached.
- Metric: Determines the priority of the route. If multiple routes to the same destination exist, the route with the lowest metric is chosen.

**Figure 25: Static route configuration fields**




# 3.6 Configurable Port - WAN Option

This router supports one of the physical ports to be configured as a secondary WAN Ethernet port or a dedicated DMZ port. If the port is selected to be a secondary WAN interface, all configuration pages relating to WAN2 are enabled.

# 3.7 WAN 3 (3G) Configuration

This router supports one of the physical ports WAN3 to be configured for 3G internet access.

***Setup > Internet Settings > WAN3 Setup***

WAN3 configuration for the 3G USB modem is available only on WAN3 interface.

There are a few key elements of WAN 3 configuration.

- Reconnect Mode: Select one of the following options
    - Always On: The connection is always on. Username: Enter the username required to log in to the ISP.
    - On Demand: The connection is automatically ended if it is idle for a specified number of minutes. Enter the number of minutes in the

Maximum Idle Time field. This feature is useful if your ISP charges you based on the amount of time that you are connected.

- Password: Enter the password required to login to the ISP.
- Dial Number: Enter the number to dial to the ISP.
- Authentication Protocol: Select one of None, PAP or CHAP Authentication Protocols to connect to the ISP.
- APN: Enter the APN (Access Point Name) provided by the ISP.

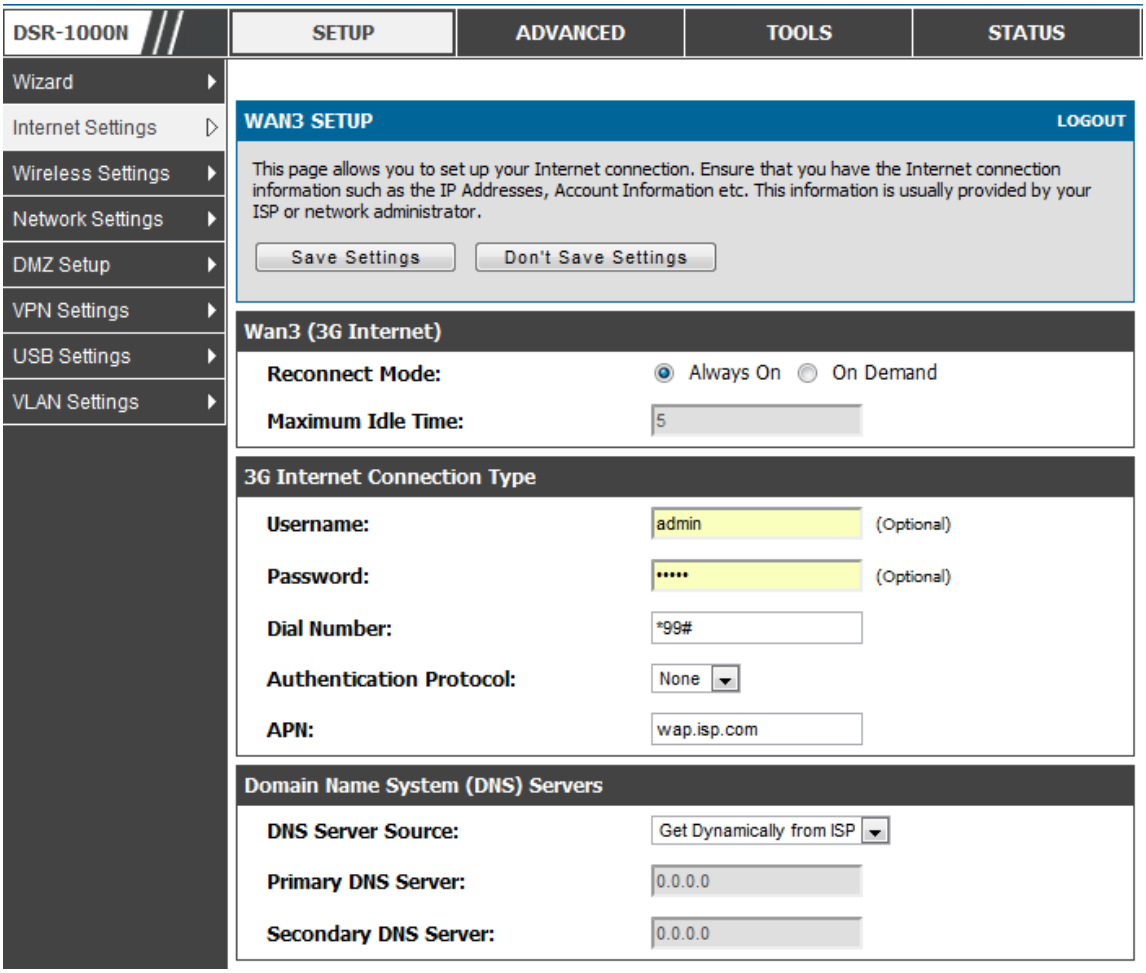
**Domain Name System (DNS) Servers**

- Domain name servers (DNS) convert Internet names such as www.dlink.com, to IP addresses to route traffic to the correct resources on the Internet. If you configure your router to get an IP address dynamically from the ISP, then you need to specify the DNS server source in this section.
- DNS Server Source: Choose one of the following options:
    - Get Dynamically from ISP: Choose this option if your ISP did not assign a static DNS IP address.
    - Use These DNS Servers: Choose this option if your ISP assigned a static DNS IP address for you to use. Also complete the fields that are highlighted white in this section.
    - Primary DNS Server: Enter a valid primary DNS Server IP Address.
    - Secondary DNS Server: Enter a valid secondary DNS Server IP Address.
- Configurable Port: This page allows you to assign the functionality intended for the Configurable Port. Choose from the following options:
    - WAN: If this option is selected, configure the WAN3. The WAN Mode options are now available as there are two WAN ports for the gateway.
    - DMZ: If this option is selected, you are able to configure the DMZ port on the DMZ Configuration menu.

Click Save Settings to save your changes.

Click Don't Save Settings to revert to the previous settings.

**Figure 26: WAN3 configuration for 3G internet**




> 3G WAN support is available on these dual WAN products: DSR-1000 and DSR-1000N.

Cellular 3G internet access is available on WAN3 via a 3G USB modem for DSR-1000 and DSR-1000N. The cellular ISP that provides the 3G data plan will provide the authentication requirements to establish a connection. The dial Number and APN are specific to the cellular carriers. Once the connection type settings are configured and saved, navigate to the WAN status page (***Setup > Internet Settings > WAN3 Status***) and Enable the WAN3 link to establish the 3G connection.

# 3.8 WAN Port Settings

***Advanced > Advanced Network > WAN Port Setup***

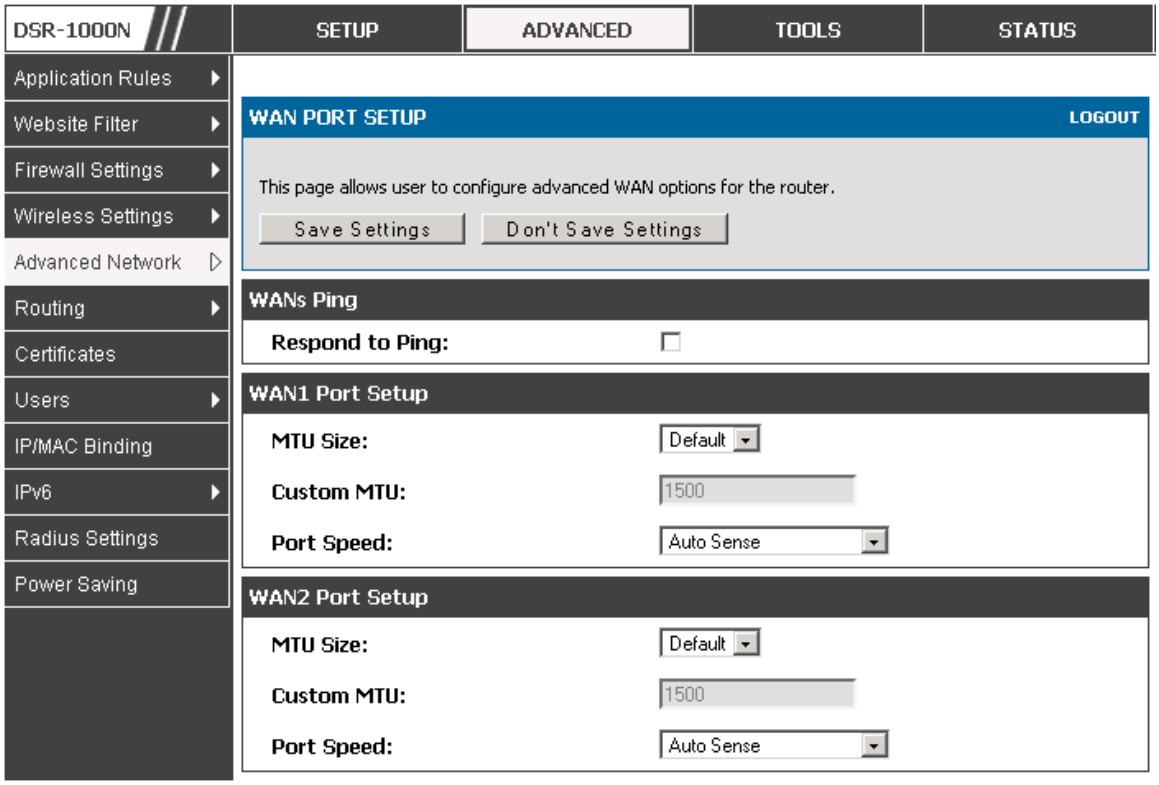
The physical port settings for each WAN link can be defined here. If your ISP account defines the WAN port speed or is associated with a MAC address, this information is required by the router to ensure a smooth connection with the network.

The default MTU size supported by all ports is 1500. This is the largest packet size that can pass through the interface without fragmentation. This size can be increased, however large packets can introduce network lag and bring down the interface speed. Note that a 1500 byte size packet is the largest allowed by the Ethernet protocol at the network layer.

The port speed can be sensed by the router when Auto is selected. With this option the optimal port settings are determined by the router and network. The duplex (half or full) can be defined based on the port support, as well as one of three port speeds: 10 Mbps, 100 Mbps and 1000 Mbps (i.e. 1 Gbps). The default setting is 100 Mbps for all ports.

The default MAC address is defined during the manufacturing process for the interfaces, and can uniquely identify this router. You can customize each WAN port's MAC address as needed, either by letting the WAN port assume the current LAN host's MAC address or by entering a MAC address manually.

**Figure 27: Physical WAN port settings**



# Chapter 4. Wireless Access Point Setup

This router has an integrated 802.11n radio that allows you to create an access point for wireless LAN clients. The security/encryption/authentication options are grouped in a wireless Profile, and each configured profile will be available for selection in the AP configuration menu. The profile defines various parameters for the AP, including the security between the wireless client and the AP, and can be shared between multiple APs instances on the same device when needed.

> The content in this section is applicable to the DSR-500N and DSR-1000N products.

Up to four unique wireless networks can be created by configuring multiple "virtual" APs. Each such virtual AP appears as an independent AP (unique SSID) to supported clients in the environment, but is actually running on the same physical radio integrated with this router.

You will need the following information to configure your wireless network:

- Types of devices expected to access the wireless network and their supported Wi-Fi™ modes
- The router's geographical region
- The security settings to use for securing the wireless network.

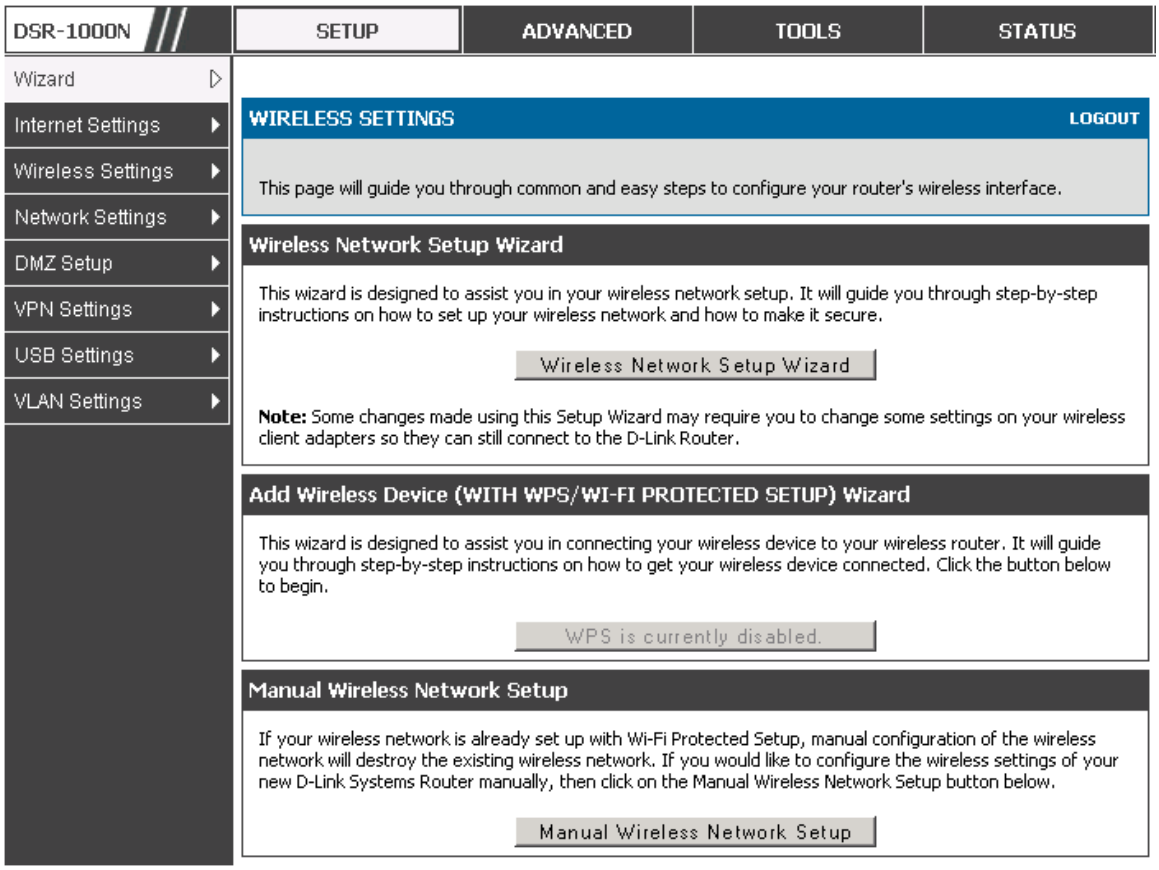
> Profiles may be thought of as a grouping of AP parameters that can then be applied to not just one but multiple AP instances (SSIDs), thus avoiding duplication if the same parameters are to be used on multiple AP instances or SSIDs.

## 4.1 Wireless Settings Wizard

***Setup > Wizard > Wireless Settings***

The Wireless Network Setup Wizard is available for users new to networking. By going through a few straightforward configuration pages you can enable a Wi-Fi™ network on your LAN and allow supported 802.11 clients to connect to the configured Access Point.

**Figure 28: Wireless Network Setup Wizards**




## 4.1.1 Wireless Network Setup Wizard

This wizard provides a step-by-step guide to create and secure a new access point on the router. The network name (SSID) is the AP identifier that will be detected by supported clients. The Wizard uses a TKIP+AES cipher for WPA / WPA2 security; depending on support on the client side, devices associate with this AP using either WPA or WPA2 security with the same pre-shared key.

The wizard has the option to automatically generate a network key for the AP. This key is the pre-shared key for WPA or WPA2 type security. Supported clients that have been given this PSK can associate with this AP. The default (auto-assigned) PSK is “passphrase”.

The last step in the Wizard is to click the Connect button, which confirms the settings and enables this AP to broadcast its availability in the LAN.

## 4.1.2 Add Wireless Device with WPS

With WPS enabled on your router, the selected access point allows supported WPS clients to join the network very easily. When the Auto option for connecting a wireless device is chose, you will be presented with two common WPS setup options:

- **Personal Identification Number (PIN):** The wireless device that supports WPS may have an alphanumeric PIN, and if entered in this field the AP will establish a link to the client. Click Connect to complete setup and connect to the client.
- **Push Button Configuration (PBC):** for wireless devices that support PBC, press and hold down on this button and within 2 minutes, click the PBC connect button. The AP will detect the wireless device and establish a link to the client.

> You need to enable at least one AP with WPA/WPA2 security and also enable WPS in the ***Advanced > Wireless Settings > WPS*** page to use the WPS wizard.

### 4.1.3 Manual Wireless Network Setup

This button on the Wizard page will link to the ***Setup> Wireless Settings> Access Points*** page. The manual options allow you to create new APs or modify the parameters of APs created by the Wizard.

## 4.2 Wireless Profiles

***Setup > Wireless Settings > Profiles***

The profile allows you to assign the security type, encryption and authentication to use when connecting the AP to a wireless client. The default mode is “open”, i.e. no security. This mode is insecure as it allows any compatible wireless clients to connect to an AP configured with this security profile.

To create a new profile, use a unique profile name to identify the combination of settings. Configure a unique SSID that will be the identifier used by the clients to communicate to the AP using this profile. By choosing to broadcast the SSID, compatible wireless clients within range of the AP can detect this profile’s availability.

The AP offers all advanced 802.11 security modes, including WEP, WPA, WPA2 and WPA+WPA2 options. The security of the Access point is configured by the Wireless Security Type section:

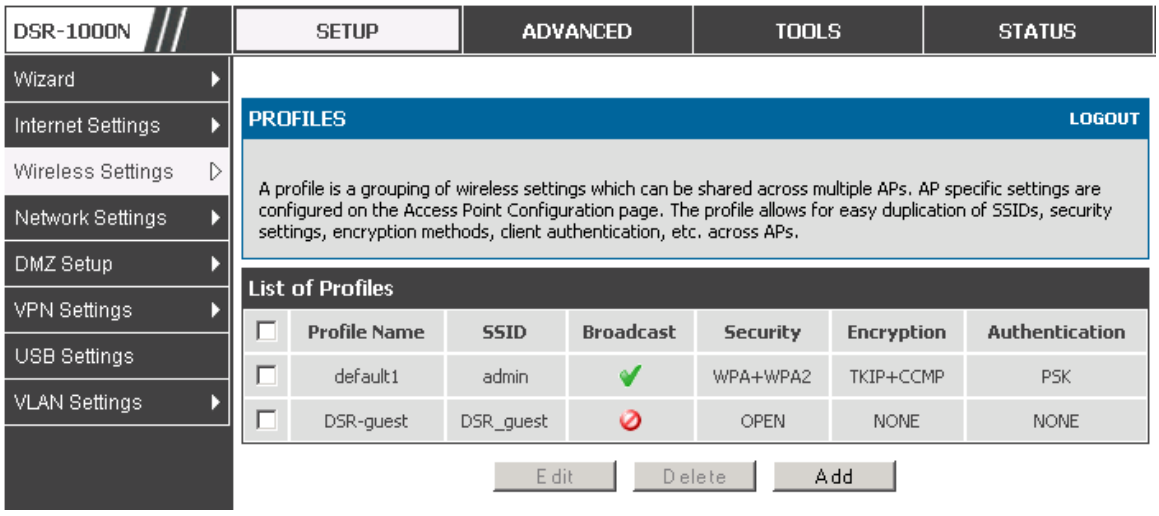
- Open: select this option to create a public “open” network to allow unauthenticated devices to access this wireless gateway.
- WEP (Wired Equivalent Privacy): this option requires a static (pre-shared) key to be shared between the AP and wireless client. Note that WEP does not support 802.11n data rates; is it appropriate for legacy 802.11 connections.
- WPA (Wi-Fi Protected Access): For stronger wireless security than WEP, choose this option. The encryption for WPA will use TKIP and also CCMP if required. The authentication can be a pre-shared key (PSK), Enterprise mode with RADIUS

server, or both. Note that WPA does not support 802.11n data rates; is it appropriate for legacy 802.11 connections.

- WPA2: this security type uses CCMP encryption (and the option to add TKIP encryption) on either PSK (pre-shared key) or Enterprise (RADIUS Server) authentication.
- WPA + WPA2: this uses both encryption algorithms, TKIP and CCMP. WPA clients will use TKIP and WPA2 clients will use CCMP encryption algorithms.

> "WPA+WPA2" is a security option that allows devices to connect to an AP using the strongest security that it supports. This mode allows legacy devices that only support WPA2 keys (such as an older wireless printer) to connect to a secure AP where all the other wireless clients are using WPA2.

**Figure 29: List of Available Profiles shows the options available to secure the wireless link**



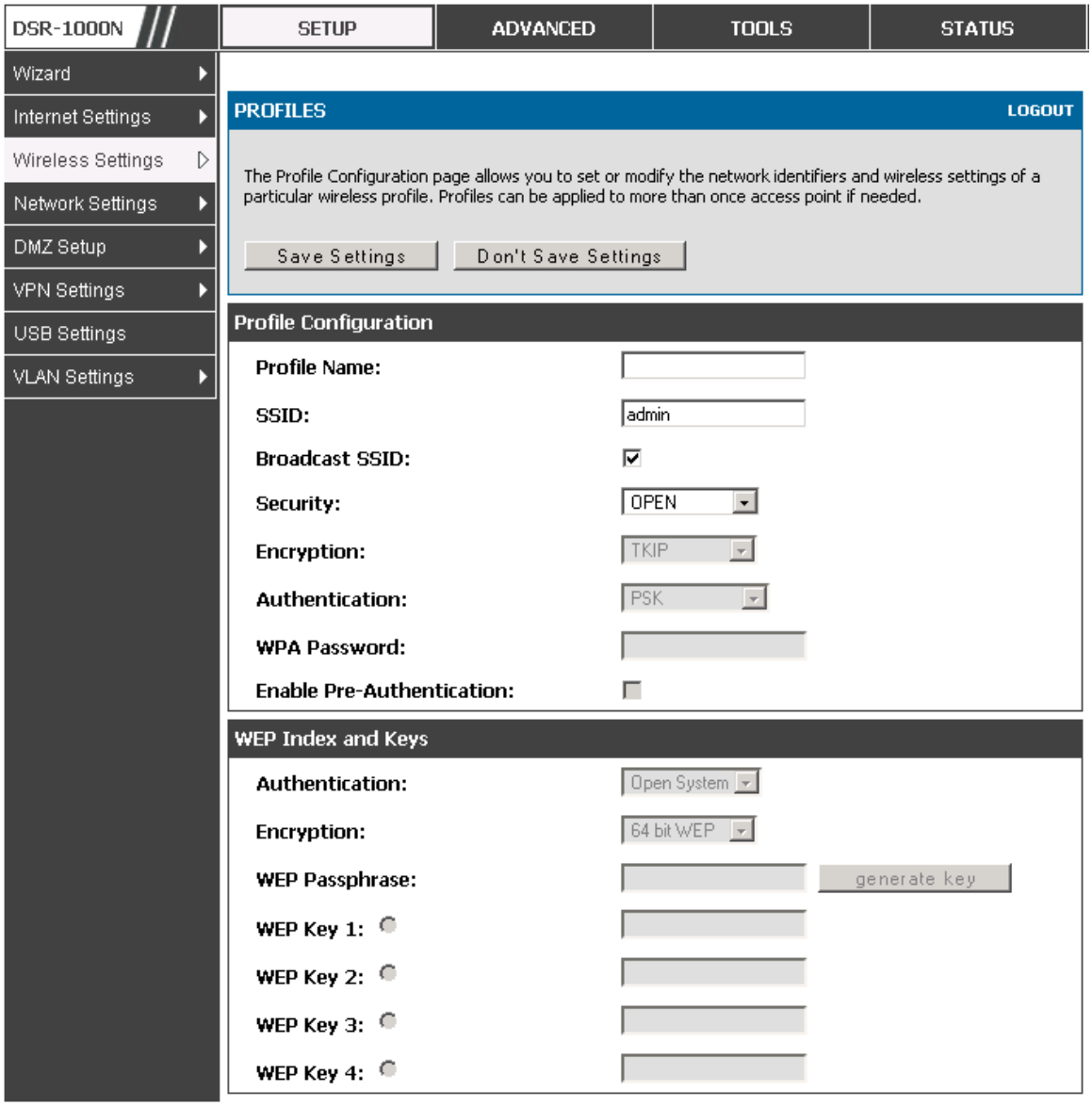

## 4.2.1 WEP Security

If WEP is the chosen security option, you must set a unique static key to be shared with clients that wish to access this secured wireless network. This static key can be generated from an easy-to-remember passphrase and the selected encryption length.

- Authentication: select between Open System, or Shared Key schemes
- Encryption: select the encryption key size -- 64 bit WEP or 128 bit WEP. The larger size keys provide stronger encryption, thus making the key more difficult to crack
- WEP Passphrase: enter an alphanumeric phrase and click Generate Key to generate 4 unique WEP keys with length determined by the encryption key

size. Next choose one of the keys to be used for authentication. The selected key must be shared with wireless clients to connect to this device.

**Figure 30: Profile configuration to set network security**




## 4.2.2 WPA or WPA2 with PSK

A pre-shared key (PSK) is a known passphrase configured on the AP and client both and is used to authenticate the wireless client. An acceptable passphrase is between 8 to 63 characters in length.

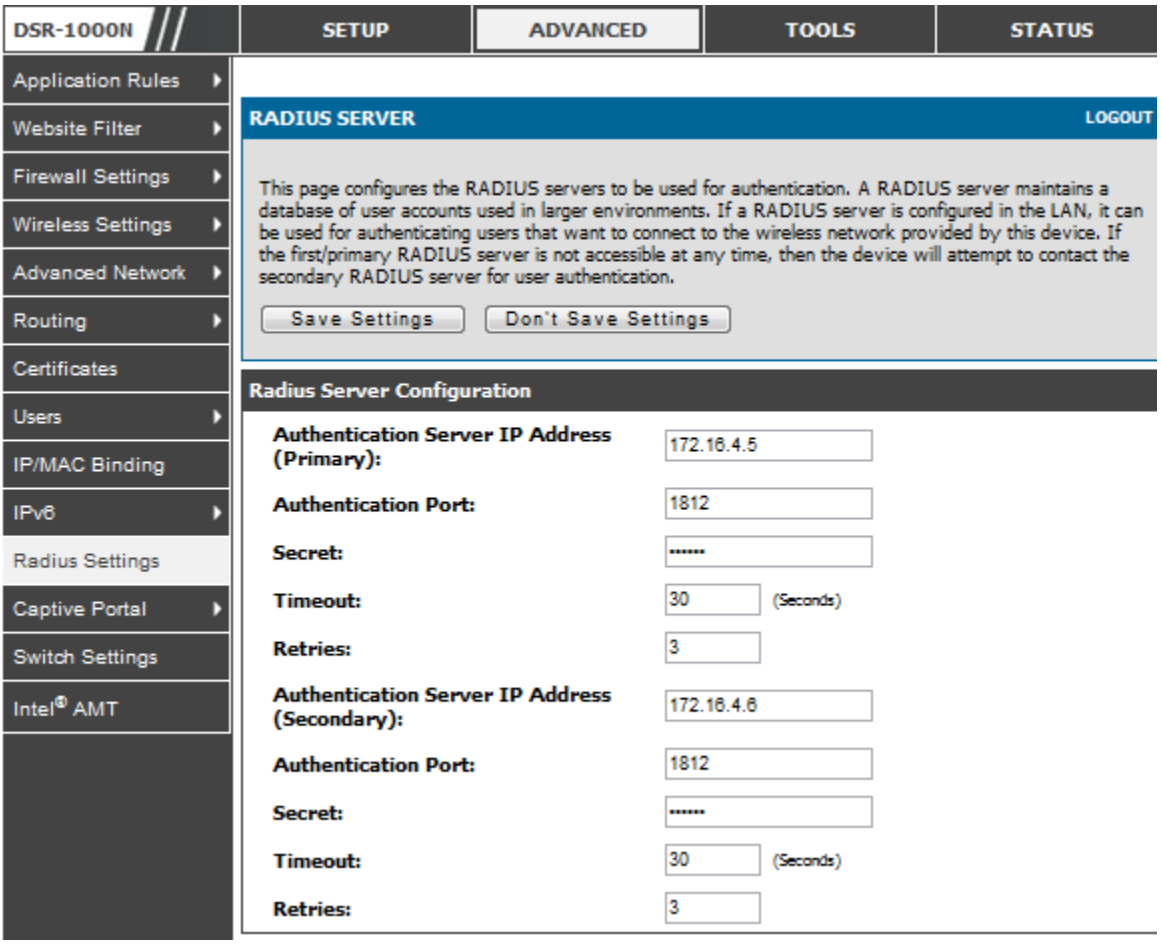
# 4.2.3 RADIUS Authentication

***Advanced > RADIUS Settings***

Enterprise Mode uses a RADIUS Server for WPA and/or WPA2 security. A RADIUS server must be configured and accessible by the router to authenticate wireless client connections to an AP enabled with a profile that uses RADIUS authentication.

- The Authentication IP Address is required to identify the server. A secondary RADIUS server provides redundancy in the event that the primary server cannot be reached by the router when needed.
- Authentication Port: the port for the RADIUS server connection
- Secret: enter the shared secret that allows this router to log into the specified RADIUS server(s). This key must match the shared secret on the RADIUS Server.
- The Timeout and Retries fields are used to either move to a secondary server if the primary cannot be reached, or to give up the RADIUS authentication attempt if communication with the server is not possible.

**Figure 31: RADIUS server (External Authentication) configuration**




# 4.3 Creating and Using Access Points

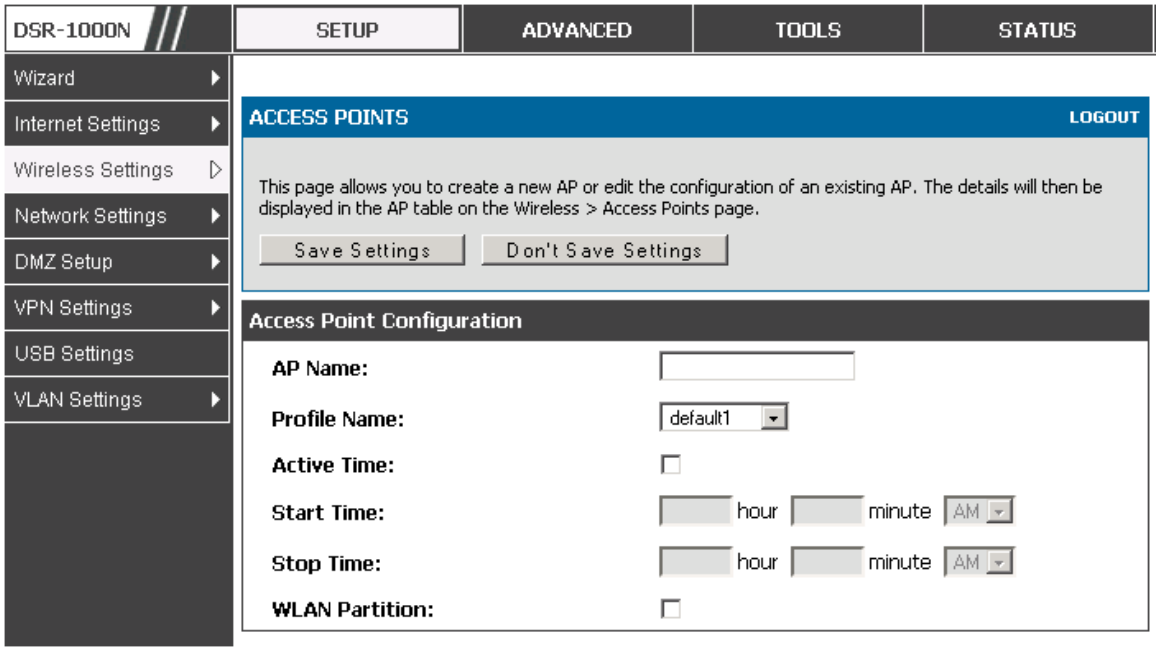
***Setup > Wireless Settings > Access Points***

Once a profile (a group of security settings) is created, it can be assigned to an AP on the router. The AP SSID can be configured to broadcast its availability to the 802.11 environment can be used to establish a WLAN network.

The AP configuration page allows you to create a new AP and link to it one of the available profiles. This router supports multiple AP's referred to as virtual access points (VAPs). Each virtual AP that has a unique SSIDs appears as an independent access point to clients. This valuable feature allows the router's radio to be configured in a way to optimize security and throughput for a group of clients as required by the user. To create a VAP, click the "add" button on the ***Setup > Wireless Settings > Access Points*** page. After setting the AP name, the profile dropdown menu is used to select one of the configured profiles.

> The AP Name is a unique identifier used to manage the AP from the GUI, and is not the SSID that is detected by clients when the AP has broadcast enabled.

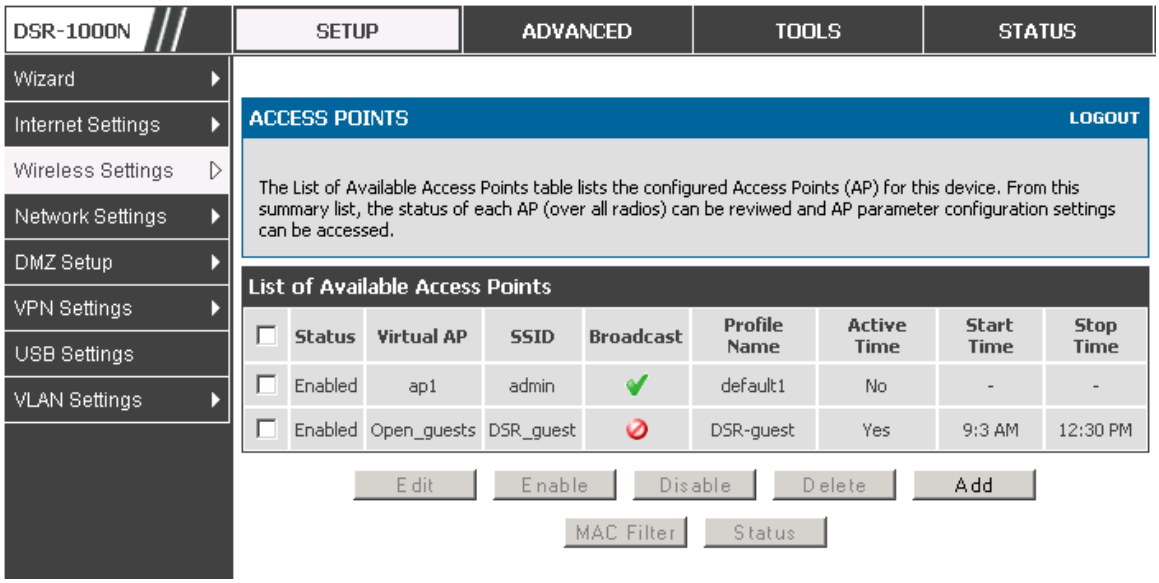
**Figure 32: Virtual AP configuration**




A valuable power saving feature is the start and stop time control for this AP. You can conserve on the radio power by disabling the AP when it is not in use. For example on evenings and weekends if you know there are no wireless clients, the start and stop time will enable/disable the access point automatically.

Once the AP settings are configured, you must enable the AP on the radio on the ***Setup > Wireless Settings > Access Points*** page. The status field changes to "Enabled" if the AP is available to accept wireless clients. If the AP is configured to broadcast its SSID (a profile parameter), a green check mark indicating it is broadcasting will be shown in the List of Available Access points.

**Figure 33: List of configured access points (Virtual APs) shows one enabled access point on the radio, broadcasting its SSID**




The clients connected to a particular AP can be viewed by using the Status Button on the List of Available Access Points. Traffic statistics are shown for that individual AP, as compared to the summary stats for each AP on the Statistics table. Connected clients are sorted by the MAC address and indicate the security parameters used by the wireless link, as well as the time connected to this particular AP. Clicking the Details button next to the connected client will give the detailed send and receive traffic statistics for the wireless link between this AP and the client.

## 4.3.1 Primary benefits of Virtual APs:

- Optimize throughput: if 802.11b, 802.11 g, and 802.11n clients are expected to access the LAN via this router, creating 3 VAPs will allow you to manage or shape traffic for each group of clients. A unique SSID can be created for the network of 802.11b clients and another SSID can be assigned for the 802.11n clients. Each can have different security parameters – remember, the SSID and security of the link is determined by the profile. In this way legacy clients can access the network without bringing down the overall throughput of more capable 802.11n clients.
- Optimize security: you may wish to support select legacy clients that only offer WEP security while using WPA2 security for the majority of clients for the radio. By creating two VAPs configured with different SSIDs and different security parameters, both types of clients can connect to the LAN. Since WPA2 is more secure, you may want to broadcast this SSID and not

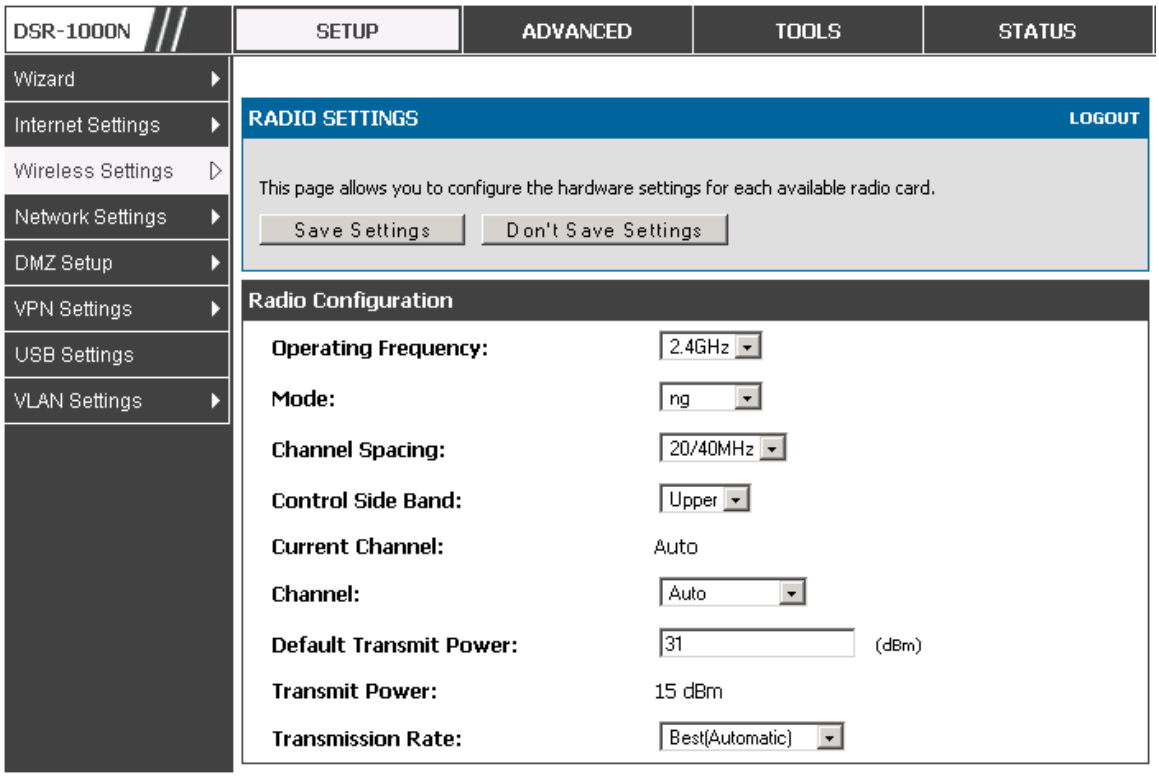
broadcast the SSID for the VAP with WEP since it is meant to be used for a few legacy devices in this scenario.

# 4.4 Tuning Radio Specific Settings

***Setup > Wireless Settings > Radio Settings***

The Radio Settings page lets you configure the channels and power levels available for the AP's enabled on the DSR. The router has a dual band 802.11n radio, meaning either 2.4 GHz or 5 GHz frequency of operation can be selected (not concurrently though). Based on the selected operating frequency, the mode selection will let you define whether legacy connections or only 802.11n connections (or both) are accepted on configured APs.

**Figure 34: Radio card configuration options**




The ratified 802.11n support on this radio requires selecting the appropriate broadcast (NA or NG etc.) mode, and then defining the channel spacing and control side band for 802.11n traffic. The default settings are appropriate for most networks. For example, changing the channel spacing to 40 MHz can improve bandwidth at the expense of supporting earlier 802.11n clients.

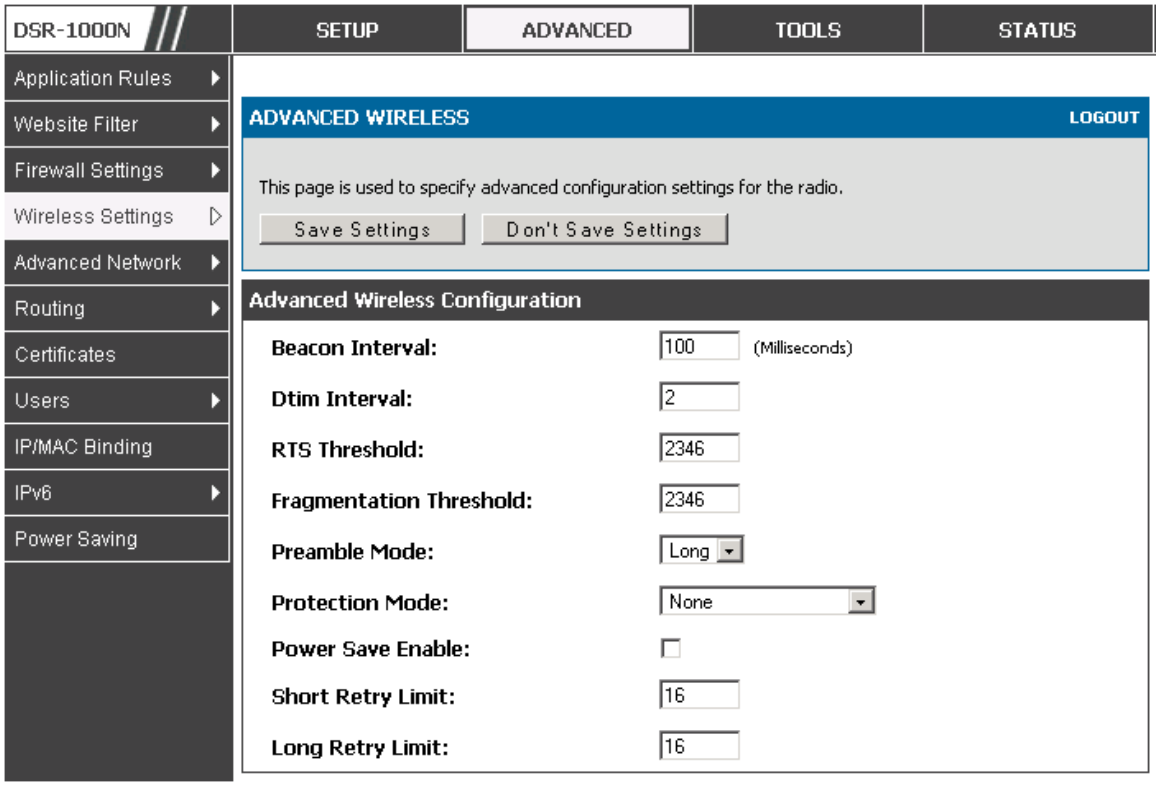
The available transmission channels are governed by regulatory constraints based on the region setting of the router. The maximum transmission power is similarly governed by regulatory limits; you have the option to decrease from the default maximum to reduce the signal strength of traffic out of the radio.

# 4.5 Advanced Wireless Settings

***Advanced > Wireless Settings > Advanced Wireless***

Sophisticated wireless administrators can modify the 802.11 communication parameters in this page. Generally, the default settings are appropriate for most networks. Please refer to the GUI integrated help text for further details on the use of each configuration parameter.

**Figure 35: Advanced Wireless communication settings**




# 4.6 Wi-Fi Protected Setup (WPS)

***Advanced > Wireless Settings > WPS***

WPS is a simplified method to add supporting wireless clients to the network. WPS is only applicable for APs that employ WPA or WPA2 security. To use WPS, select the eligible VAPs from the dropdown list of APs that have been configured with this security and enable WPS status for this AP.

The WPS Current Status section outlines the security, authentication, and encryption settings of the selected AP. These are consistent with the AP's profile. There are two setup options available for WPS:

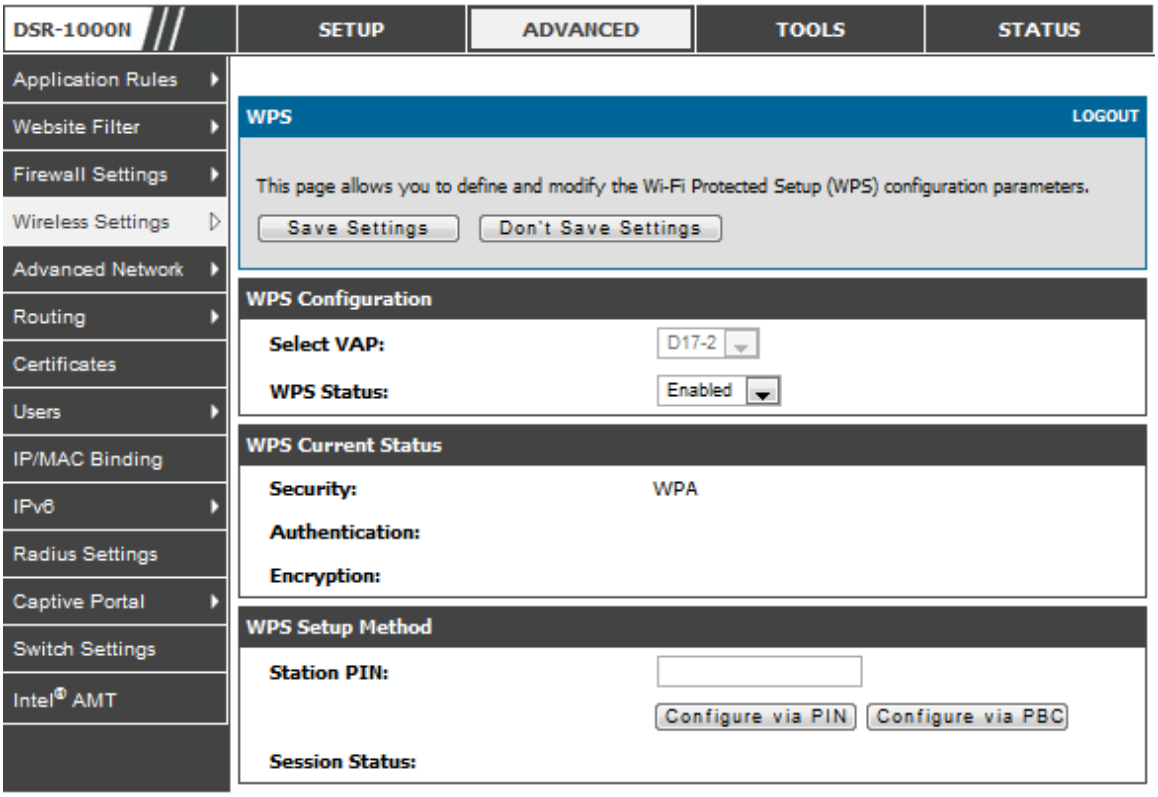
- **Personal Identification Number (PIN):** The wireless device that supports WPS may have an alphanumeric PIN, if so add the PIN in this field. The router will

connect within 60 seconds of clicking the "Configure via PIN" button immediately below the PIN field. There is no LED indication that a client has connected.

- **Push Button Configuration (PBC):** for wireless devices that support PBC, press and hold down on this button and within 2 minutes click the PBC connect button. The AP will detect the wireless device and establish a link to the client.

> More than one AP can use WPS, but only one AP can be used to establish WPS links to client at any given time.

**Figure 36: WPS configuration for an AP with WPA/WPA2 profile**



# Chapter 5. Securing the Private Network

You can secure your network by creating and applying rules that your router uses to selectively block and allow inbound and outbound Internet traffic. You then specify how and to whom the rules apply. To do so, you must define the following:

- Services or traffic types (examples: web browsing, VoIP, other standard services and also custom services that you define)
- Direction for the traffic by specifying the source and destination of traffic; this is done by specifying the "From Zone" (LAN/WAN/DMZ) and "To Zone" (LAN/WAN/DMZ)
- Schedules as to when the router should apply rules
- Any Keywords (in a domain name or on a URL of a web page) that the router should allow or block
- Rules for allowing or blocking inbound and outbound Internet traffic for specified services on specified schedules
- MAC addresses of devices that should not access the internet
- Port triggers that signal the router to allow or block access to specified services as defined by port number
- Reports and alerts that you want the router to send to you

You can, for example, establish restricted-access policies based on time-of-day, web addresses, and web address keywords. You can block Internet access by applications and services on the LAN, such as chat rooms or games. You can block just certain groups of PCs on your network from being accessed by the WAN or public DMZ network.

## 5.1 Firewall Rules

***Advanced > Firewall Settings > Firewall Rules***

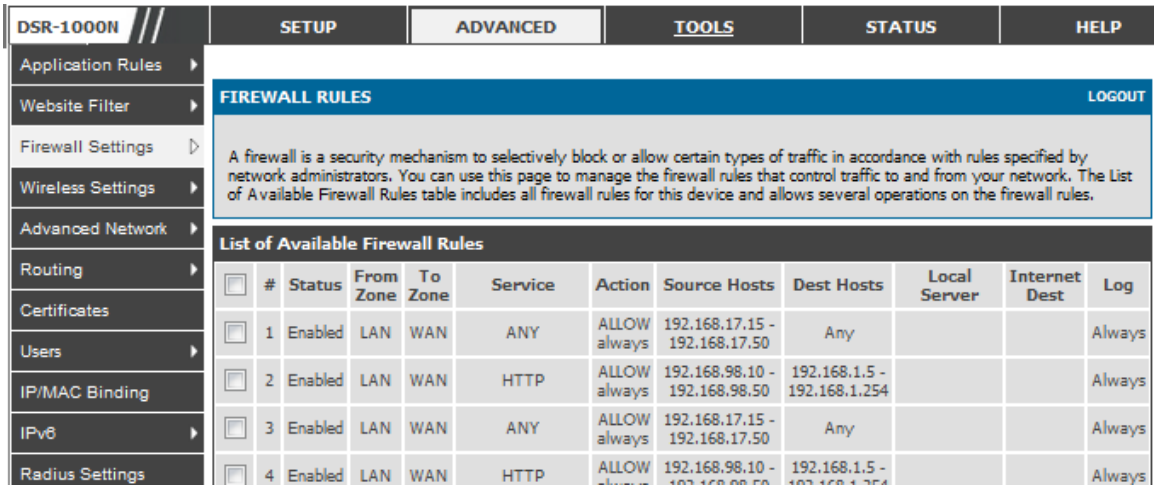
Inbound (WAN to LAN/DMZ) rules restrict access to traffic entering your network, selectively allowing only specific outside users to access specific local resources. By default all access from the insecure WAN side are blocked from accessing the secure LAN, except in response to requests from the LAN or DMZ. To allow outside devices to access services on the secure LAN, you must create an inbound firewall rule for each service.

If you want to allow incoming traffic, you must make the router's WAN port IP address known to the public. This is called "exposing your host." How you make your address known depends on how the WAN ports are configured; for this router you

may use the IP address if a static address is assigned to the WAN port, or if your WAN address is dynamic a DDNS (Dynamic DNS) name can be used.

Outbound (LAN/DMZ to WAN) rules restrict access to traffic leaving your network, selectively allowing only specific local users to access specific outside resources. The default outbound rule is to allow access from the secure zone (LAN) to either the public DMZ or insecure WAN. On other hand the default outbound rule is to deny access from DMZ to insecure WAN. You can change this default behaviour in the ***Firewall Settings > Default Outbound Policy*** page. When the default outbound policy is allow always, you can to block hosts on the LAN from accessing internet services by creating an outbound firewall rule for each service.

**Figure 37: List of Available Firewall Rules**



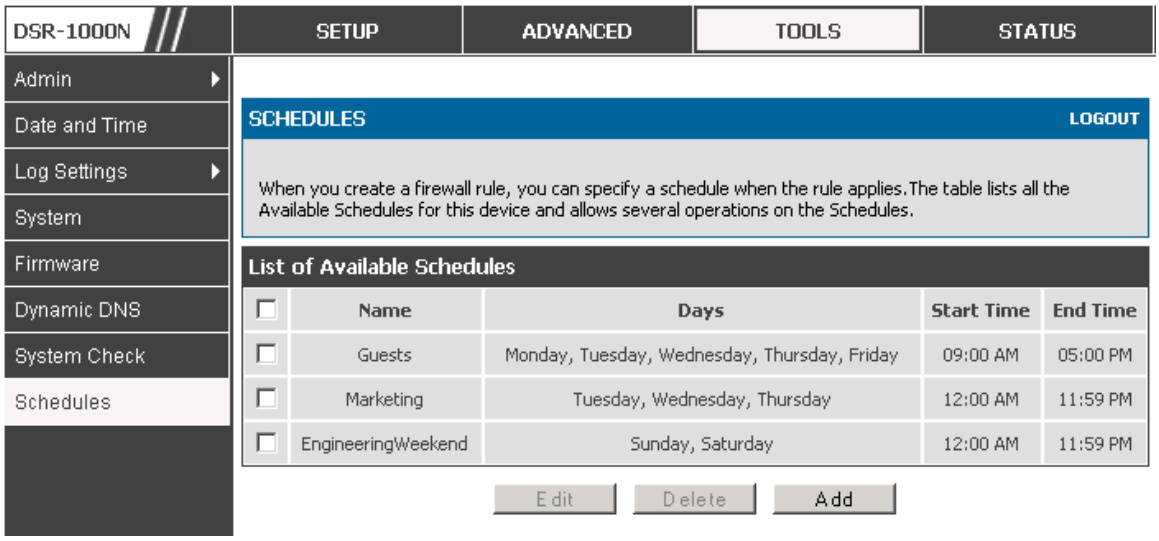

# 5.2 Defining Rule Schedules

### *Tools > Schedules*

Firewall rules can be enabled or disabled automatically if they are associated with a configured schedule. The schedule configuration page allows you to define days of the week and the time of day for a new schedule, and then this schedule can be selected in the firewall rule configuration page.

All schedules will follow the time in the routers configured time zone. Refer to the section on choosing your Time Zone and configuring NTP servers for more information.

**Figure 38: List of Available Schedules to bind to a firewall rule**




# 5.3 Configuring Firewall Rules

***Advanced > Firewall Settings > Firewall Rules***

All configured firewall rules on the router are displayed in the Firewall Rules list. This list also indicates whether the rule is enabled (active) or not, and gives a summary of the From/To zone as well as the services or users that the rule affects.

To create a new firewall rules, follow the steps below:

1. View the existing rules in the List of Available Firewall Rules table.
2. To edit or add an outbound or inbound services rule, do the following:

- To edit a rule, click the checkbox next to the rule and click Edit to reach that rule's configuration page.
- To add a new rule, click Add to be taken to a new rule's configuration page. Once created, the new rule is automatically added to the original table.

3. Chose the From Zone to be the source of originating traffic: either the secure LAN, public DMZ, or insecure WAN. For an inbound rule WAN should be selected as the From Zone.
4. Choose the To Zone to be the destination of traffic covered by this rule. If the From Zone is the WAN, the to Zone can be the public DMZ or secure LAN. Similarly if the From Zone is the LAN, then the To Zone can be the public DMZ or insecure WAN.
5. Parameters that define the firewall rule include the following:

- Service: ANY means all traffic is affected by this rule. For a specific service the drop down list has common services, or you can select a custom defined service.
- Action & Schedule: Select one of the 4 actions that this rule defines: BLOCK always, ALLOW always, BLOCK by schedule otherwise ALLOW, or ALLOW by schedule otherwise BLOCK. A schedule must be preconfigured in order for it to be available in the dropdown list to assign to this rule.
  - Source & Destination users: For each relevant category, select the users to which the rule applies:
    - Any (all users)
    - Single Address (enter an IP address)
    - Address Range (enter the appropriate IP address range)
  - Log: traffic that is filtered by this rule can be logged; this requires configuring the router's logging feature separately.
  - QoS Priority: Outbound rules (where To Zone = insecure WAN only) can have the traffic marked with a QoS priority tag. Select a priority level:
    - Normal-Service: ToS=0 (lowest QoS)
    - Minimize-Cost: ToS=1
    - Maximize-Reliability: ToS=2
    - Maximize-Throughput: ToS=4
  - Minimize-Delay: ToS=8 (highest QoS)

6. Inbound rules can use Destination NAT (DNAT) for managing traffic from the WAN. Destination NAT is available when the To Zone = DMZ or secure LAN.
   - With an inbound allow rule you can enter the internal server address that is hosting the selected service.
   - You can enable port forwarding for an incoming service specific rule (From Zone = WAN) by selecting the appropriate checkbox. This will allow the selected service traffic from the internet to reach the appropriate LAN port via a port forwarding rule.
   - Translate Port Number: With port forwarding, the incoming traffic to be forwarded to the port number entered here.

- External IP address: The rule can be bound to a specific WAN interface by selecting either the primary WAN or configurable port WAN as the source IP address for incoming traffic.

> This router supports multi-NAT and so the External IP address does not necessarily have to be the WAN address. On a single WAN interface, multiple public IP addresses are supported. If your ISP assigns you more than one public IP address, one of these can be used as your primary IP address on the WAN port, and the others can be assigned to servers on the LAN or DMZ. In this way the LAN/DMZ server can be accessed from the internet by its aliased public IP address.

7. Outbound rules can use Source NAT (SNAT) in order to map (bind) all LAN/DMZ traffic matching the rule parameters to a specific WAN interface or external IP address (usually provided by your ISP).

Once the new or modified rule parameters are saved, it appears in the master list of firewall rules. To enable or disable a rule, click the checkbox next to the rule in the list of firewall rules and choose Enable or Disable.

> The router applies firewall rules in the order listed. As a general rule, you should move the strictest rules (those with the most specific services or addresses) to the top of the list. To reorder rules, click the checkbox next to a rule and click up or down.

**Figure 39: Example where an outbound SNAT rule is used to map an external IP address (209.156.200.225) to a private DMZ IP address (10.30.30.30)**

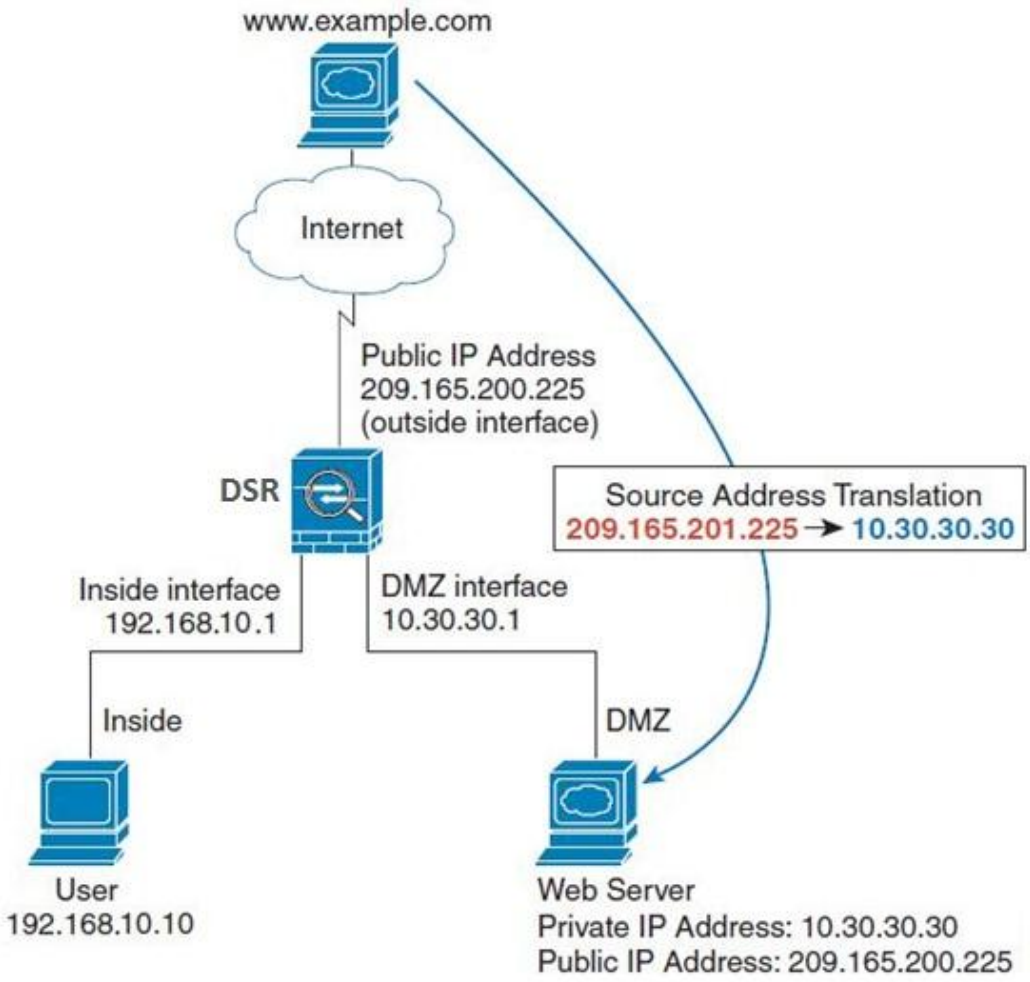
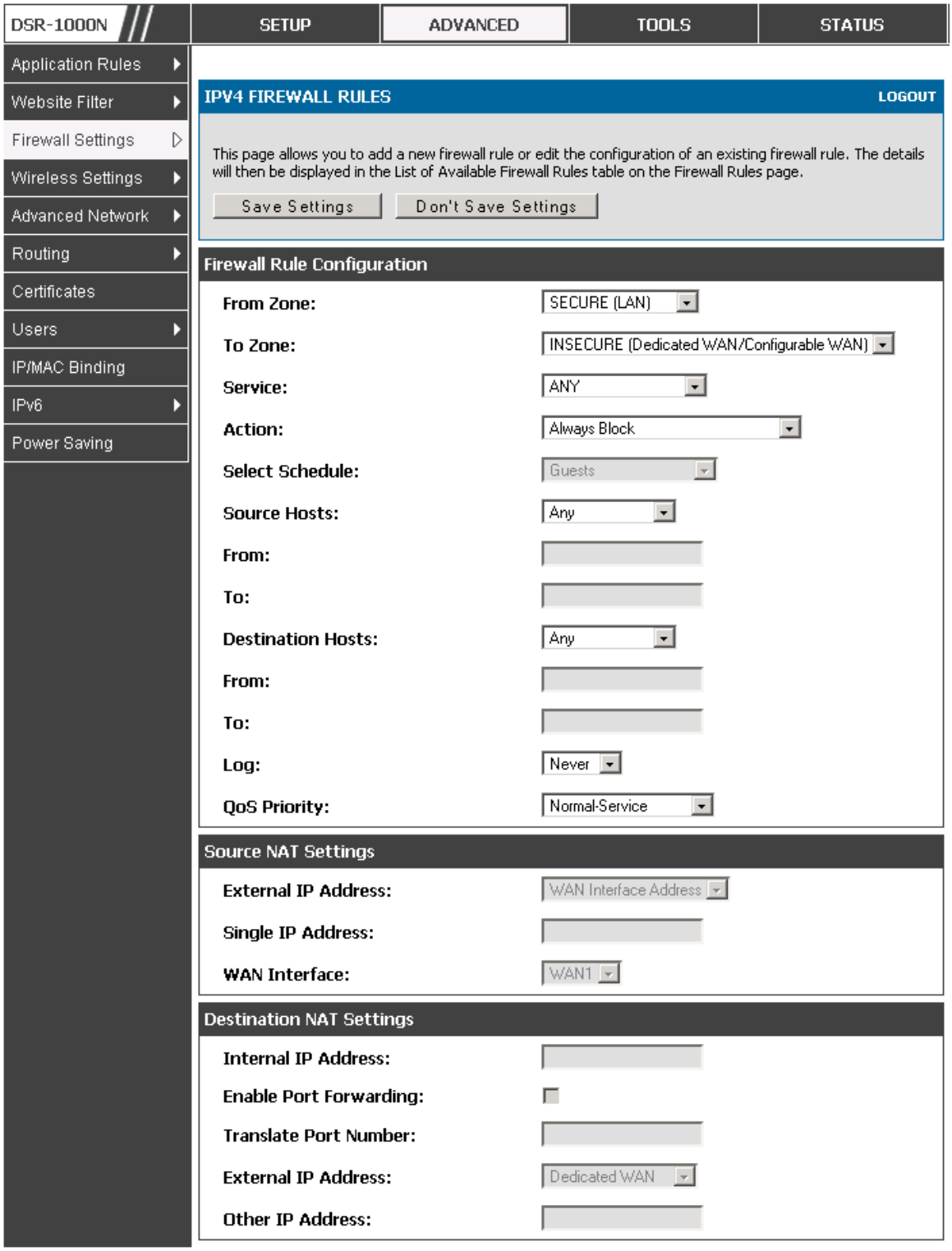


**Figure 40: The firewall rule configuration page allows you to define the To/From zone, service, action, schedules, and specify source/destination IP addresses as needed.**



## 5.3.1 Firewall Rule Configuration Examples

**Example 1:** Allow inbound HTTP traffic to the DMZ

**Situation:** You host a public web server on your local DMZ network. You want to allow inbound HTTP requests from any outside IP address to the IP address of your web server at any time of day.

**Solution:** Create an inbound rule as follows.

| Parameter | Value |
|---|---|
| From Zone | Insecure (WAN1/WAN2/WAN3) |
| To Zone | Public (DMZ) |
| Service | HTTP |
| Action | ALLOW always |
| Send to Local Server (DNAT IP) | 192.168.5.2 (web server IP address) |
| Destination Users | Any |
| Log | Never |

**Example 2:** Allow videoconferencing from range of outside IP addresses

**Situation:** You want to allow incoming videoconferencing to be initiated from a restricted range of outside IP addresses (132.177.88.2 - 132.177.88.254), from a branch office.

**Solution:** Create an inbound rule as follows. In the example, CUSeeMe (the video conference service used) connections are allowed only from a specified range of external IP addresses.

| Parameter | Value |
|---|---|
| From Zone | Insecure (WAN1/WAN2/WAN3) |
| To Zone | Secure (LAN) |
| Service | CU-SEEME:UDP |
| Action | ALLOW always |
| Send to Local Server (DNAT IP) | 192.168.10.11 |
| Destination Users | Address Range |
| From | 132.177.88.2 |
| To | 134.177.88.254 |
| Enable Port Forwarding | Yes (enabled) |

**Example 3:** Multi-NAT configuration

**Situation:** You want to configure multi-NAT to support multiple public IP addresses on one WAN port interface.

**Solution:** Create an inbound rule that configures the firewall to host an additional public IP address. Associate this address with a web server on the DMZ. If you arrange with your ISP to have more than one public IP address for your use, you can use the additional public IP addresses to map to servers on your LAN. One of these public IP addresses is used as the primary IP address of the router. This address is used to provide Internet access to your LAN PCs through NAT. The other addresses are available to map to your DMZ servers.

The following addressing scheme is used to illustrate this procedure:

- WAN IP address: 10.1.0.118
- LAN IP address: 192.168.10.1; subnet 255.255.255.0
- Web server host in the DMZ, IP address: 192.168.12.222
- Access to Web server: (simulated) public IP address 10.1.0.52

| Parameter | Value |
|---|---|
| From Zone | Insecure (WAN1/WAN2/WAN3) |
| To Zone | Public (DMZ) |
| Service | HTTP |
| Action | ALLOW always |
| Send to Local Server (DNAT IP) | 192.168.12.222 ( web server local IP address) |
| Destination Users | Single Address |
| From | 10.1.0.52 |
| WAN Users | Any |
| Log | Never |

**Example 4:** Block traffic by schedule if generated from specific range of machines

**Use Case:** Block all HTTP traffic on the weekends if the request originates from a specific group of machines in the LAN having a known range of IP addresses, and anyone coming in through the Network from the WAN (i.e. all remote users).

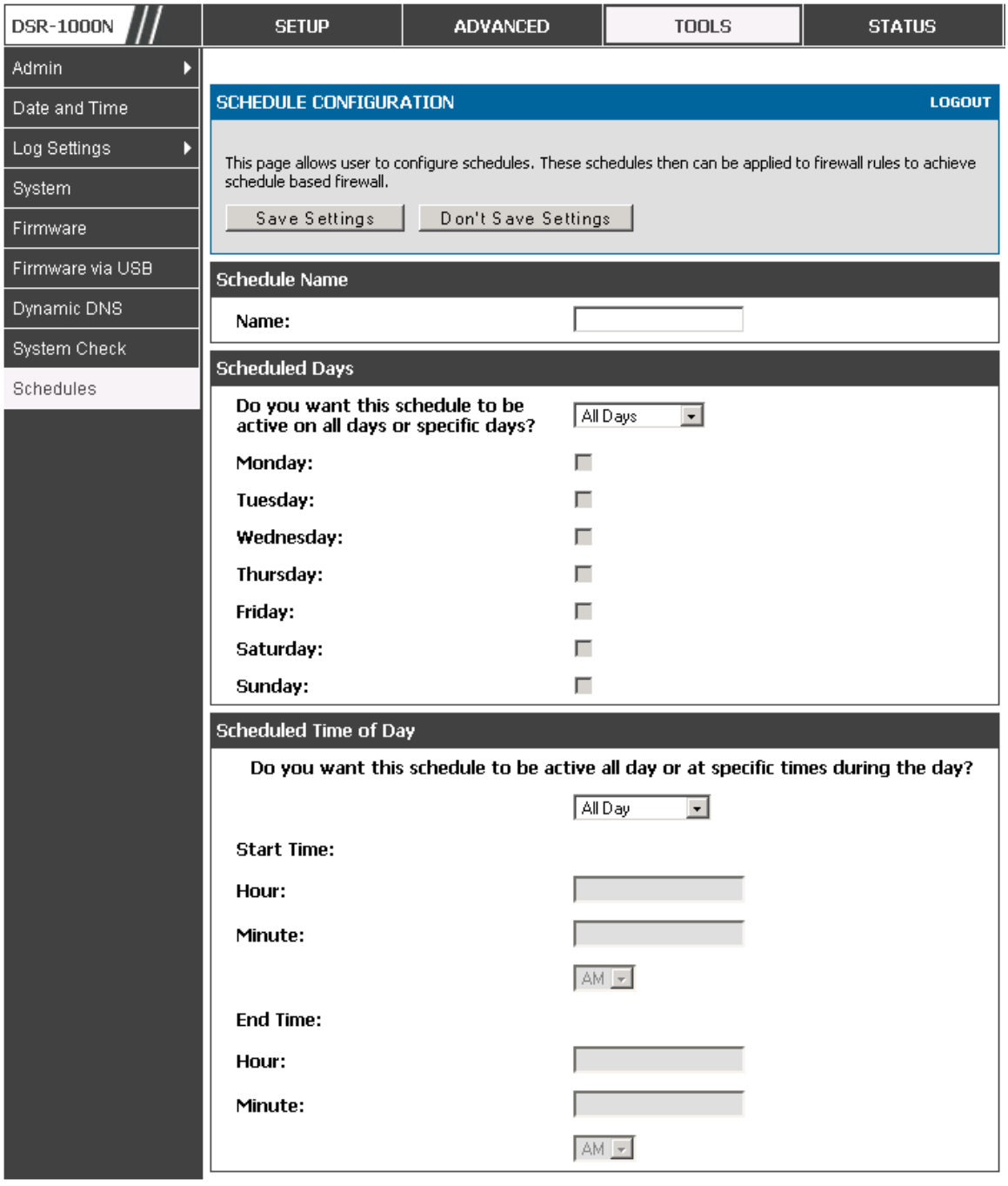
**Configuration:**

1. Setup a schedule:

- To setup a schedule that affects traffic on weekends only, navigate to Security: Schedule, and name the schedule “Weekend”
- Define “weekend” to mean 12 am Saturday morning to 12 am Monday morning – all day Saturday & Sunday

- In the Scheduled days box, check that you want the schedule to be active for "specific days". Select "Saturday" and "Sunday"
- In the scheduled time of day, select "all day" – this will apply the schedule between 12 am to 11:59 pm of the selected day.
- Click apply – now schedule "Weekend" isolates all day Saturday and Sunday from the rest of the week.

**Figure 41: Schedule configuration for the above example.**




2. Since we are trying to block HTTP requests, it is a service with To Zone: Insecure (WAN1/WAN2/WAN3) that is to be blocked according to schedule "Weekend".

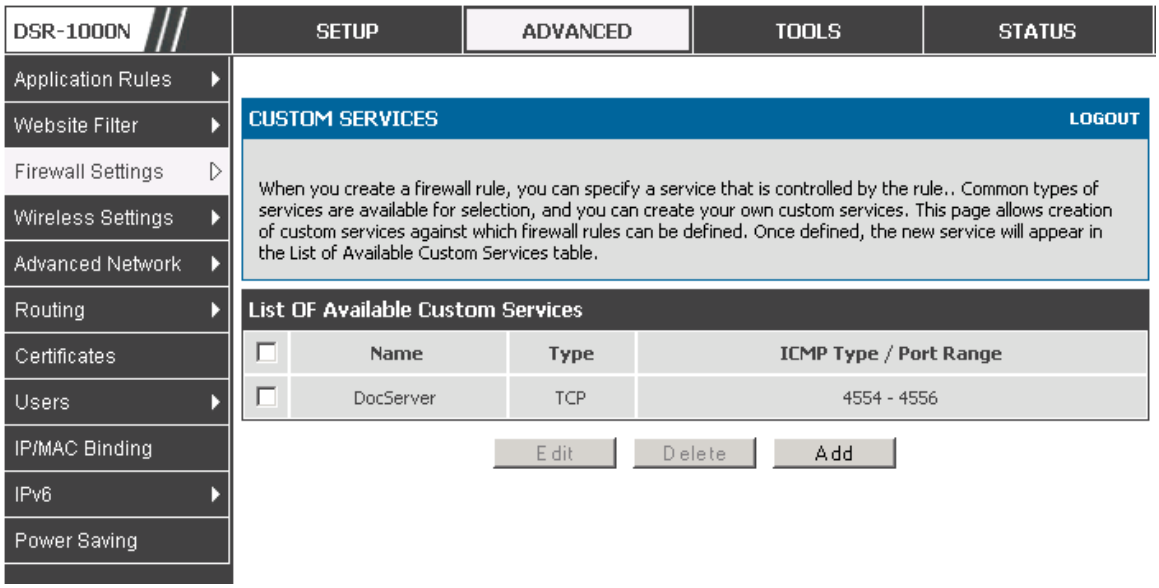
3. Select the Action to "Block by Schedule, otherwise allow". This will take a predefined schedule and make sure the rule is a blocking rule during the defined dates/times. All other times outside the schedule will not be affected by this firewall blocking rule
4. As we defined our schedule in schedule "Weekend", this is available in the dropdown menu
5. We want to block the IP range assigned to the marketing group. Let's say they have IP 192.168.10.20 to 192.168.10.30. On the Source Users dropdown, select Address Range and add this IP range as the from and To IP addresses.
6. We want to block all HTTP traffic to any services going to the insecure zone. The Destination Users dropdown should be "any".
7. We don't need to change default QoS priority or Logging (unless desired) – clicking apply will add this firewall rule to the list of firewall rules.
8. The last step is to enable this firewall rule. Select the rule, and click "enable" below the list to make sure the firewall rule is active

# 5.4 Security on Custom Services

***Advanced > Firewall Settings > Custom Services***

Custom services can be defined to add to the list of services available during firewall rule configuration. While common services have known TCP/UDP/ICMP ports for traffic, many custom or uncommon applications exist in the LAN or WAN. In the custom service configuration menu you can define a range of ports and identify the traffic type (TCP/UDP/ICMP) for this service. Once defined, the new service will appear in the services list of the firewall rules configuration menu.

**Figure 42: List of user defined services.**

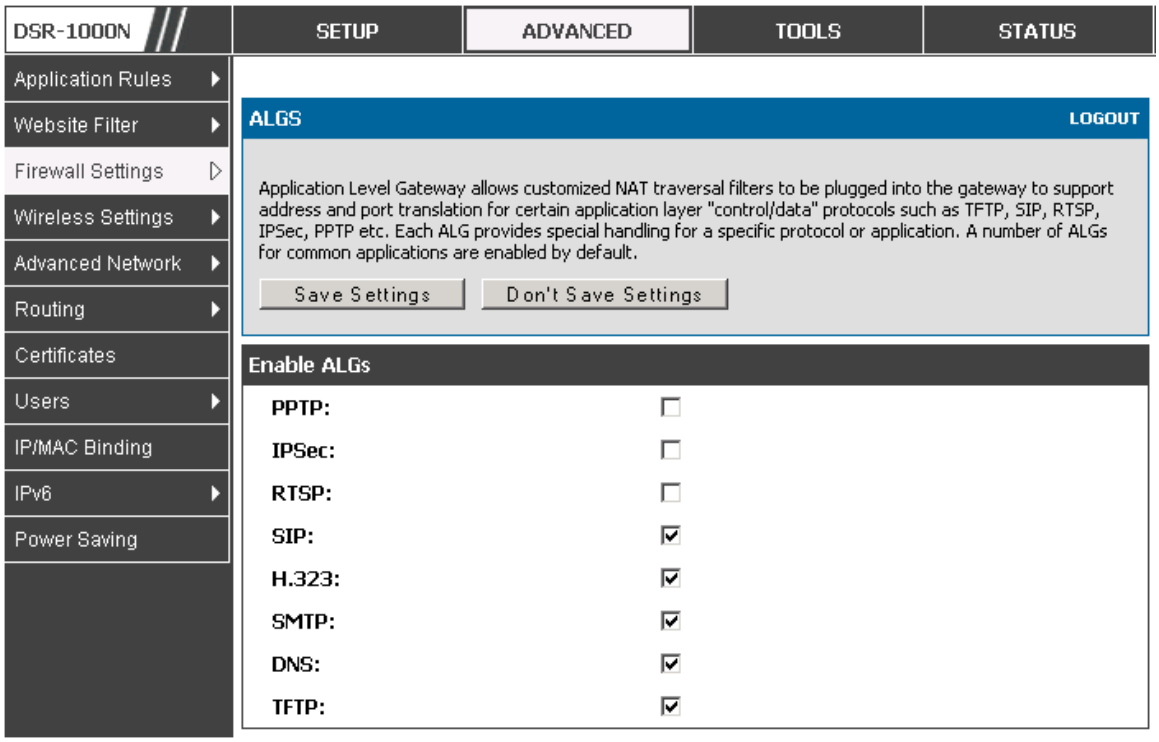



# 5.5 ALG support

### *Advanced > Firewall Settings > ALGs*

Application Level Gateways (ALGs) are security component that enhance the firewall and NAT support of this router to seamlessly support application layer protocols. In some cases enabling the ALG will allow the firewall to use dynamic ephemeral TCP/ UDP ports to communicate with the known ports a particular client application (such as H.323 or RTSP) requires, without which the admin would have to open large number of ports to accomplish the same support. Because the ALG understands the protocol used by the specific application that it supports, it is a very secure and efficient way of introducing support for client applications through the router's firewall.

**Figure 43: Available ALG support on the router.**

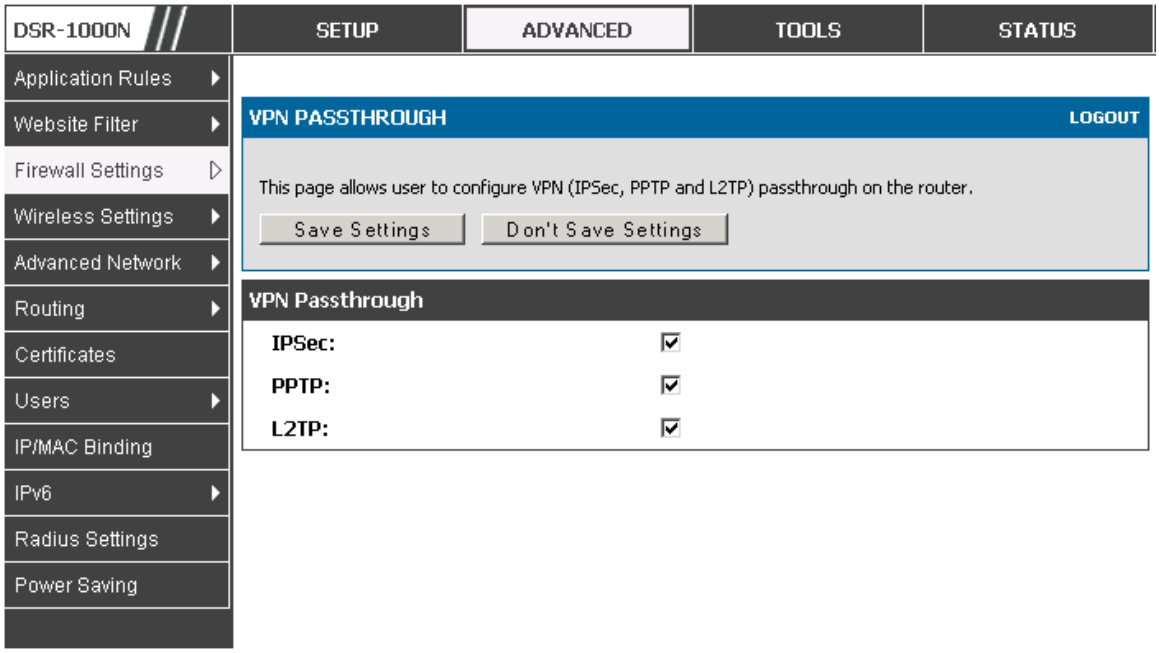



# 5.6 VPN Passthrough for Firewall

### *Advanced > Firewall Settings > VPN Passthrough*

This router's firewall settings can be configured to allow encrypted VPN traffic for IPsec, PPTP, and L2TP VPN tunnel connections between the LAN and internet. A specific firewall rule or service is not appropriate to introduce this passthrough support; instead the appropriate check boxes in the VPN Passthrough page must be enabled.

**Figure 44: Passthrough options for VPN tunnels**




# 5.7 Application Rules

### *Advanced > Application Rules > Application Rules*

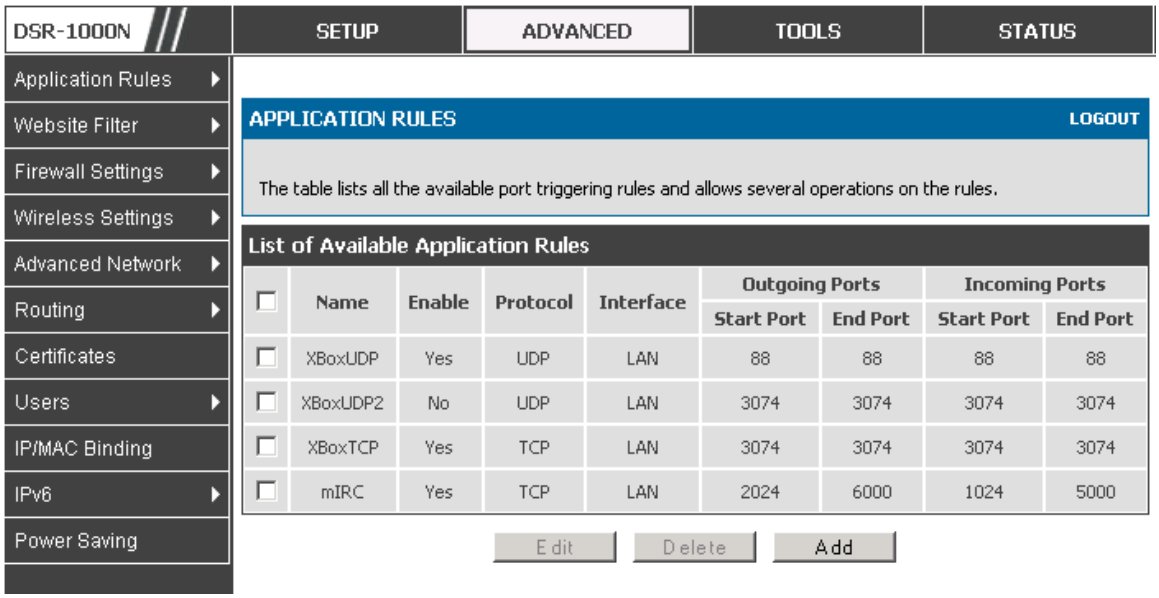
Application rules are also referred to as port triggering. This feature allows devices on the LAN or DMZ to request one or more ports to be forwarded to them. Port triggering waits for an outbound request from the LAN/DMZ on one of the defined outgoing ports, and then opens an incoming port for that specified type of traffic. This can be thought of as a form of dynamic port forwarding while an application is transmitting data over the opened outgoing or incoming port(s).

Port triggering application rules are more flexible than static port forwarding that is an available option when configuring firewall rules. This is because a port triggering rule does not have to reference a specific LAN IP or IP range. As well ports are not left open when not in use, thereby providing a level of security that port forwarding does not offer.

> Port triggering is not appropriate for servers on the LAN, since there is a dependency on the LAN device making an outgoing connection before incoming ports are opened.

Some applications require that when external devices connect to them, they receive data on a specific port or range of ports in order to function properly. The router must send all incoming data for that application only on the required port or range of ports. The router has a list of common applications and games with corresponding outbound and inbound ports to open. You can also specify a port triggering rule by defining the type of traffic (TCP or UDP) and the range of incoming and outgoing ports to open when enabled.

**Figure 45: List of Available Application Rules showing 4 unique rules**




The application rule status page will list any active rules, i.e. incoming ports that are being triggered based on outbound requests from a defined outgoing port.

# 5.8 Web Content Filtering

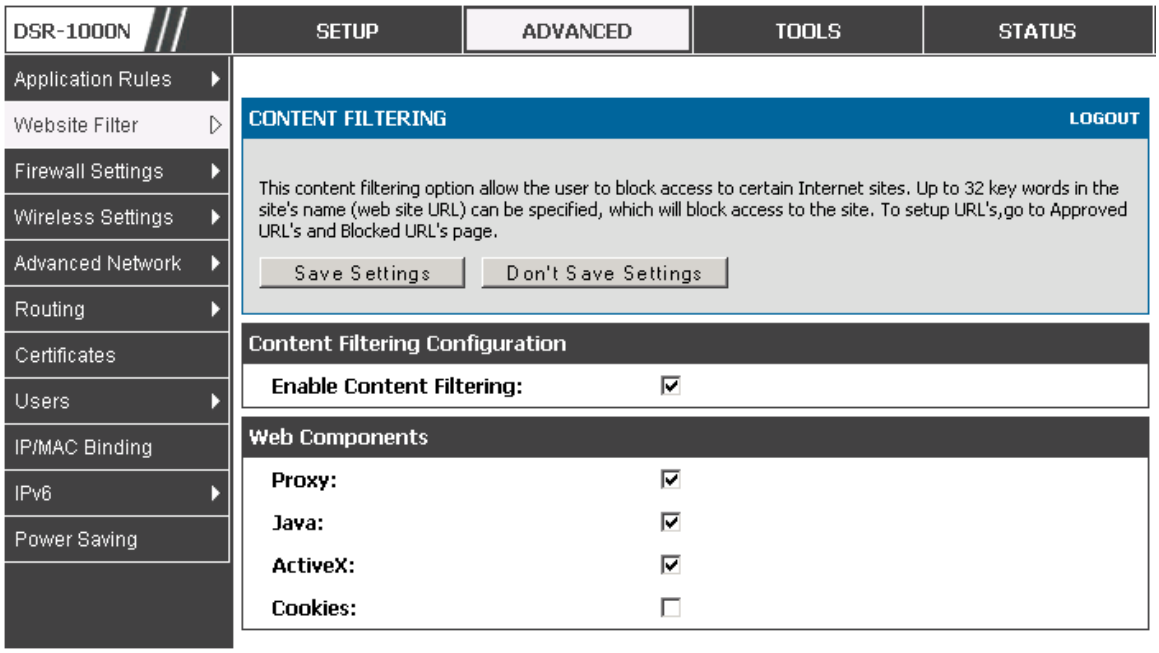
The gateway offers some standard web filtering options to allow the admin to easily create internet access policies between the secure LAN and insecure WAN. Instead of creating policies based on the type of traffic (as is the case when using firewall rules), web based content itself can be used to determine if traffic is allowed or dropped.

## 5.8.1 Content Filtering

***Advanced > Website Filter > Content Filtering***

Content filtering must be enabled to configure and use the subsequent features (list of Trusted Domains, filtering on Blocked Keywords, etc.). Proxy servers, which can be used to circumvent certain firewall rules and thus a potential security gap, can be blocked for all LAN devices. Java applets can be prevented from being downloaded from internet sites, and similarly the gateway can prevent ActiveX controls from being downloaded via Internet Explorer. For added security cookies, which typically contain session information, can be blocked as well for all devices on the private network.

**Figure 46: Content Filtering used to block access to proxy servers and prevent ActiveX controls from being downloaded**

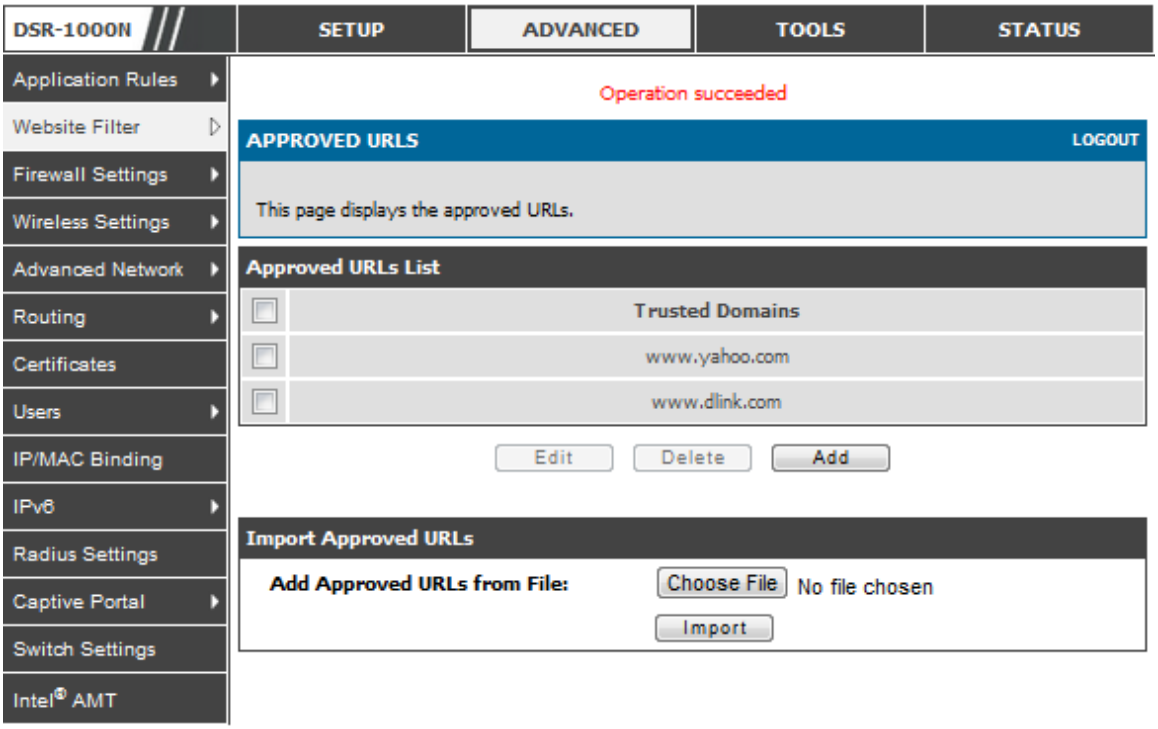



## 5.8.2 Approved URLs

***Advanced > Website Filter > Approved URLs***

The Approved URLs is an acceptance list for all URL domain names. Domains added to this list are allowed in any form. For example, if the domain "yahoo" is added to this list then all of the following URL's are permitted access from the LAN: www.yahoo.com, yahoo.co.uk, etc. Import/export from a text or CSV file for Approved URLs is also supported

**Figure 47: Two trusted domains added to the Approved URLs List**

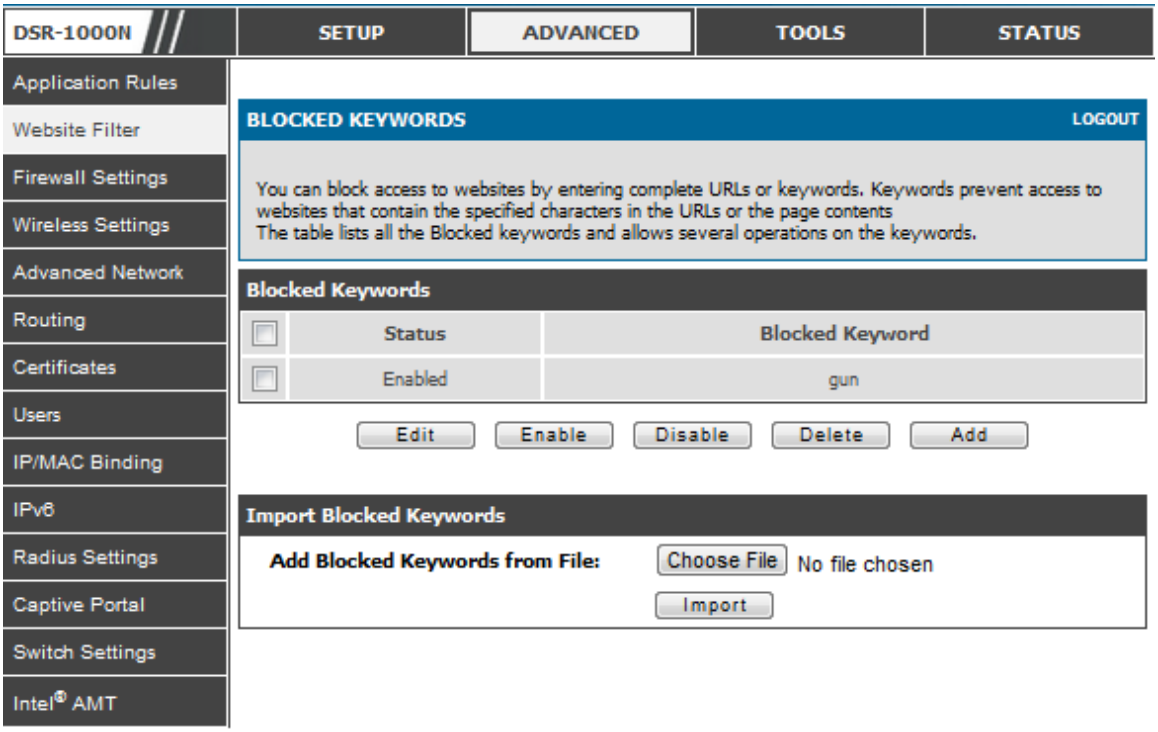



## 5.8.3 Blocked Keywords

***Advanced > Website Filter > Blocked Keywords***

Keyword blocking allows you to block all website URL's or site content that contains the keywords in the configured list. This is lower priority than the Approved URL List; i.e. if the blocked keyword is present in a site allowed by a Trusted Domain in the Approved URL List, then access to that site will be allowed. Import/export from a text or CSV file for keyword blocking is also supported.

**Figure 48: One keyword added to the block list**



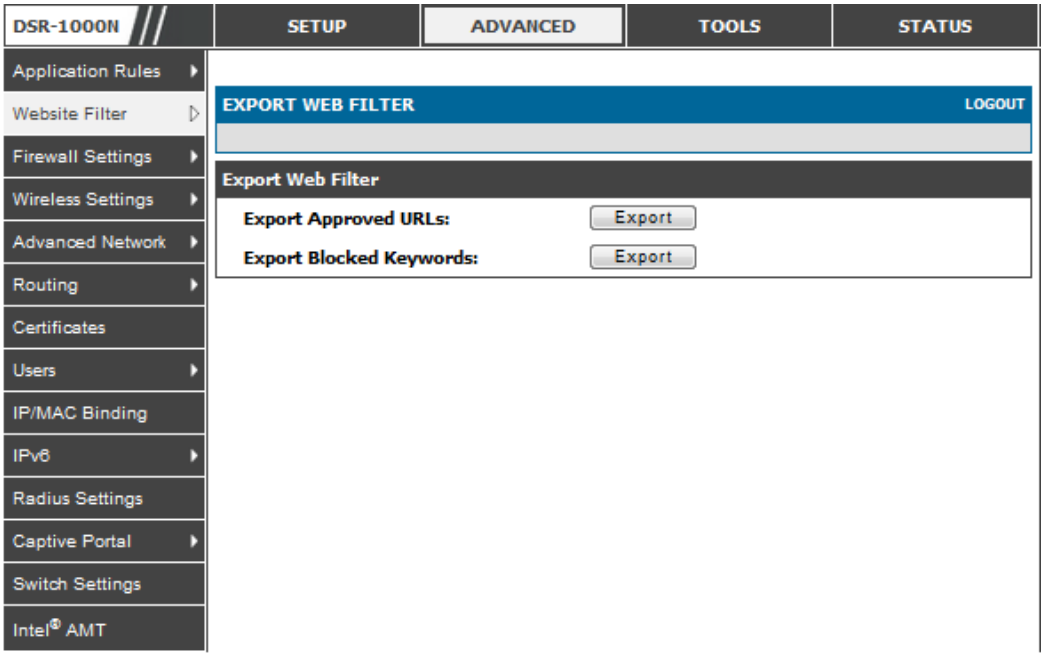

## 5.8.4 Export Web Filter

***Advanced > Website Filter > Export***

Export Approved URLs: Feature enables the user to export the URLs to be allowed to a csv file which can then be downloaded to the local host. The user has to click the export button to get the csv file.

Export Blocked Keywords: This feature enables the user to export the keywords to be blocked to a csv file which can then be downloaded to the local host. The user has to click the export button to get the csv file.

**Figure 49: Export Approved URL list**

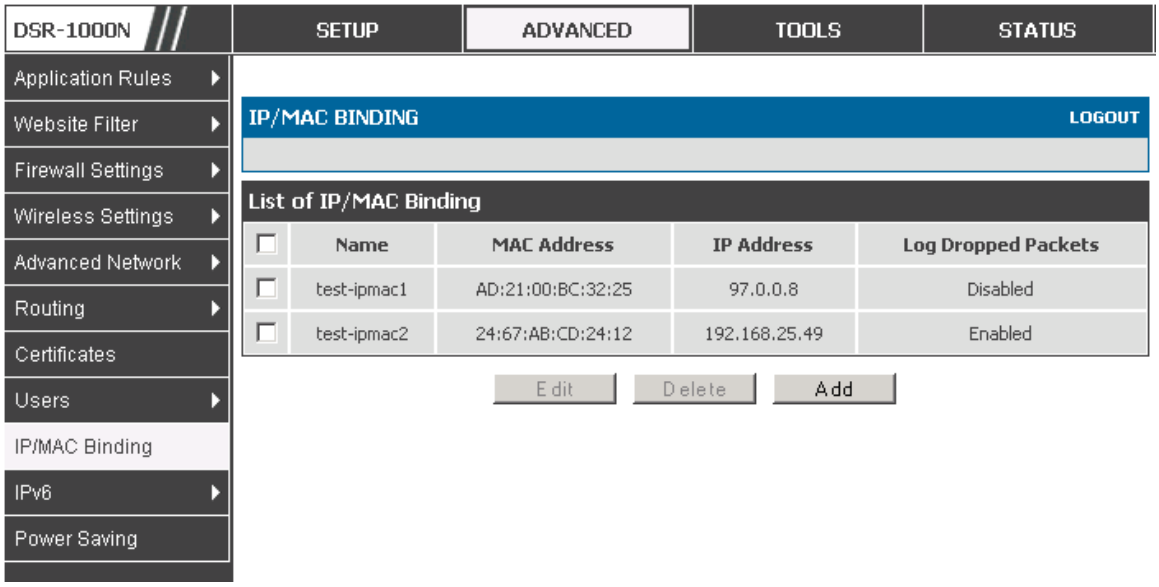



# 5.9 IP/MAC Binding

### *Advanced > IP/MAC Binding*

Another available security measure is to only allow outbound traffic (from the LAN to WAN) when the LAN node has an IP address matching the MAC address bound to it. This is IP/MAC Binding, and by enforcing the gateway to validate the source traffic's IP address with the unique MAC Address of the configured LAN node, the administrator can ensure traffic from that IP address is not spoofed. In the event of a violation (i.e. the traffic's source IP address doesn't match up with the expected MAC address having the same IP address) the packets will be dropped and can be logged for diagnosis.

**Figure 50: The following example binds a LAN host's MAC Address to an IP address served by DSR. If there is an IP/MAC Binding violation, the violating packet will be dropped and logs will be captured**

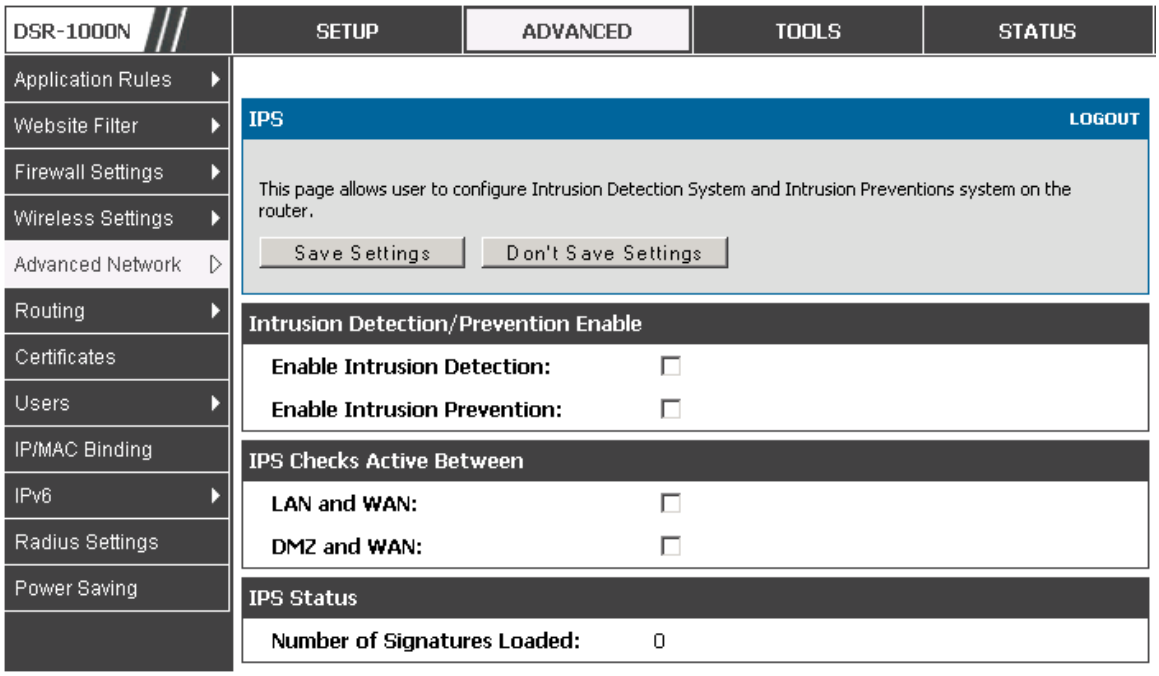



# 5.10 Intrusion Prevention (IPS)

### *Advanced > Advanced Network > IPS*

The gateway's Intrusion Prevention System (IPS) prevents malicious attacks from the internet from accessing the private network. Static attack signatures loaded to the DSR allow common attacks to be detected and prevented. The checks can be enabled between the WAN and DMZ or LAN, and a running counter will allow the administrator to see how many malicious intrusion attempts from the WAN have been detected and prevented.

**Figure 51: Intrusion Prevention features on the router**



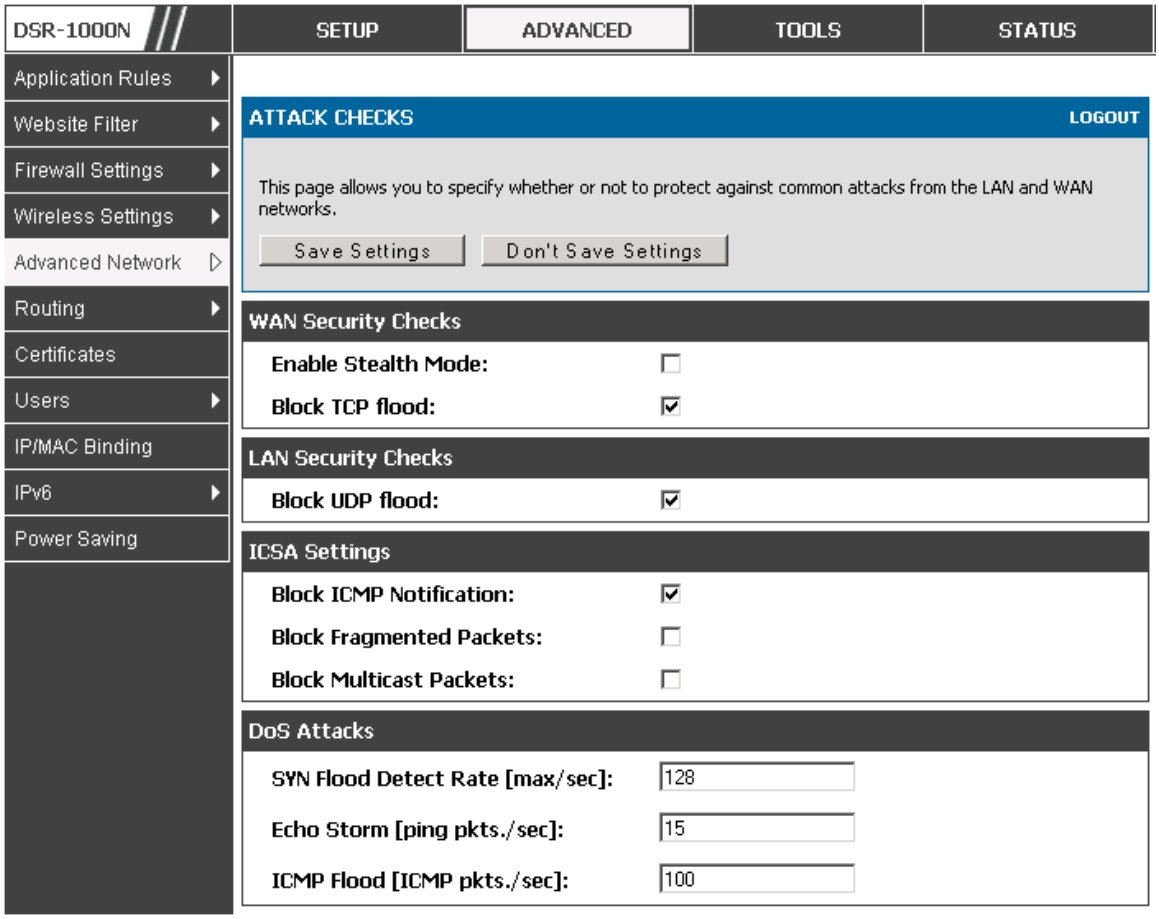

# 5.11 Protecting from Internet Attacks

### *Advanced > Advanced Network > Attack Checks*

Attacks can be malicious security breaches or unintentional network issues that render the router unusable. Attack checks allow you to manage WAN security threats such as continual ping requests and discovery via ARP scans. TCP and UDP flood attack checks can be enabled to manage extreme usage of WAN resources.

Additionally certain Denial-of-Service (DoS) attacks can be blocked. These attacks, if uninhibited, can use up processing power and bandwidth and prevent regular network services from running normally. ICMP packet flooding, SYN traffic flooding, and Echo storm thresholds can be configured to temporarily suspect traffic from the offending source.

**Figure 52: Protecting the router and LAN from internet attacks**



# Chapter 6. IPsec / PPTP / L2TP VPN

A VPN provides a secure communication channel ("tunnel") between two gateway routers or a remote PC client. The following types of tunnels can be created:

- Gateway-to-gateway VPN: to connect two or more routers to secure traffic between remote sites.
- Remote Client (client-to-gateway VPN tunnel): A remote client initiates a VPN tunnel as the IP address of the remote PC client is not known in advance. The gateway in this case acts as a responder.
- Remote client behind a NAT router: The client has a dynamic IP address and is behind a NAT Router. The remote PC client at the NAT router initiates a VPN tunnel as the IP address of the remote NAT router is not known in advance. The gateway WAN port acts as responder.
- PPTP server for LAN / WAN PPTP client connections.
- L2TP server for LAN / WAN L2TP client connections.

**Figure 53: Example of Gateway-to-Gateway IPsec VPN tunnel using two DSR routers connected to the Internet**

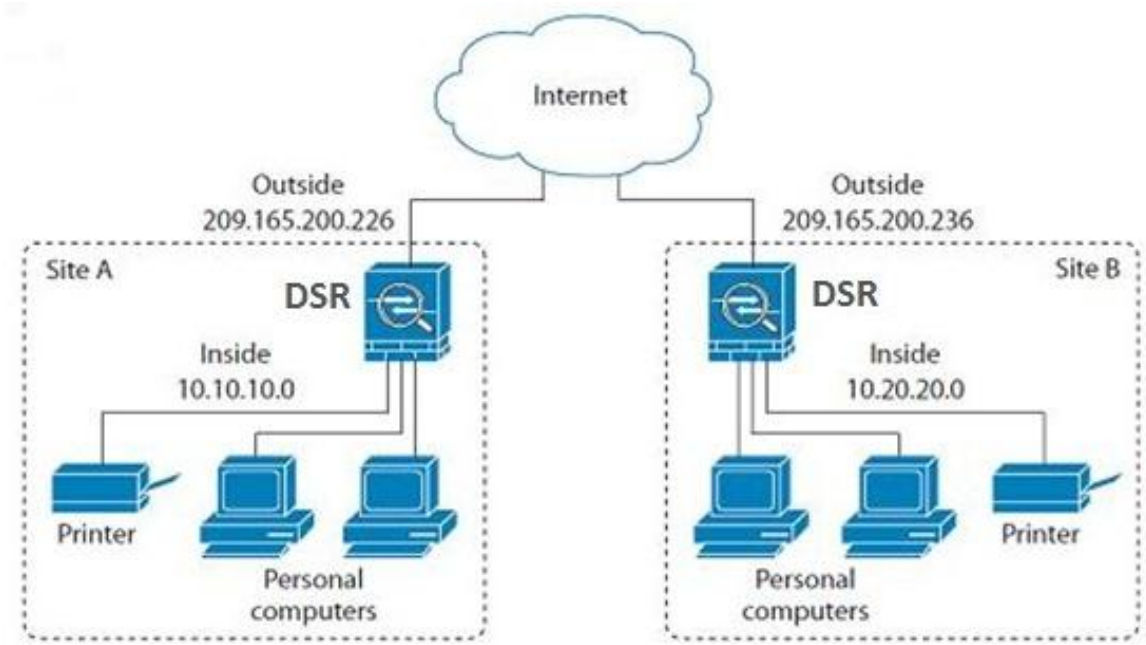
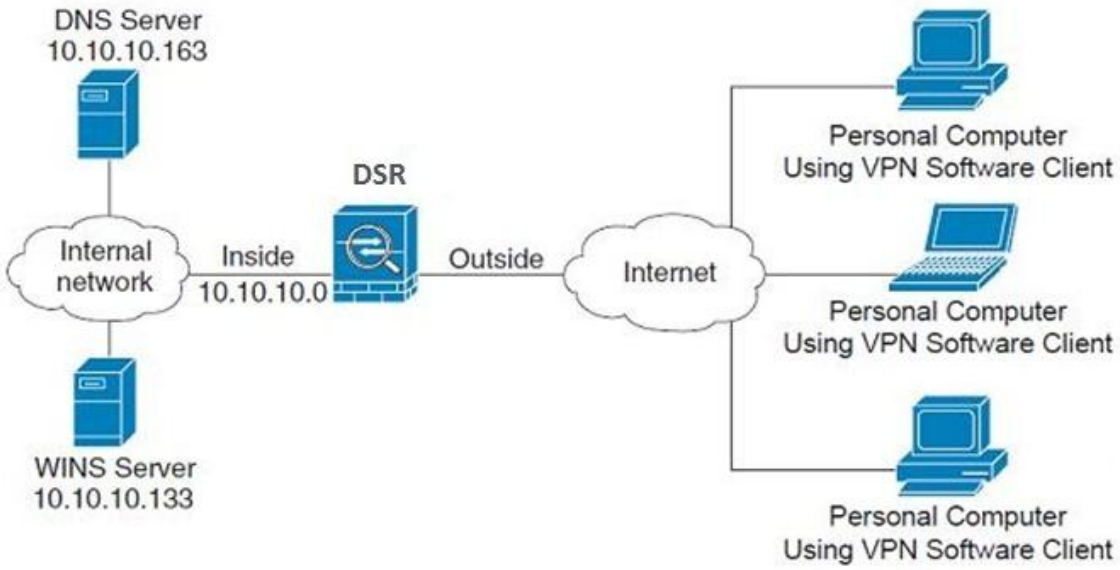


**Figure 54: Example of three IPsec client connections to the internal network through the DSR IPsec gateway**

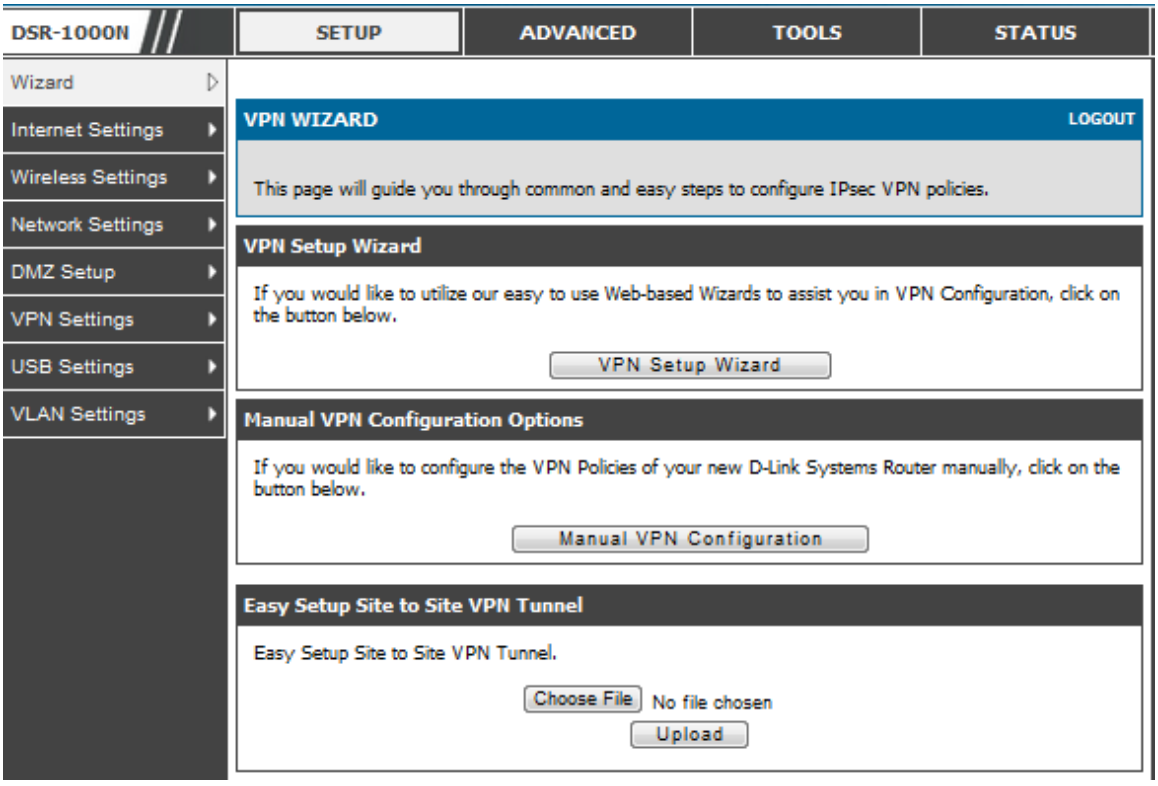


# 6.1 VPN Wizard

***Setup > Wizard > VPN Wizard***

You can use the VPN wizard to quickly create both IKE and VPN policies. Once the IKE or VPN policy is created, you can modify it as required.

**Figure 55: VPN Wizard launch screen**




To easily establish a VPN tunnel using VPN Wizard, follow the steps below:

1. Select the VPN tunnel type to create

- The tunnel can either be a gateway to gateway connection (site-to-site) or a tunnel to a host on the internet (remote access).
- Set the Connection Name and pre-shared key: the connection name is used for management, and the pre-shared key will be required on the VPN client or gateway to establish the tunnel
- Determine the local gateway for this tunnel; if there is more than 1 WAN configured the tunnel can be configured for either of the gateways.

2. Configure Remote and Local WAN address for the tunnel endpoints

- Remote Gateway Type: identify the remote endpoint of the tunnel by FQDN or static IP address
- Remote WAN IP address / FQDN: This field is enabled only if the peer you are trying to connect to is a Gateway. For VPN Clients, this IP address or Internet Name is determined when a connection request is received from a client.
- Local Gateway Type: identify this router's endpoint of the tunnel by FQDN or static IP address
- Local WAN IP address / FQDN: This field can be left blank if you are not using a different FQDN or IP address than the one specified in the WAN port's configuration.

3. Configure the Secure Connection Remote Accessibility fields to identify the remote network:

- Remote LAN IP address: address of the LAN behind the peer gateway
- Remote LAN Subnet Mask: the subnet mask of the LAN behind the peer

**Note:** The IP address range used on the remote LAN must be different from the IP address range used on the local LAN.

4. Review the settings and click Connect to establish the tunnel.

The Wizard will create an Auto IPsec policy with the following default values for a VPN Client or Gateway policy (these can be accessed from a link on the Wizard page):

| Parameter | Default value from Wizard |
|---|---|
| Exchange Mode | Aggressive (Client policy ) or Main (Gateway policy) |
| ID Type | FQDN |
| Local WAN ID | wan_local.com (only applies to Client policies) |
| Remote WAN ID | wan_remote.com (only applies to Client policies) |
| Encryption Algorithm | 3DES |
| Authentication Algorithm | SHA-1 |
| Authentication Method | Pre-shared Key |
| PFS Key-Group | DH-Group 2(1024 bit) |
| Life Time (Phase 1) | 24 hours |
| Life Time (Phase 2) | 8 hours |

| Parameter | Default value from Wizard |
|---|---|
| Exchange Mode | Aggressive (Client policy ) or Main (Gateway policy) |
| ID Type | FQDN |
| Local WAN ID | wan_local.com (only applies to Client policies) |
| Remote WAN ID | wan_remote.com (only applies to Client policies) |
| Encryption Algorithm | 3DES |
| Authentication Algorithm | SHA-1 |
| Authentication Method | Pre-shared Key |
| PFS Key-Group | DH-Group 2(1024 bit) |
| Life Time (Phase 1) | 24 hours |
| NETBIOS | Enabled (only applies to Gateway policies) |

The VPN Wizard is the recommended method to set up an Auto IPsec policy. Once the Wizard creates the matching IKE and VPN policies required by the Auto policy, one can modify the required fields through the edit link. Refer to the online help for details.

Easy Setup Site to Site VPN Tunnel:
If you find it difficult to configure VPN policies through VPN wizard use easy setup site to site VPN tunnel. This will add VPN policies by importing a file containing vpn policies.

# 6.2 Configuring IPsec Policies

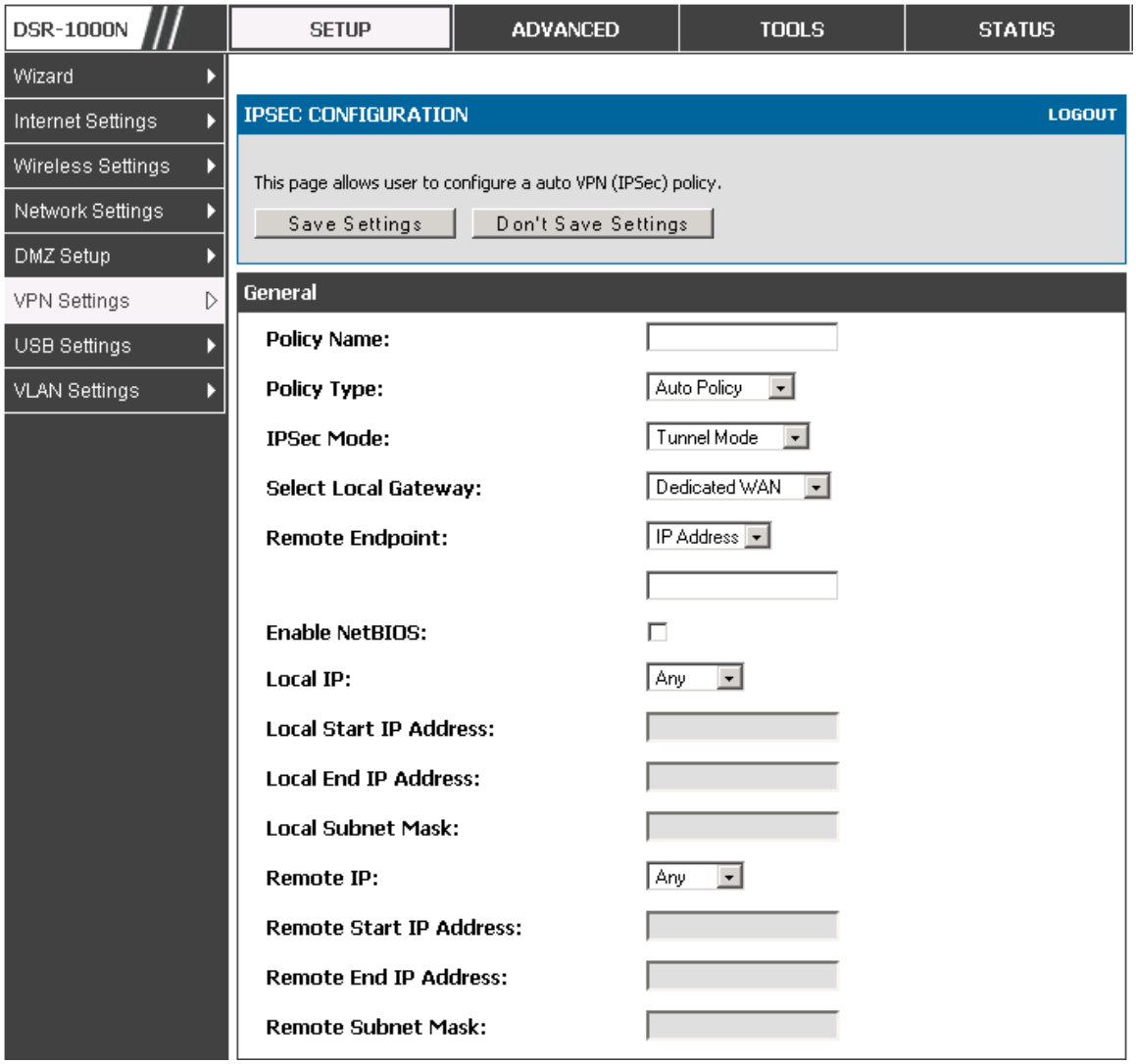
***Setup > VPN Settings > IPsec > IPsec Policies***

An IPsec policy is between this router and another gateway or this router and a IPsec client on a remote host. The IPsec mode can be either tunnel or transport depending on the network being traversed between the two policy endpoints.

- Transport: This is used for end-to-end communication between this router and the tunnel endpoint, either another IPsec gateway or an IPsec VPN client on a host. Only the data payload is encrypted and the IP header is not modified or encrypted.
- Tunnel: This mode is used for network-to-network IPsec tunnels where this gateway is one endpoint of the tunnel. In this mode the entire IP packet including the header is encrypted and/or authenticated.

When tunnel mode is selected, you can enable NetBIOS and DHCP over IPsec. DHCP over IPsec allows this router to serve IP leases to hosts on the remote LAN. As well in this mode you can define the single IP address, range of IPs, or subnet on both the local and remote private networks that can communicate over the tunnel.

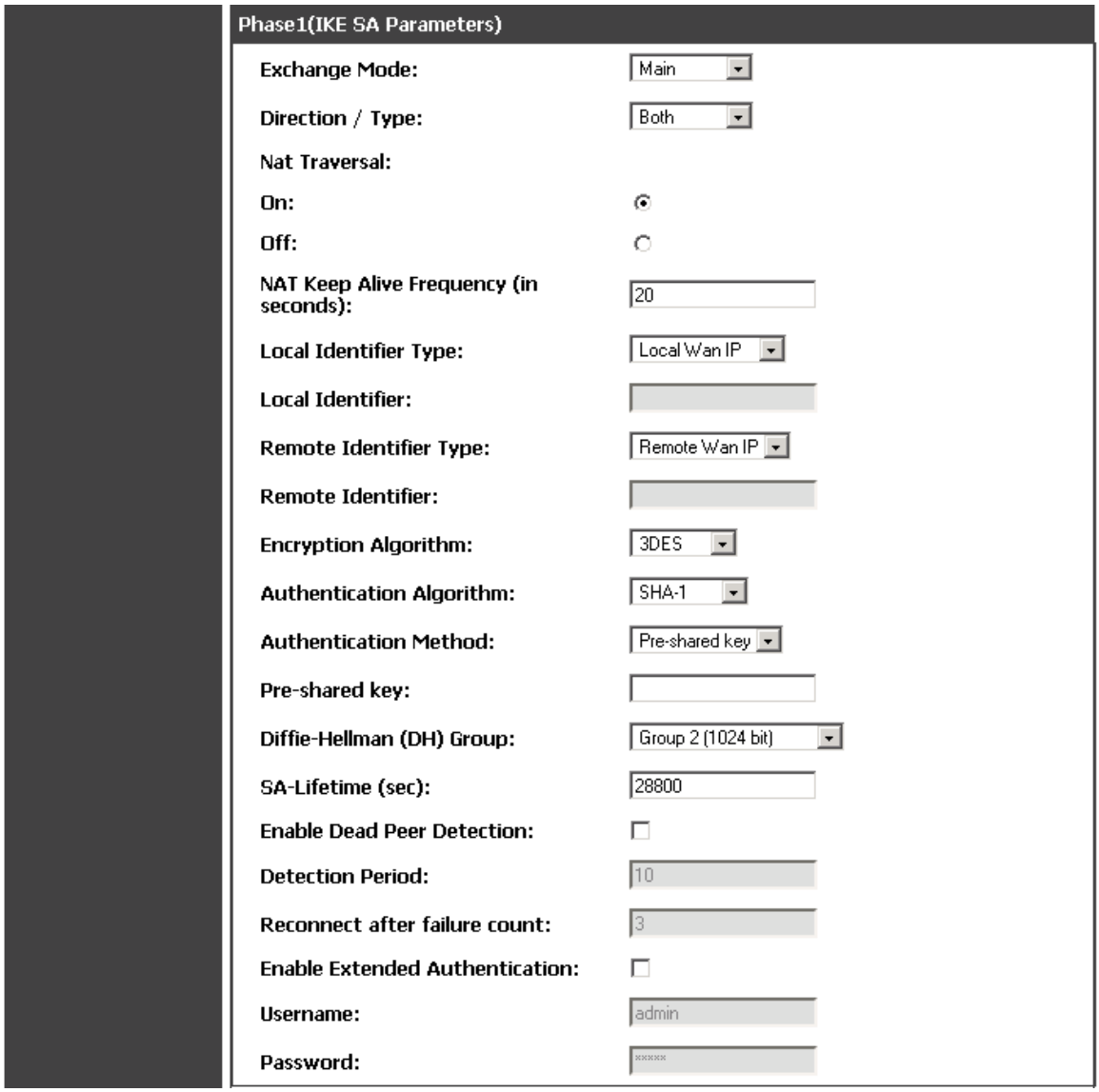
**Figure 56: IPsec policy configuration**




Once the tunnel type and endpoints of the tunnel are defined you can determine the Phase 1 / Phase 2 negotiation to use for the tunnel. This is covered in the IPsec mode setting, as the policy can be Manual or Auto. For Auto policies, the Internet Key Exchange (IKE) protocol dynamically exchanges keys between two IPsec hosts. The Phase 1 IKE parameters are used to define the tunnel's security association details. The Phase 2 Auto policy parameters cover the security association lifetime and encryption/authentication details of the phase 2 key negotiation.

The VPN policy is one half of the IKE/VPN policy pair required to establish an Auto IPsec VPN tunnel. The IP addresses of the machine or machines on the two VPN endpoints are configured here, along with the policy parameters required to secure the tunnel

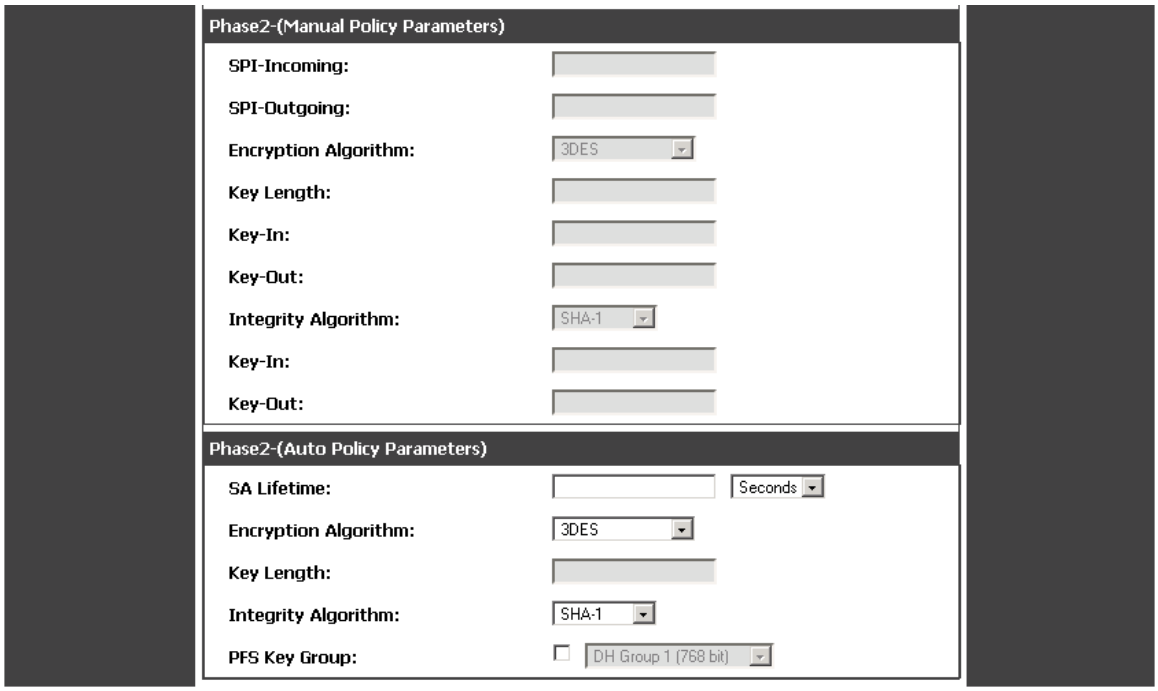
**Figure 57: IPsec policy configuration continued (Auto policy via IKE)**




A Manual policy does not use IKE and instead relies on manual keying to exchange authentication parameters between the two IPsec hosts. The incoming and outgoing security parameter index (SPI) values must be mirrored on the remote tunnel endpoint. As well the encryption and integrity algorithms and keys must match on the remote IPsec host exactly in order for the tunnel to establish successfully. Note that using Auto policies with IKE are preferred as in some IPsec implementations the SPI (security parameter index) values require conversion at each endpoint.

DSR supports VPN roll-over feature. This means that policies configured on primary WAN will rollover to the secondary WAN in case of a link failure on a primary WAN. This feature can be used only if your WAN is configured in Auto-Rollover mode.

**Figure 58: IPsec policy configuration continued (Auto / Manual Phase 2)**




## 6.2.1 Extended Authentication (XAUTH)

You can also configure extended authentication (XAUTH). Rather than configure a unique VPN policy for each user, you can configure the VPN gateway router to authenticate users from a stored list of user accounts or with an external authentication server such as a RADIUS server. With a user database, user accounts created in the router are used to authenticate users.

With a configured RADIUS server, the router connects to a RADIUS server and passes to it the credentials that it receives from the VPN client. You can secure the connection between the router and the RADIUS server with the authentication protocol supported by the server (PAP or CHAP). For RADIUS – PAP, the router first checks in the user database to see if the user credentials are available; if they are not, the router connects to the RADIUS server.

## 6.2.2 Internet over IPSec tunnel

In this feature all the traffic will pass through the VPN Tunnel and from the Remote Gateway the packet will be routed to Internet. On the remote gateway side, the outgoing packet will be SNAT'ed.

# 6.3 Configuring VPN clients

Remote VPN clients must be configured with the same VPN policy parameters used in the VPN tunnel that the client wishes to use: encryption, authentication, life time, and PFS key-group. Upon establishing these authentication parameters, the VPN Client user database must also be populated with an account to give a user access to the tunnel.

> VPN client software is required to establish a VPN tunnel between the router and remote endpoint. Open source software (such as OpenVPN or Openswan) as well as Microsoft IPsec VPN software can be configured with the required IKE policy parameters to establish an IPsec VPN tunnel. Refer to the client software guide for detailed instructions on setup as well as the router's online help.

The user database contains the list of VPN user accounts that are authorized to use a given VPN tunnel. Alternatively VPN tunnel users can be authenticated using a configured Radius database. Refer to the online help to determine how to populate the user database and/or configure RADIUS authentication.

# 6.4 PPTP / L2TP Tunnels

This router supports VPN tunnels from either PPTP or L2TP ISP servers. The router acts as a broker device to allow the ISP's server to create a TCP control connection between the LAN VPN client and the VPN server.

## 6.4.1 PPTP Tunnel Support

***Setup > VPN Settings > PPTP > PPTP Client***

PPTP VPN Client can be configured on this router. Using this client we can access remote network which is local to PPTP server. Once client is enabled, the user can access ***Status > Active VPNs*** page and establish PPTP VPN tunnel clicking Connect. To disconnect the tunnel, click Drop.

**Figure 59: PPTP tunnel configuration – PPTP Client**

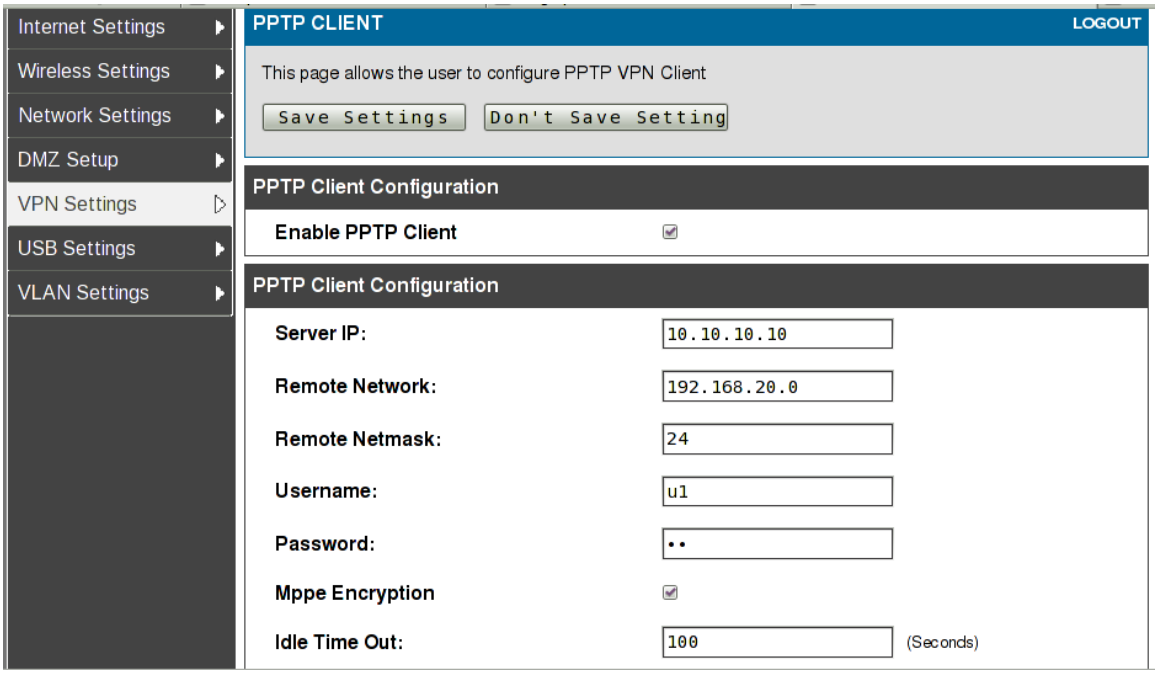
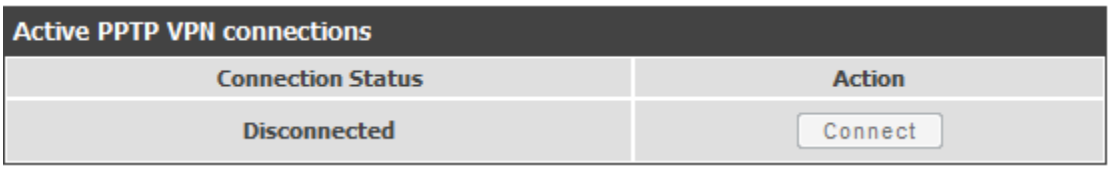


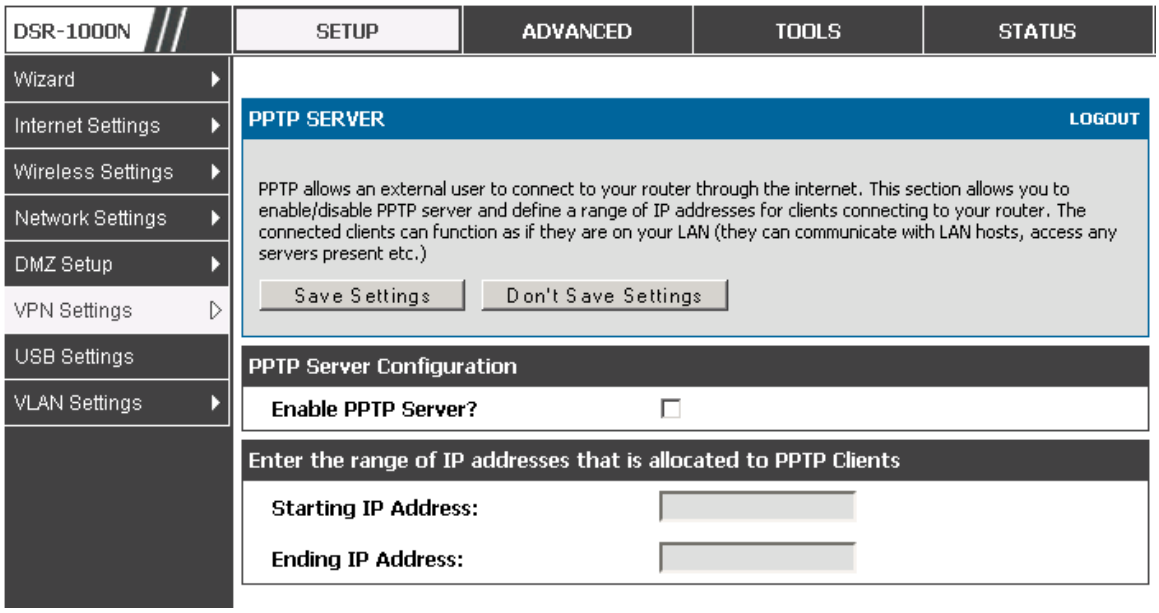

**Figure 60: PPTP VPN connection status**




### *Setup > VPN Settings > PPTP > PPTP Server*

A PPTP VPN can be established through this router. Once enabled a PPTP server is available on the router for LAN and WAN PPTP client users to access. Once the PPTP server is enabled, PPTP clients that are within the range of configured IP addresses of allowed clients can reach the router's PPTP server. Once authenticated by the PPTP server (the tunnel endpoint), PPTP clients have access to the network managed by the router.

**Figure 61: PPTP tunnel configuration – PPTP Server**

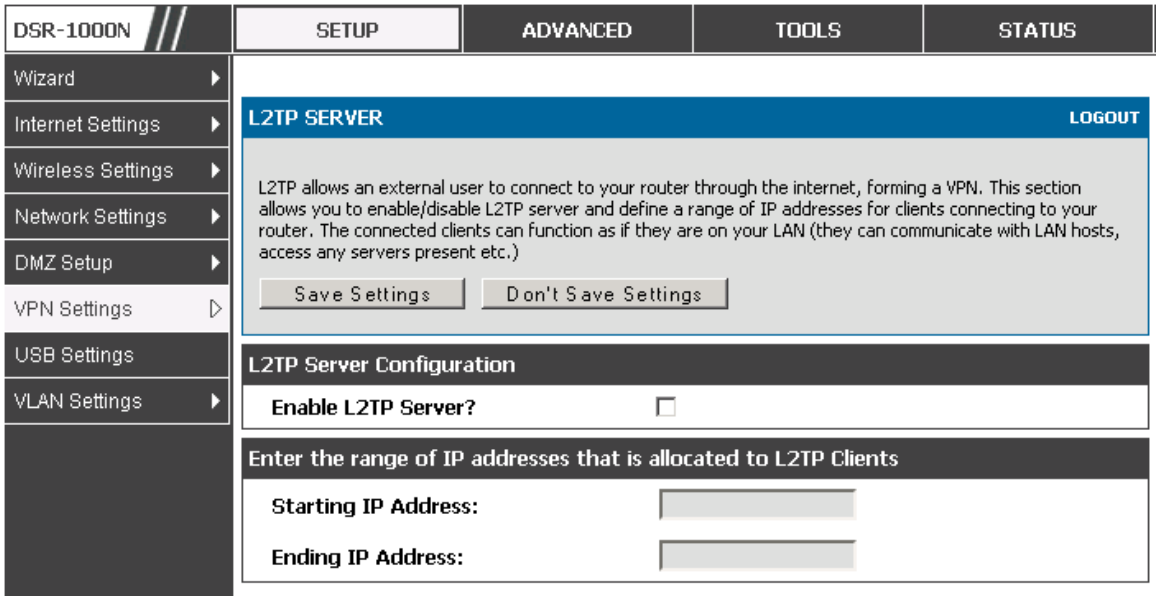



## 6.4.2 L2TP Tunnel Support

***Setup > VPN Settings > L2TP > L2TP Server***

A L2TP VPN can be established through this router. Once enabled a L2TP server is available on the router for LAN and WAN L2TP client users to access. Once the L2TP server is enabled, L2TP clients that are within the range of configured IP addresses of allowed clients can reach the router's L2TP server. Once authenticated by the L2TP server (the tunnel endpoint), L2TP clients have access to the network managed by the router.

**Figure 62: L2TP tunnel configuration – L2TP Server**




## 6.4.3 OpenVPN Support

***Setup > VPN Settings > OpenVPN > OpenVPN Configuration***

OpenVPN allows peers to authenticate each other using a pre-shared secret key, certificates, or username/password. When used in a multiclient-server configuration, it allows the server to release an authentication certificate for every client, using signature and Certificate authority. An Open VPN can be established through this router. Check/Uncheck this and click save settings to start/stop openvpn server.

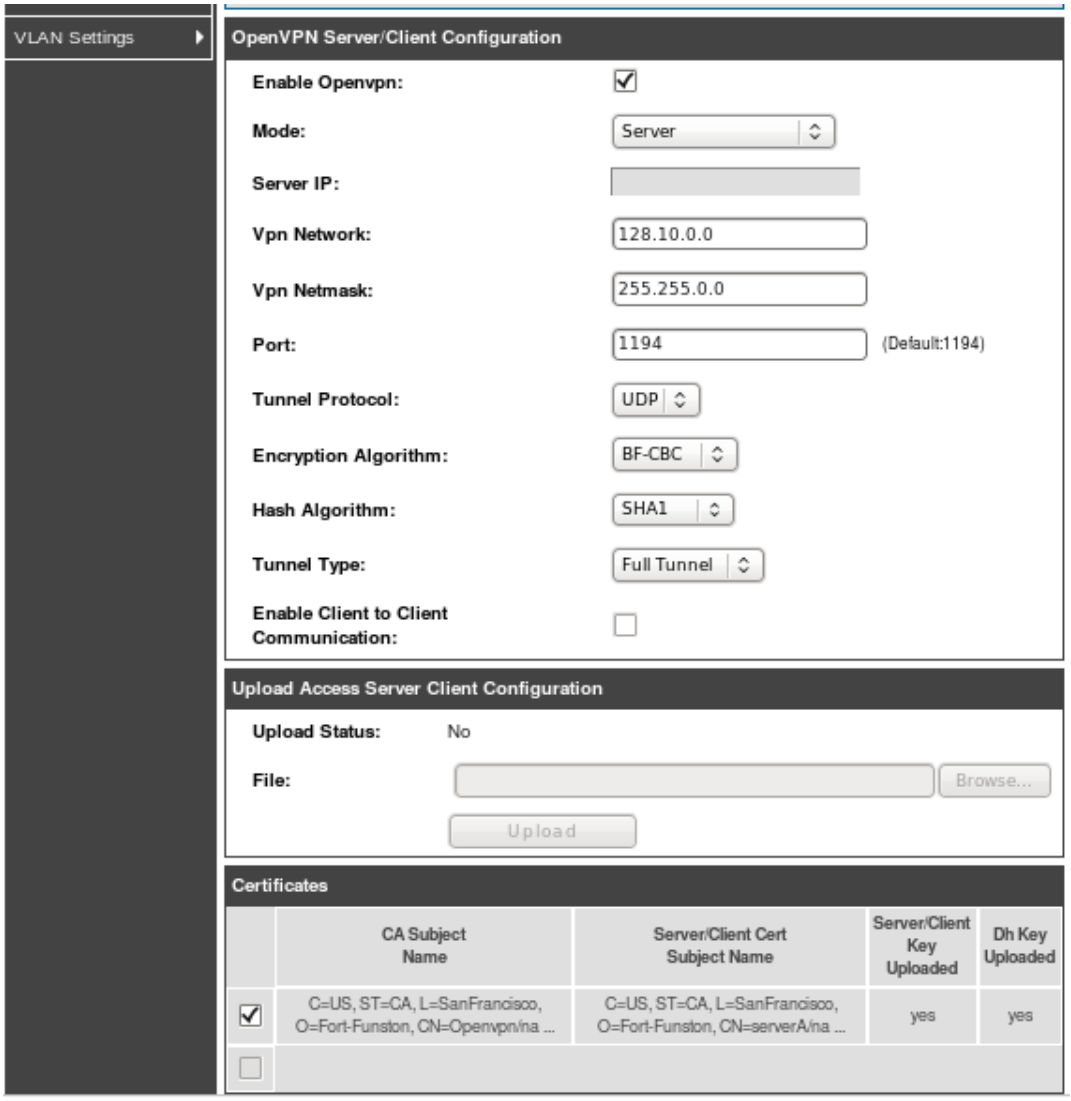
- Mode: OpenVPN daemon mode. It can run in server mode, client mode or access server client mode. In access server client mode, the user has to download the auto login profile from the Openvpn Access Server and upload the same to connect.
- Server IP: OpenVPN server IP address to which the client connects(Applicable in client mode).
- Vpn Network: Address of the Virtual Network.
- Vpn Netmask: Netmask of the Virtual Network.
- Port: The port number on which openvpn server(or Access Server) runs.
- Tunnel Protocol: The protocol used to communicate with the remote host. Ex: Tcp, Udp. Udp is the default.
- Encryption Algorithm: The cipher with which the packets are encrypted. Ex: BF-CBC, AES-128,AES-192 and AES-256. BF-CBC is the default
- Hash algorithm: Message digest algorithm used to authenticate packets. Ex: SHA1, SHA256 and SHA512. SHA1 is the default.
- Tunnel Type: Select Full Tunnel to redirect all the traffic through the tunnel. Select Split Tunnel to redirect traffic to only specified resources

(added from openVpnClient Routes) through the tunnel. Full Tunnel is the default.

- Enable Client to Client communication: Enable this to allow openvpn clients to communicate with each other in split tunnel case. Disabled by default.
- Upload Access Server Client Configuration: The user has to download the auto login profile and upload here to connect this router to the OpenVPN Access Server.
- Certificates: Select the set of certificates openvpn server uses. First Row: Set of certificates and keys the server uses. Second Row: Set of certificates and keys newly uploaded.
- Enable Tls Authentication Key: Enabling this adds Tls authentication which adds an additional layer of authentication. Can be checked only when the tls key is uploaded. Disabled by default.

Click Save Settings to save the settings.

**Figure 63: OpenVPN configuration**



# Chapter 7. SSL VPN

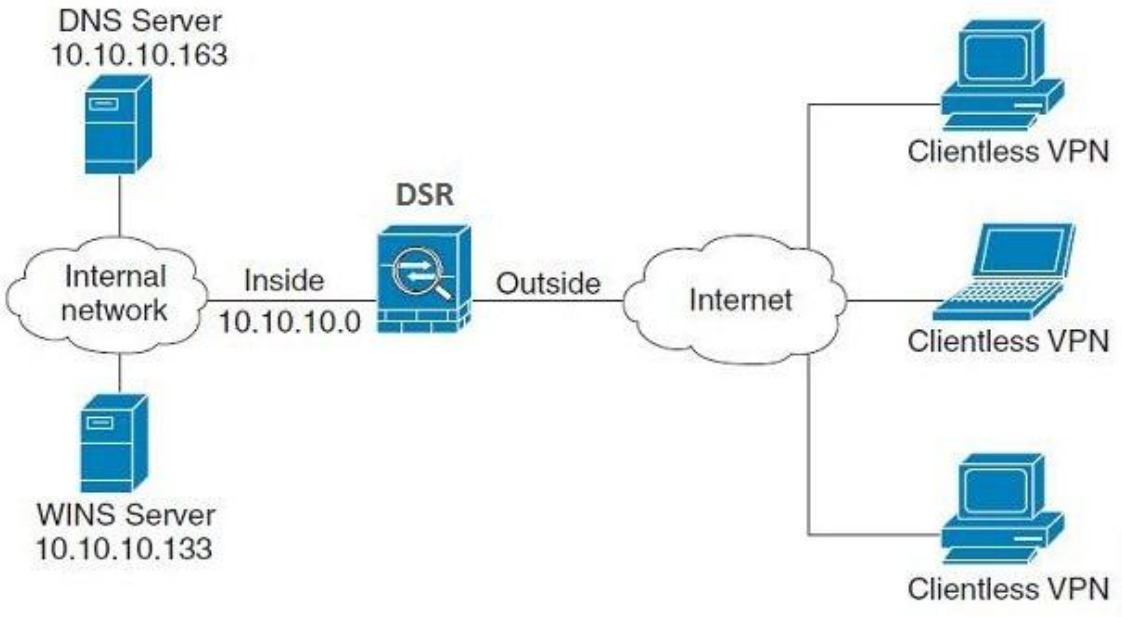
The router provides an intrinsic SSL VPN feature as an alternate to the standard IPsec VPN. SSL VPN differs from IPsec VPN mainly by removing the requirement of a pre-installed VPN client on the remote host. Instead, users can securely login through the SSL User Portal using a standard web browser and receive access to configured network resources within the corporate LAN. The router supports multiple concurrent sessions to allow remote users to access the LAN over an encrypted link through a customizable user portal interface, and each SSL VPN user can be assigned unique privileges and network resource access levels.

The remote user can be provided different options for SSL service through this router:

- **VPN Tunnel**: The remote user's SSL enabled browser is used in place of a VPN client on the remote host to establish a secure VPN tunnel. A SSL VPN client (Active-X or Java based) is installed in the remote host to allow the client to join the corporate LAN with pre-configured access/policy privileges. At this point a virtual network interface is created on the user's host and this will be assigned an IP address and DNS server address from the router. Once established, the host machine can access allocated network resources.
- **Port Forwarding**: A web-based (ActiveX or Java) client is installed on the client machine again. Note that Port Forwarding service only supports TCP connections between the remote user and the router. The router administrator can define specific services or applications that are available to remote port forwarding users instead of access to the full LAN like the VPN tunnel.

ActiveX clients are used when the remote user accesses the portal using the Internet Explorer browser. The Java client is used for other browsers like Mozilla Firefox, Netscape Navigator, Google Chrome, and Apple Safari.

**Figure 64: Example of clientless SSL VPN connections to the DSR**



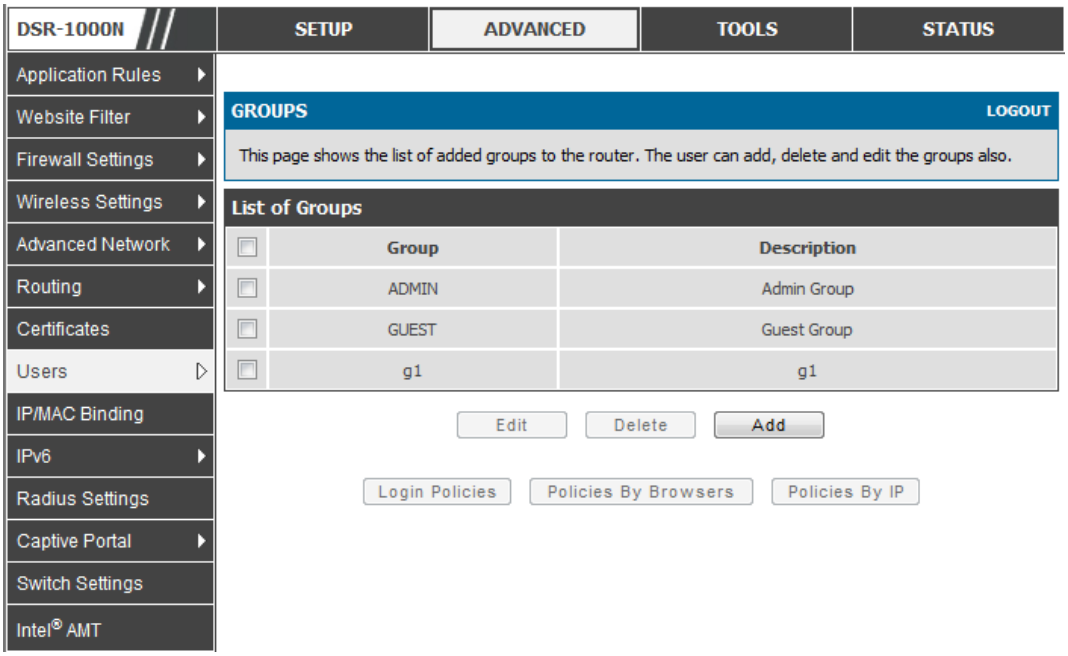
# 7.1 Groups and Users

### *Advanced > Users > Groups*

The group page allows creating, editing and deleting groups. The groups are associated to set of user types. The lists of available groups are displayed in the "List of Group" page with Group name and description of group.

- Click Add to create a group.
- Click Edit to update an existing group.
- Click Delete to clear an exisiting group.

**Figure 65: List of groups**



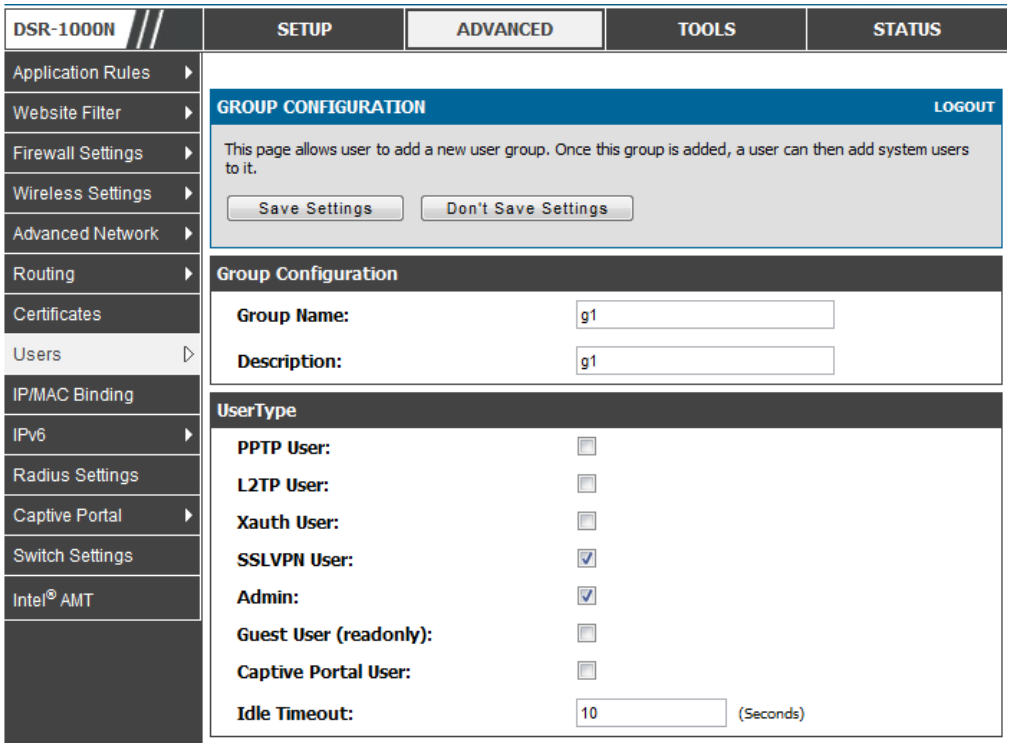

Group configuration page allows to create a group with a different type of users. The user types are as follows:

- PPTP User: These are PPTP VPN tunnel LAN users that can establish a tunnel with the PPTP server on the WAN.
- L2TP User: These are L2TP VPN tunnel LAN users that can establish a tunnel with the L2TP server on the WAN.
- Xauth User: This user's authentication is performed by an externally configured RADIUS or other Enterprise server. It is not part of the local user database.
- SSLVPN User: This user has access to the SSL VPN services as determined by the group policies and authentication domain of which it is a member. The domain-determined SSL VPN portal will be displayed when logging in with this user type.

- Admin: This is the router's super-user, and can manage the router, use SSL VPN to access network resources, and login to L2TP/PPTP servers on the WAN. There will always be one default administrator user for the GUI
- Guest User (read-only): The guest user gains read only access to the GUI to observe and review configuration settings. The guest does not have SSL VPN access.
- Captive Portal User: These captive portal users has access through the router. The access is determined based on captive portal policies.

Idle Timeout: This the log in timeout period for users of this group.

**Figure 66: User group configuration**

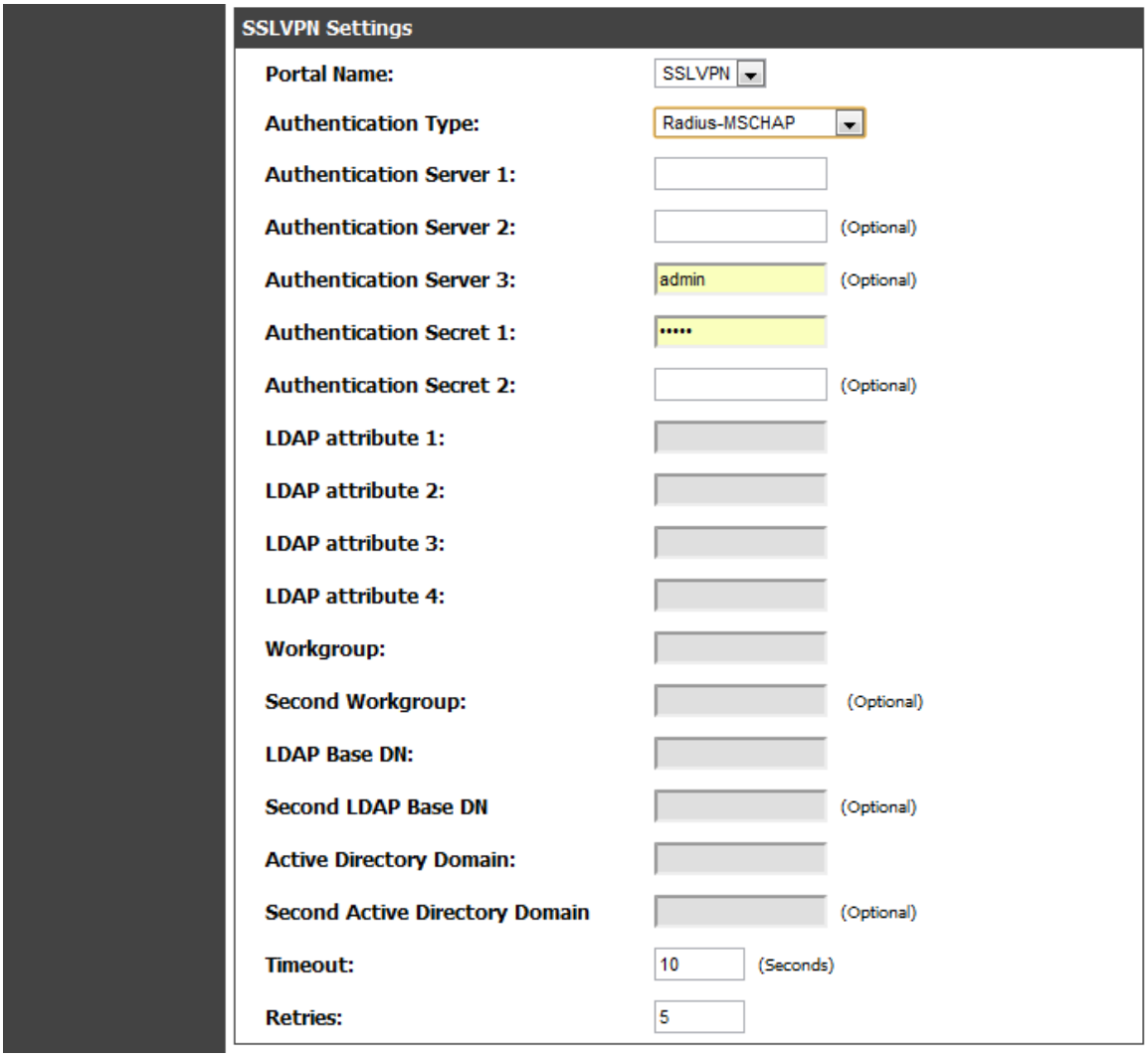



When SSLVPN users are selected, the SSLVPN settings are displayed with the following parameters as captured in SSLVPN Settings. As per the Authentication Type SSL VPN details are configured.

- Authentication Type: The authentication Type can be one of the following: Local User Database (default), Radius-PAP, Radius-CHAP, Radius-MSCHAP, Radius-MSCHAPv2, NT Domain, Active Directory and LDAP.
- Authentication Secret: If the domain uses RADIUS authentication then the authentication secret is required (and this has to match the secret configured on the RADIUS server).
- Workgroup: This is required is for NT domain authentication. If there are multiple workgroups, user can enter the details for up to two workgroups.
- LDAP Base DN: This is the base domain name for the LDAP authentication server. If there are multiple LDAP authentication servers, user can enter the details for up to two LDAP Base DN.

- Active Directory Domain: If the domain uses the Active Directory authentication, the Active Directory domain name is required. Users configured in the Active Directory database are given access to the SSL VPN portal with their Active Directory username and password. If there are multiple Active Directory domains, user can enter the details for up to two authentication domains.
- Timeout: The timeout period for reaching the authentication server.
- Retries: The number of retries to authenticate with the authentication server after which the DSR stops trying to reach the server.

**Figure 67: SSLVPN Settings**



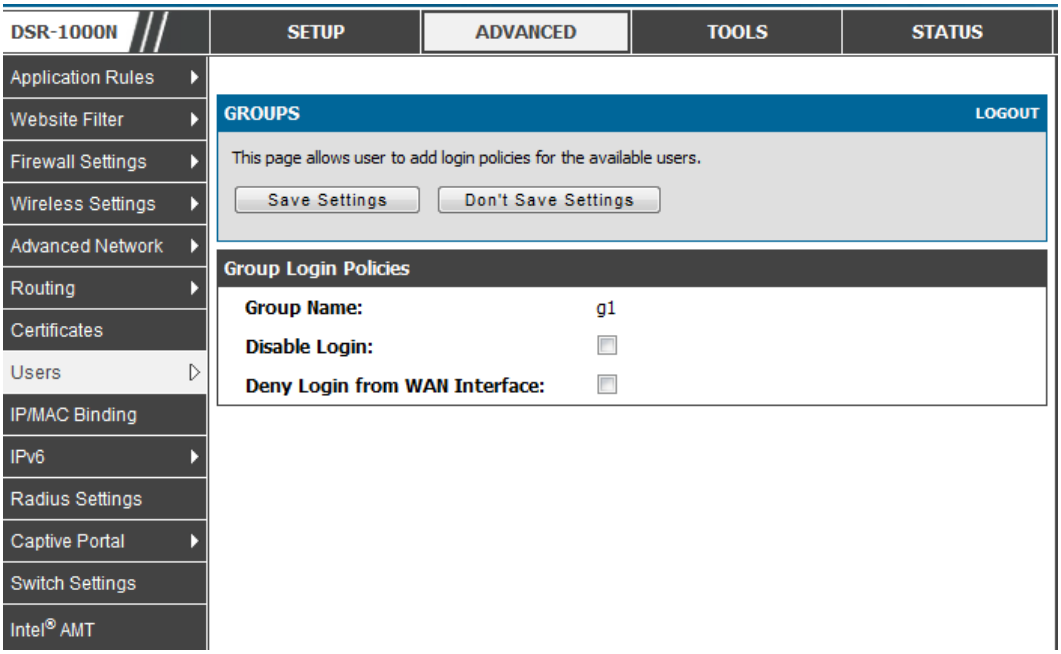

**Login Policies**

To set login policies for the group, select the corresponding group click "Login policies". The following parameters are configured:

- Group Name: This is the name of the group that can have its login policy edited

- Disable Login: Enable to prevent the users of this group from logging into the devices management interface(s)
- Deny Login from WAN interface: Enable to prevent the users of this group from logging in from a WAN (wide area network) interface. In this case only login through LAN is allowed.

**Figure 68: Group login policies options**




**Policy by Browsers**

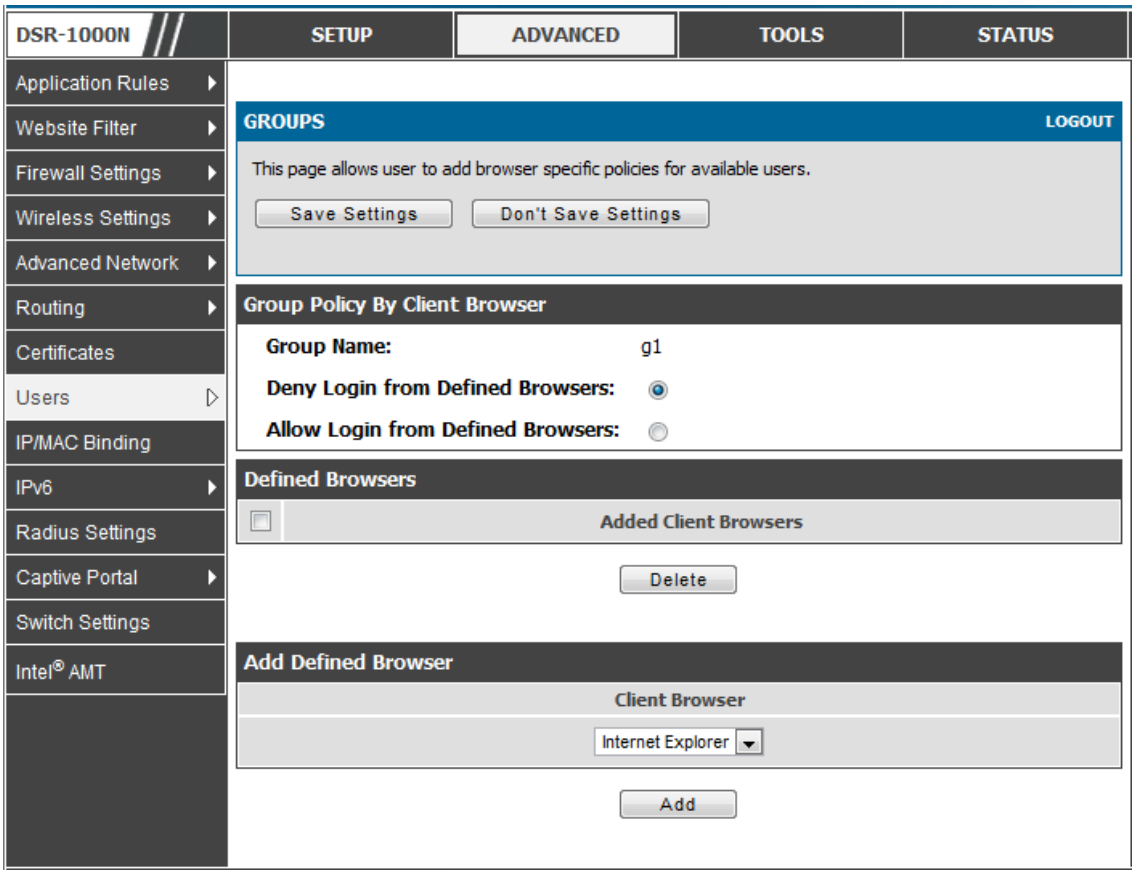
To set browser policies for the group, select the corresponding group click "Policy by Browsers". The following parameters are configured:

- Group Name: This is the name of the group that can have its login policy edited
- Deny Login from Defined Browsers: The list of defined browsers below will be used to prevent the users of this group from logging in to the routers GUI. All non-defined browsers will be allowed for login for this group.
- Allow Login from Defined Browsers: The list of defined browsers below will be used to allow the users of this group from logging in to the routers GUI. All non-defined browsers will be denied for login for this group.
- Defined Browsers:This list displays the web browsers that have been added to the Defined Browsers list, upon which group login policies can be defined. (Check Box At First Column Header): Selects all the defined browsers in the table.
- Delete: Deletes the selected browser(s).

You can add to the list of Defined Browsers by selecting a client browser from the drop down menu and clicking Add. This browser will then appear in the above list of Defined Browsers.

- Click Save Settings to save your changes.

**Figure 69: Browser policies options**




**Policy by IP**

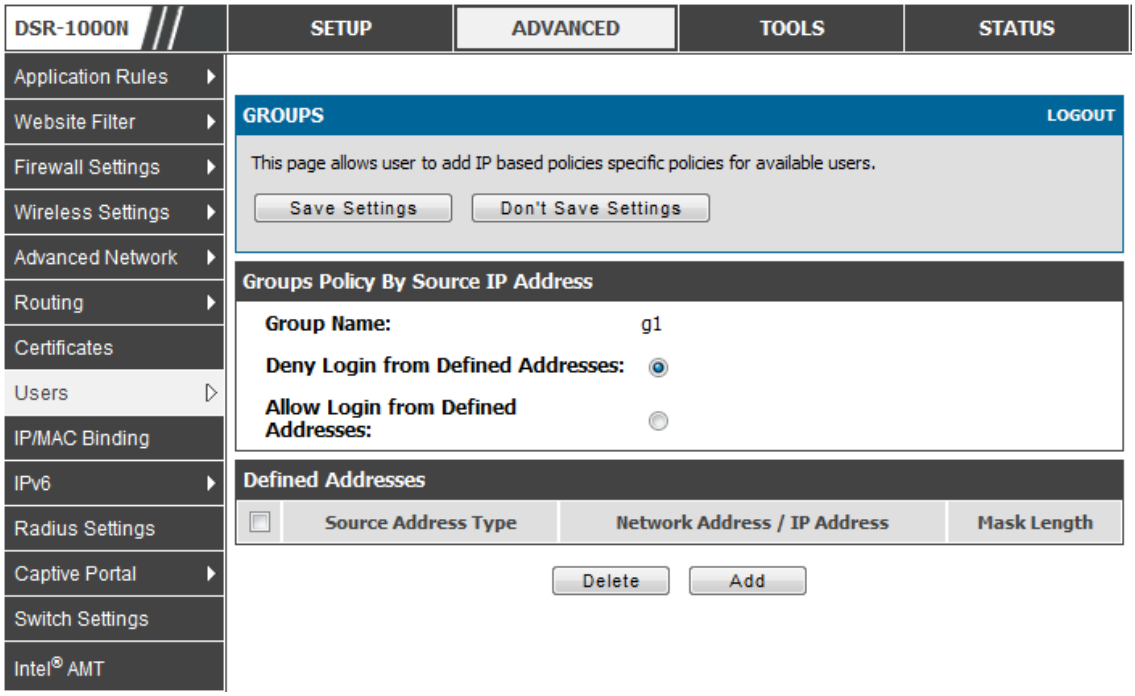
To set policies bye IP for the group, select the corresponding group click "Policy by IP". The following parameters are configured:

- Group Name: This is the name of the group that can have its login policy edited
- Deny Login from Defined Browsers: The list of defined browsers below will be used to prevent the users of this group from logging in to the routers GUI. All non-defined browsers will be allowed for login for this group.
- Allow Login from Defined Browsers: The list of defined browsers below will be used to allow the users of this group from logging in to the routers GUI. All non-defined browsers will be denied for login for this group.
- Defined Browsers:This list displays the web browsers that have been added to the Defined Browsers list, upon which group login policies can be defined. (Check Box At First Column Header): Selects all the defined browsers in the table.
- Delete: Deletes the selected browser(s).

You can add to the list of Defined Browsers by selecting a client browser from the drop down menu and clicking Add. This browser will then appear in the above list of Defined Browsers.

- Click Save Settings to save your changes.

**Figure 70: IP policies options**




.

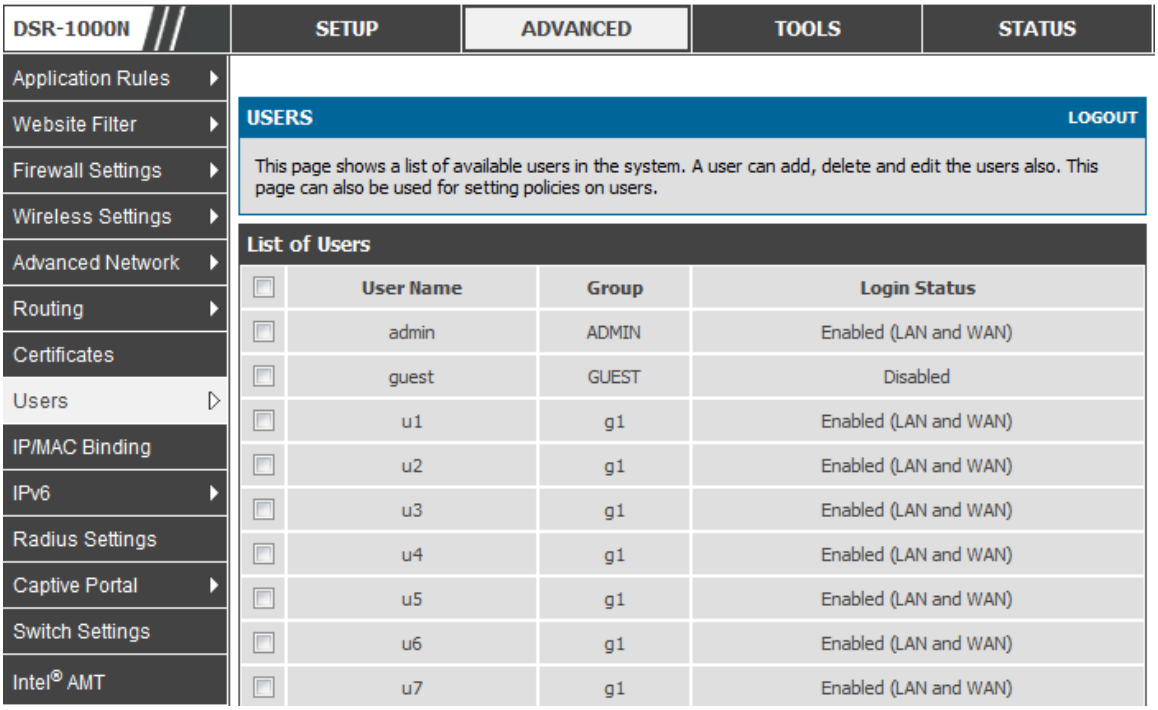
Login Policies, Policy by Browsers, Policy by IP are applicable SSL VPN user only.

### *Advanced > Users > Users*

The users page allows adding, editing and deleting existing groups. The user are associated to configured groups. The lists of available users are displayed in the "List of Users" page with User name, associated group and Login status.

- Click Add to create a user.
- Click Edit to update an existing user.
- Click Delete to clear an existing user

**Figure 71: Available Users with login status and associated Group**




## 7.1.1 Users and Passwords

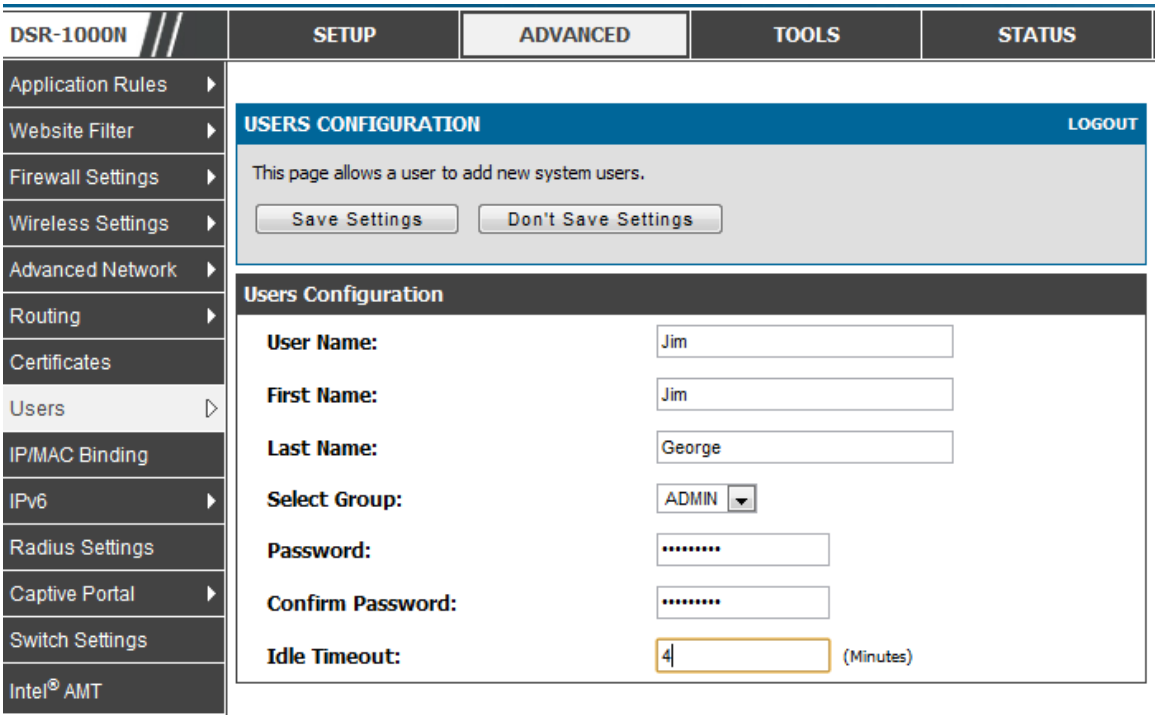
***Advanced > Users > Users***

The user configurations allow creating users associated to group. The user settings contain the following key components:

- User Name: This is unique identifier of the user.
- First Name: This is the user's first name
- Last Name: This is the user's last name
- Select Group: A group is chosen from a list of configured groups.
- Password: The password associated with the user name.
- Confirm Password: The same password as above is required to mitigate against typing errors.
- Idle Timeout: The session timeout for the user.

It is recommended that passwords contains no dictionary words from any language, and is a mixture of letters (both uppercase and lowercase), numbers, and symbols. The password can be up to 30 characters.

**Figure 72: User configuration options**



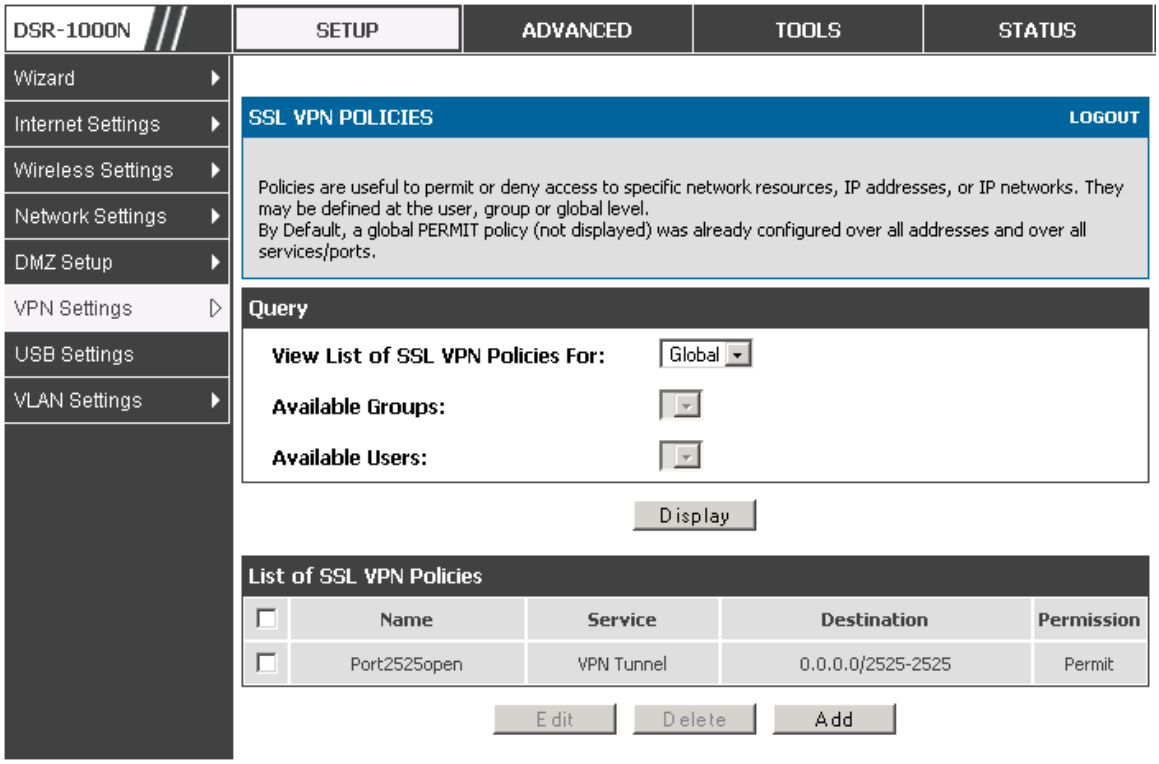

# 7.2 Using SSL VPN Policies

***Setup > VPN Settings > SSL VPN Server > SSL VPN Policies***

SSL VPN Policies can be created on a Global, Group, or User level. User level policies take precedence over Group level policies and Group level policies take precedence over Global policies. These policies can be applied to a specific network resource, IP address or ranges on the LAN, or to different SSL VPN services supported by the router. The List of Available Policies can be filtered based on whether it applies to a user, group, or all users (global).

A more specific policy takes precedence over a generic policy when both are applied to the same user/group/global domain. I.e. a policy for a specific IP address takes precedence over a policy for a range of addresses containing the IP address already referenced.

**Figure 73: List of SSL VPN polices (Global filter)**



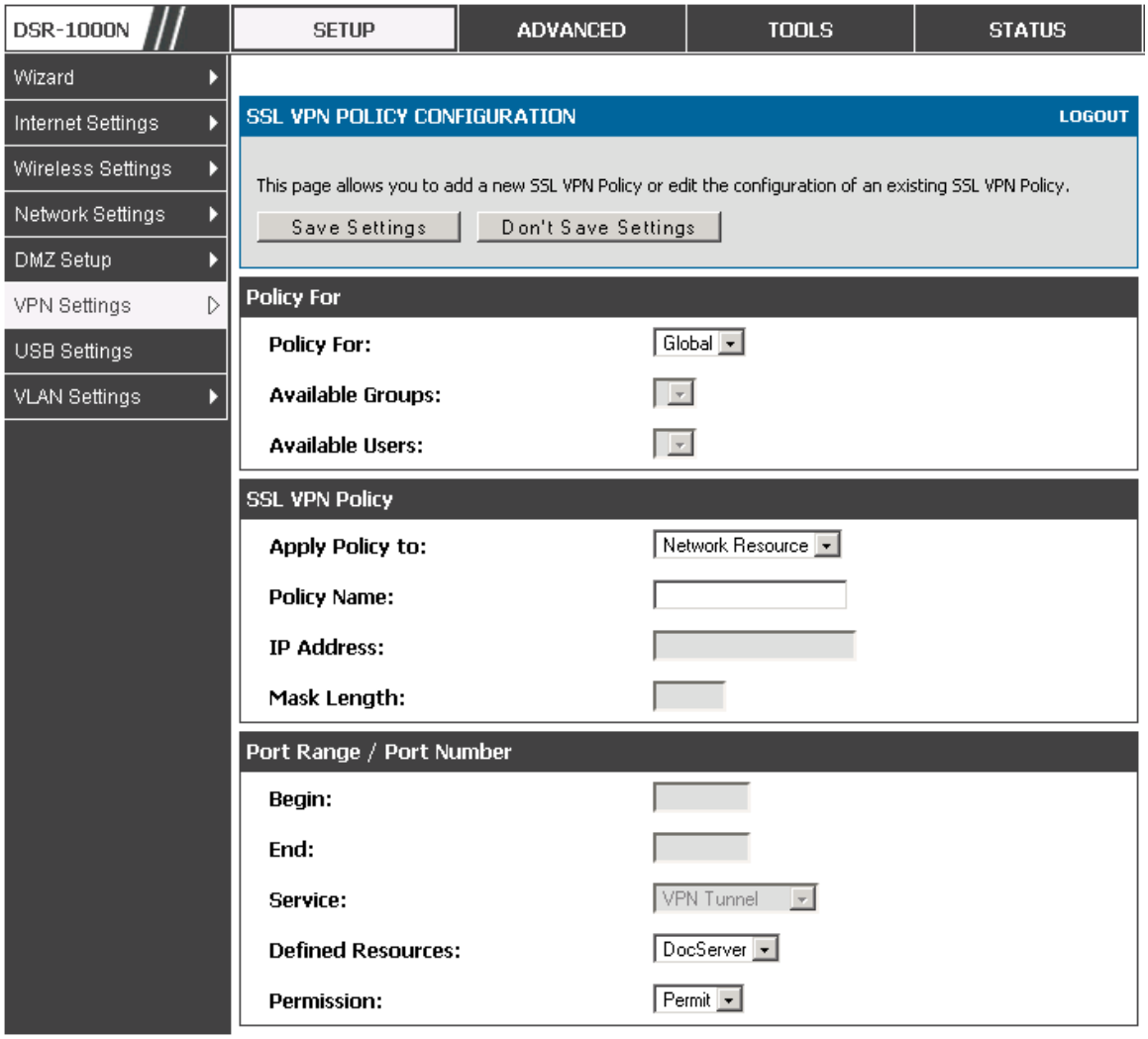

To add a SSL VPN policy, you must first assign it to a user, group, or make it global (i.e. applicable to all SSL VPN users). If the policy is for a group, the available configured groups are shown in a drop down menu and one must be selected. Similarly, for a user defined policy a SSL VPN user must be chosen from the available list of configured users.

The next step is to define the policy details. The policy name is a unique identifier for this rule. The policy can be assigned to a specific Network Resource (details follow in the subsequent section), IP address, IP network, or all devices on the LAN of the router. Based on the selection of one of these four options, the appropriate configuration fields are required (i.e. choosing the network resources from a list of defined resources, or defining the IP addresses). For applying the policy to addresses the port range/port number can be defined.

The final steps require the policy permission to be set to either permit or deny access to the selected addresses or network resources. As well the policy can be specified for one or all of the supported SSL VPN services (i.e. VPN tunnel)

Once defined, the policy goes into effect immediately. The policy name, SSL service it applies to, destination (network resource or IP addresses) and permission (deny/permit) is outlined in a list of configured policies for the router.

**Figure 74: SSL VPN policy configuration**




To configure a policy for a single user or group of users, enter the following information:

- Policy for: The policy can be assigned to a group of users, a single user, or all users (making it a global policy). To customize the policy for specific users or groups, the user can select from the Available Groups and Available Users drop down.
- Apply policy to: This refers to the LAN resources managed by the DSR, and the policy can provide (or prevent) access to network resources, IP address, IP network, etc.
- Policy name: This field is a unique name for identifying the policy. IP address: Required when the governed resource is identified by its IP address or range of addresses.
- Mask Length: Required when the governed resource is identified by a range of addresses within a subnet.

- Port range: If the policy governs a type of traffic, this field is used for defining TCP or UDP port number(s) corresponding to the governed traffic. Leaving the starting and ending port range blank corresponds to all UDP and TCP traffic.
- Service: This is the SSL VPN service made available by this policy. The services offered are VPN tunnel, port forwarding or both.
- Defined resources: This policy can provide access to specific network resources. Network resources must be configured in advance of creating the policy to make them available for selection as a defined resource. Network resources are created with the following information
- Permission: The assigned resources defined by this policy can be explicitly permitted or denied.

## 7.2.1 Using Network Resources

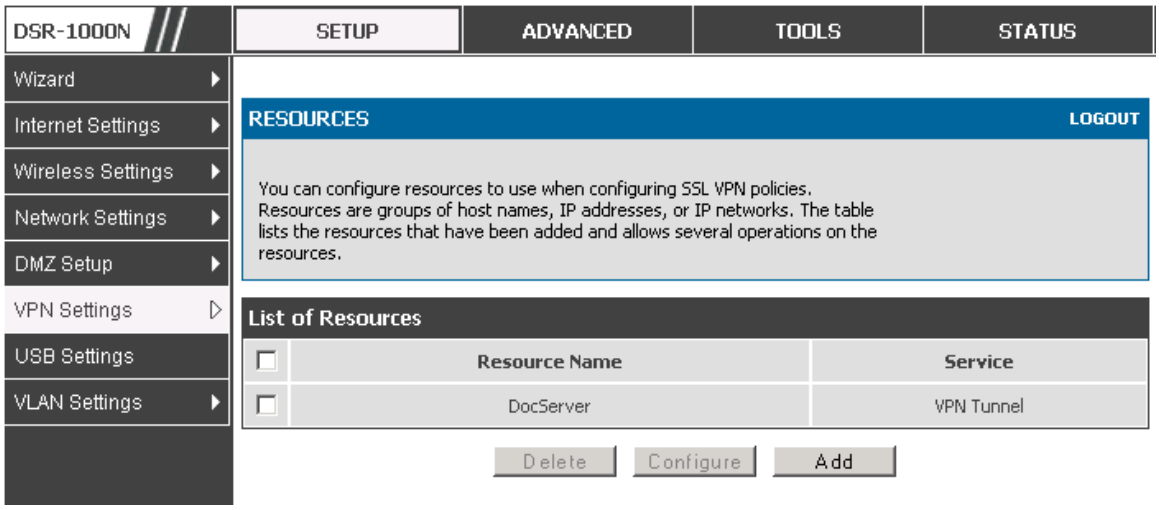
***Setup > VPN Settings > SSL VPN Server > Resources***

Network resources are services or groups of LAN IP addresses that are used to easily create and configure SSL VPN policies. This shortcut saves time when creating similar policies for multiple remote SSL VPN users.

Adding a Network Resource involves creating a unique name to identify the resource and assigning it to one or all of the supported SSL services. Once this is done, editing one of the created network resources allows you to configure the object type (either IP address or IP range) associated with the service. The Network Address, Mask Length, and Port Range/Port Number can all be defined for this resource as required. A network resource can be defined by configuring the following in the GUI:

- Resource name: A unique identifier name for the resource.
- Service: The SSL VPN service corresponding to the resource (VPN tunnel, Port Forwarding or All).

**Figure 75: List of configured resources, which are available to assign to SSL VPN policies**




# 7.3 Application Port Forwarding

***Setup > VPN Settings > SSL VPN Server > Port Forwarding***

Port forwarding allows remote SSL users to access specified network applications or services after they login to the User Portal and launch the Port Forwarding service. Traffic from the remote user to the router is detected and re-routed based on configured port forwarding rules.

Internal host servers or TCP applications must be specified as being made accessible to remote users. Allowing access to a LAN server requires entering the local server IP address and TCP port number of the application to be tunnelled. The table below lists some common applications and corresponding TCP port numbers:

| TCP Application | Port Number |
|---|---|
| FTP Data (usually not needed) | 20 |
| FTP Control Protocol | 21 |
| SSH | 22 |
| Telnet | 23 |
| SMTP (send mail) | 25 |
| HTTP (web) | 80 |
| POP3 (receive mail) | 110 |
| NTP (network time protocol) | 123 |
| Citrix | 1494 |
| Terminal Services | 3389 |
| VNC (virtual network computing) | 5900 or 5800 |

As a convenience for remote users, the hostname (FQDN) of the network server can be configured to allow for IP address resolution. This host name resolution provides users with easy-to-remember FQDN's to access TCP applications instead of error-prone IP addresses when using the Port Forwarding service through the SSL User Portal.

To configure port forwarding, following are required:

- Local Server IP address: The IP address of the local server which is hosting the application.
- TCP port: The TCP port of the application

Once the new application is defined it is displayed in a list of configured applications for port forwarding.

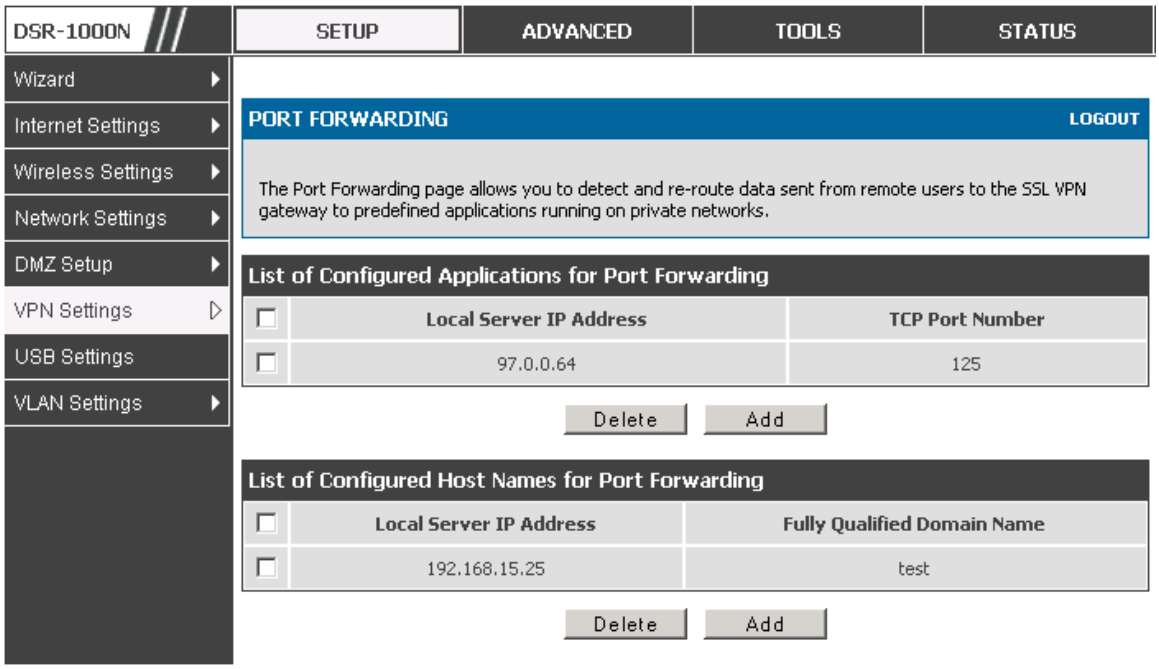
allow users to access the private network servers by using a hostname instead of an IP address, the FQDN corresponding to the IP address is defined in the port forwarding host configuration section.

- Local server IP address: The IP address of the local server hosting the application. The application should be configured in advance.
- Fully qualified domain name: The domain name of the internal server is to be specified

Once the new FQDN is configured, it is displayed in a list of configured hosts for port forwarding.

Defining the hostname is optional as minimum requirement for port forwarding is identifying the TCP application and local server IP address. The local server IP address of the configured hostname must match the IP address of the configured application for port forwarding.

**Figure 76: List of Available Applications for SSL Port Forwarding**




# 7.4 SSL VPN Client Configuration

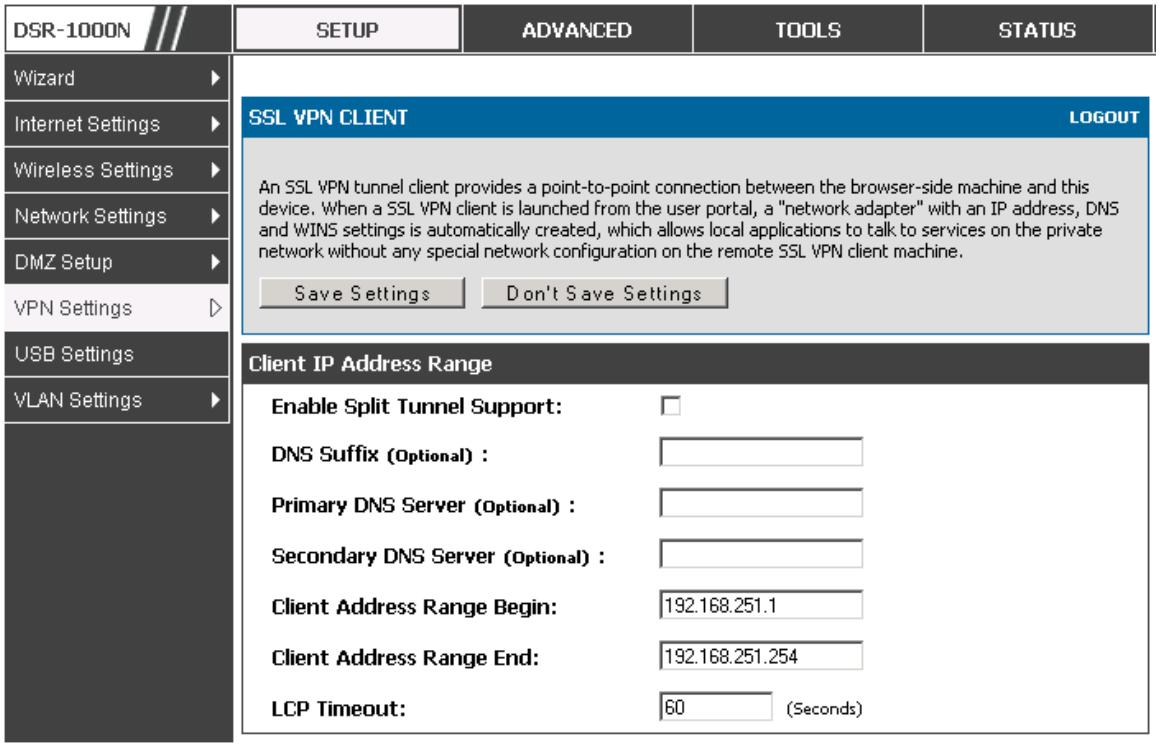
***Setup > VPN Settings > SSL VPN Client > SSL VPN Client***

An SSL VPN tunnel client provides a point-to-point connection between the browser-side machine and this router. When a SSL VPN client is launched from the user portal, a "network adapter" with an IP address from the corporate subnet, DNS and WINS settings is automatically created. This allows local applications to access services on the private network without any special network configuration on the remote SSL VPN client machine.

It is important to ensure that the virtual (PPP) interface address of the VPN tunnel client does not conflict with physical devices on the LAN. The IP address range for the SSL VPN virtual network adapter should be either in a different subnet or non-overlapping range as the corporate LAN.

The IP addresses of the client's network interfaces (Ethernet, Wireless, etc.) cannot be identical to the router's IP address or a server on the corporate LAN that is being accessed through the SSL VPN tunnel.

**Figure 77: SSL VPN client adapter and access configuration**




The router allows full tunnel and split tunnel support. Full tunnel mode just sends all traffic from the client across the VPN tunnel to the router. Split tunnel mode only sends traffic to the private LAN based on pre-specified client routes. These client routes give the SSL client access to specific private networks, thereby allowing access control over specific LAN services.

Client level configuration supports the following:

- Enable Split Tunnel Support: With a split tunnel, only resources which are referenced by client routes can be accessed over the VPN tunnel. With full tunnel support (if the split tunnel option is disabled the DSR acts in full tunnel mode) all addresses on the private network are accessible over the VPN tunnel. Client routes are not required.
- DNS Suffix: The DNS suffix name which will be given to the SSL VPN client. This configuration is optional.
- Primary DNS Server: DNS server IP address to set on the network adaptor created on the client host. This configuration is optional.
- Secondary DNS Server: Secondary DNS server IP address to set on the network adaptor created on the client host. This configuration is optional.
- Client Address Range Begin: Clients who connect to the tunnel get a DHCP served IP address assigned to the network adaptor from the range of addresses beginning with this IP address

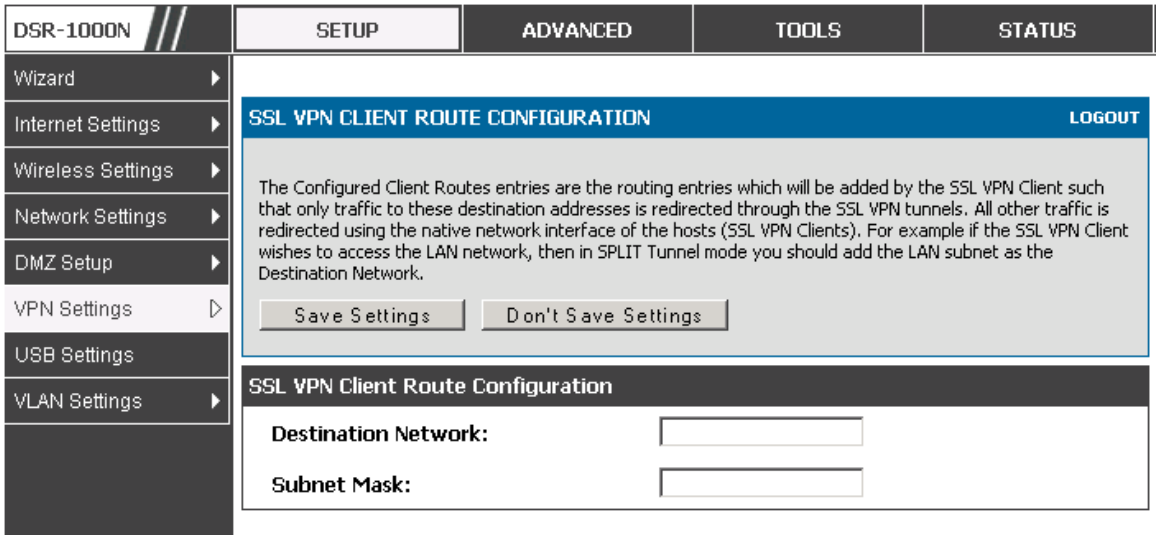
  Client Address Range End: The ending IP address of the DHCP range of addresses served to the client network adaptor.

### *Setup > VPN Settings > SSL VPN Client > Configured Client Routes*

If the SSL VPN client is assigned an IP address in a different subnet than the corporate network, a client route must be added to allow access to the private LAN through the VPN tunnel. As well a static route on the private LAN's firewall (typically this router) is needed to forward private traffic through the VPN Firewall to the remote SSL VPN client. When split tunnel mode is enabled, the user is required to configure routes for VPN tunnel clients:

- Destination network: The network address of the LAN or the subnet information of the destination network from the VPN tunnel clients' perspective is set here.
- Subnet mask: The subnet information of the destination network is set here.

**Figure 78: Configured client routes only apply in split tunnel mode**

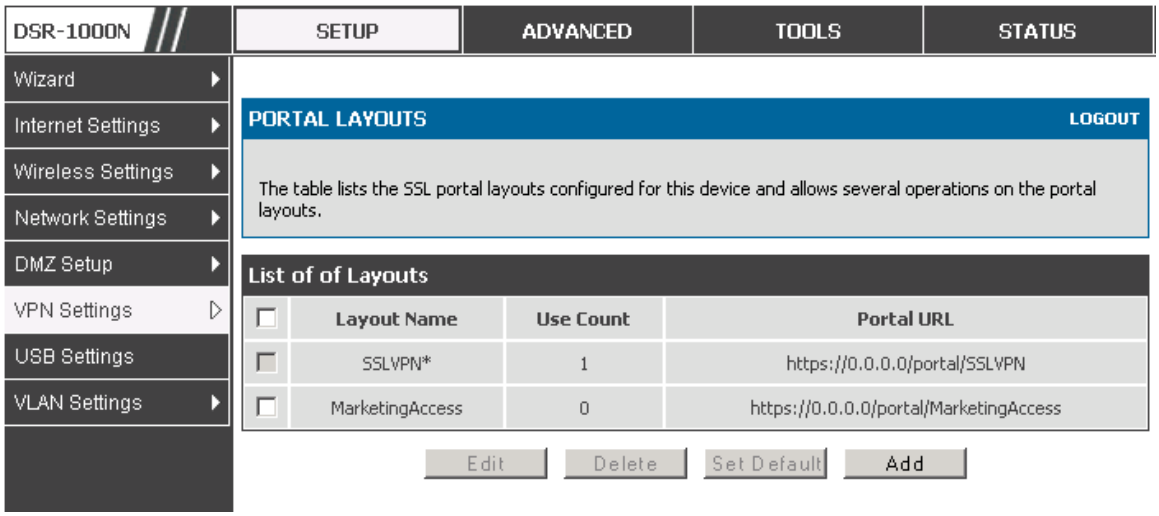



# 7.5 User Portal

### *Setup > VPN Settings > SSL VPN Client > SSL VPN Client Portal*

When remote users want to access the private network through an SSL tunnel (either using the Port Forwarding or VPN tunnel service), they login through a user portal. This portal provides the authentication fields to provide the appropriate access levels and privileges as determined by the router administrator. The domain where the user account is stored must be specified, and the domain determines the authentication method and portal layout screen presented to the remote user.

**Figure 79: List of configured SSL VPN portals. The configured portal can then be associated with an authentication domain**




## 7.5.1 Creating Portal Layouts

***Setup > VPN Settings > SSL VPN Server > Portal Layouts***

The router allows you to create a custom page for remote SSL VPN users that is presented upon authentication. There are various fields in the portal that are customizable for the domain, and this allows the router administrator to communicate details such as login instructions, available services, and other usage details in the portal visible to remote users. During domain setup, configured portal layouts are available to select for all users authenticated by the domain.

The default portal LAN IP address is https://192.168.10.1/scgi-bin/userPortal/portal. This is the same page that opens when the "User Portal" link is clicked on the SSL VPN menu of the router GUI.

The router administrator creates and edits portal layouts from the configuration pages in the SSL VPN menu. The portal name, title, banner name, and banner contents are all customizable to the intended users for this portal. The portal name is appended to the SSL VPN portal URL. As well, the users assigned to this portal (through their authentication domain) can be presented with one or more of the router's supported SSL services such as the VPN Tunnel page or Port Forwarding page.

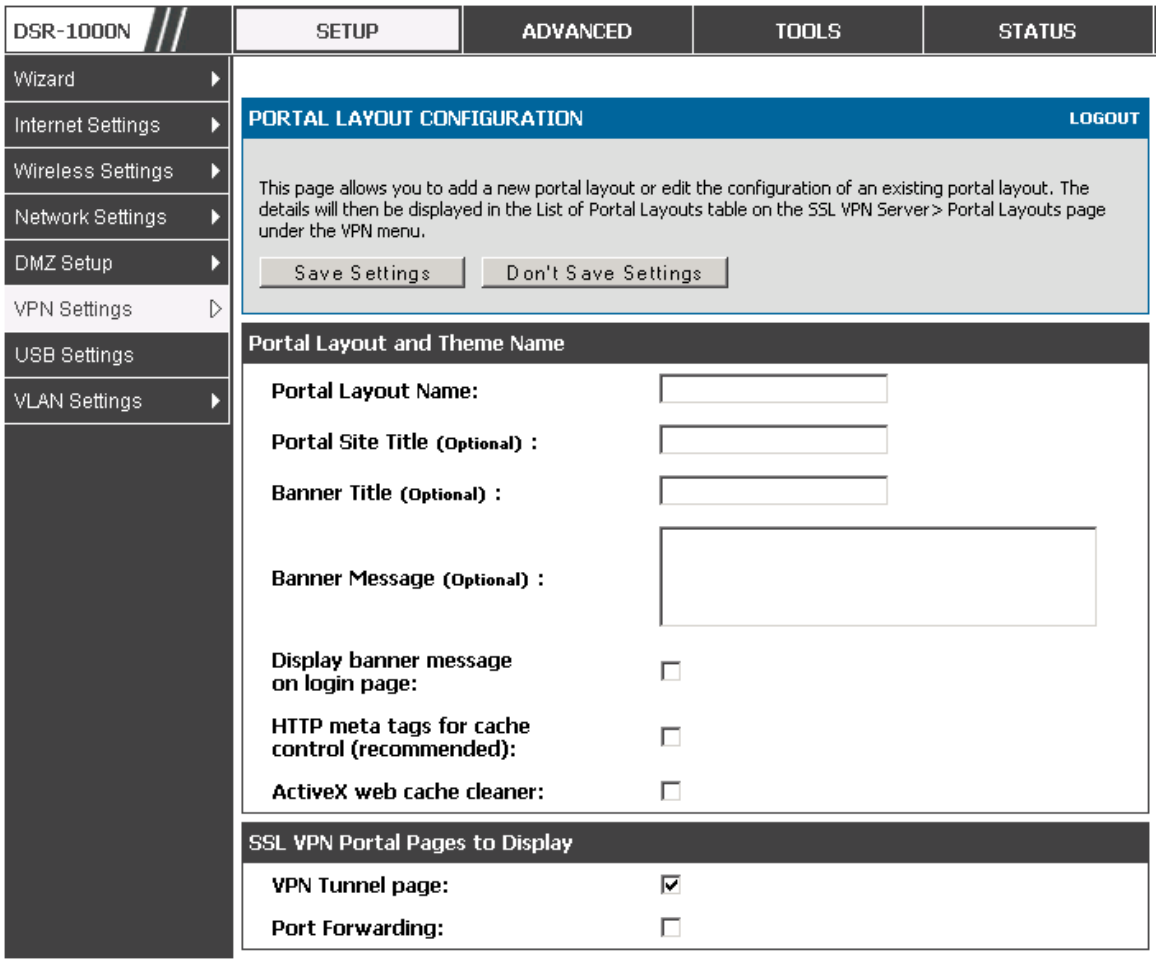
To configure a portal layout and theme, following information is needed:

- Portal layout name: A descriptive name for the custom portal that is being configured. It is used as part of the SSL portal URL.
- Portal site title: The portal web browser window title that appears when the client accesses this portal. This field is optional.
- Banner title: The banner title that is displayed to SSL VPN clients prior to login. This field is optional.

- Banner message: The banner message that is displayed to SSL VPN clients prior to login. This field is optional.
- Display banner message on the login page: The user has the option to either display or hide the banner message in the login page.
- HTTP meta tags for cache control: This security feature prevents expired web pages and data from being stored in the client's web browser cache. It is recommended that the user selects this option.
- ActiveX web cache cleaner: An ActiveX cache control web cleaner can be pushed from the gateway to the client browser whenever users login to this SSL VPN portal.
- SSL VPN portal page to display: The User can either enable VPN tunnel page or Port Forwarding, or both depending on the SSL services to display on this portal.

Once the portal settings are configured, the newly configured portal is added to the list of portal layouts.

**Figure 80: SSL VPN Portal configuration**



# Chapter 8. Advanced Configuration Tools

## 8.1 USB Device Setup

***Setup > USB Settings > USB Status***

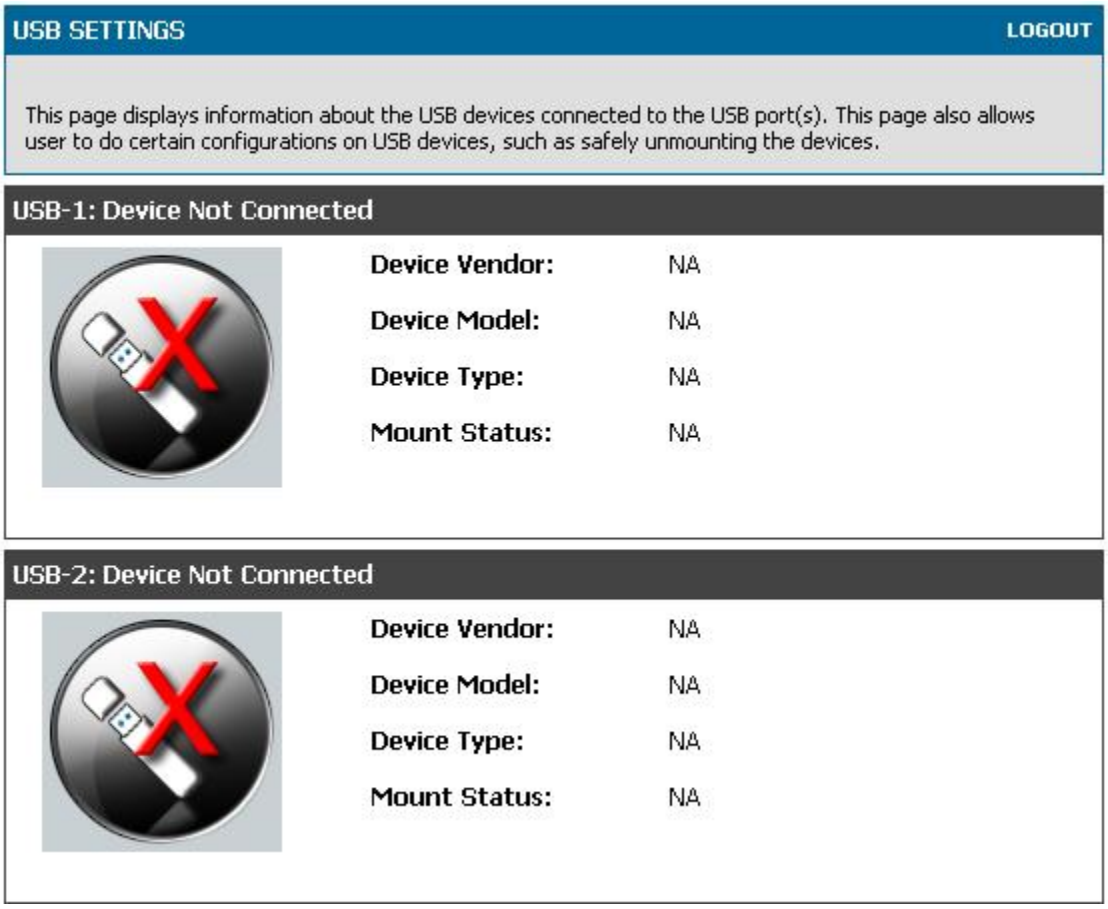
The DSR Unified Services Router has a USB interface for printer access, file sharing and on the DSR-1000 / DSR-1000N models 3G modem support. There is no configuration on the GUI to enable USB device support. Upon inserting your USB storage device, printer cable or 3G modem the DSR router will automatically detect the type of connected peripheral.

- USB Mass Storage: also referred to as a “share port”, files on a USB disk connected to the DSR can be accessed by LAN users as a network drive.
- USB Printer: The DSR can provide the LAN with access to printers connected through the USB. The printer driver will have to be installed on the LAN host and traffic will be routed through the DSR between the LAN and printer.
- USB 3G modem: A 3G modem dongle can be plugged in and used as a secondary WAN. Load balancing, auto-failover, or primary WAN access can be configured through the 3G interface.

To configure printer on a Windows machine, follow below given steps:

- Click 'Start' on the desktop.
- Select ‘Printers and faxes’ option.
- Right click and select 'add printer' or click on 'Add printer' present at the left menu.
- Select the 'Network Printer' radio button and click next (select "device isn't listed in case of Windows7").
- Select the 'Connect to printer using URL' radio button ('Select a shared printer by name ‘in case of Windows 7) and give the following URL http://<Router's LAN IP address>:631/printers/<Model Name> (Model Name can be found in the USB status page of router's GUI).
- Click 'next' and select the appropriate driver from the displayed list.
- Click on 'next' and 'finish' to complete adding the printer.

**Figure 81: USB Device Detection**

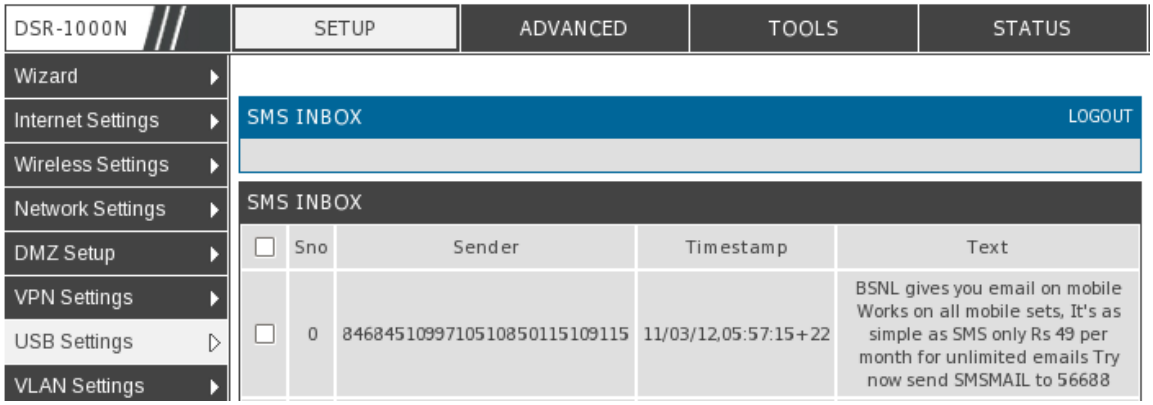



# 8.2 SMS service

***Setup > USB Settings > SMS Service***

The DSR Unified Services Router has a USB interface to connect 3G modem support to send and receive Short Messaging Service. The received messages can be seen in the Inbox and allows the user to create a new SMS. If WAN3 is used in dedicated wan mode, load balancing mode or if 3G USB Device is not connected to router then the controls on this page will be greyed out.

**Figure 82: SMS Service – Send SMS**



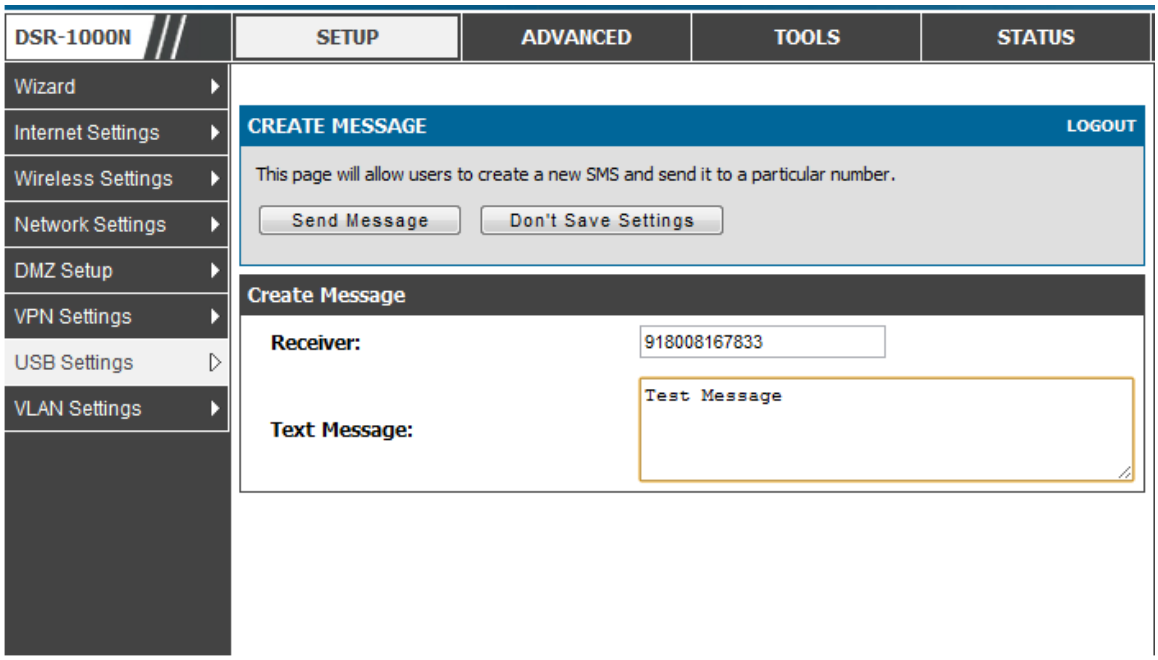

The following details are displayed in SMS INBOX page:

- Sno: Displays the serial number of message in the inbox.
- Sender: Displays the sender of the particular message.
- TimeStamp: Displays the time when the message was sent
- Text: Displays the content of the particular Message.

The following actions are performed:

- Delete: Deletes the SMS having that particular Sno. Only one message can be deleted at a time.
- Refresh: Updates the inbox with new SMS (if any).
- Reply: Lets the user create a new SMS in reply to a particular message by the selected sender. “Receiver" field in the createSms.htm page is filled with the sender's number.
- Forward: Lets the user forward a selected SMS. "Text Message" field in the createSms.htm page is filled with the "Text" of the selected message.

**Figure 83: SMS Service – Receive SMS**




The following details to be provided in Create Message page:

- Receiver: Enter the phone number of the intended receiver of the message.
- Text Message: Enter the body of the message here

Click Send Message to send the message.

Click Don't Save Settings to reset Receiver and Text Message fields.

# 8.3 Authentication Certificates

### *Advanced > Certificates*

This gateway uses digital certificates for IPsec VPN authentication as well as SSL validation (for HTTPS and SSL VPN authentication). You can obtain a digital certificate from a well-known Certificate Authority (CA) such as VeriSign, or generate and sign your own certificate using functionality available on this gateway. The gateway comes with a self-signed certificate, and this can be replaced by one signed by a CA as per your networking requirements. A CA certificate provides strong assurance of the server's identity and is a requirement for most corporate network VPN solutions.

The certificates menu allows you to view a list of certificates (both from a CA and self-signed) currently loaded on the gateway. The following certificate data is displayed in the list of Trusted (CA) certificates:

CA Identity (Subject Name): The certificate is issued to this person or organization

Issuer Name: This is the CA name that issued this certificate

Expiry Time: The date after which this Trusted certificate becomes invalid

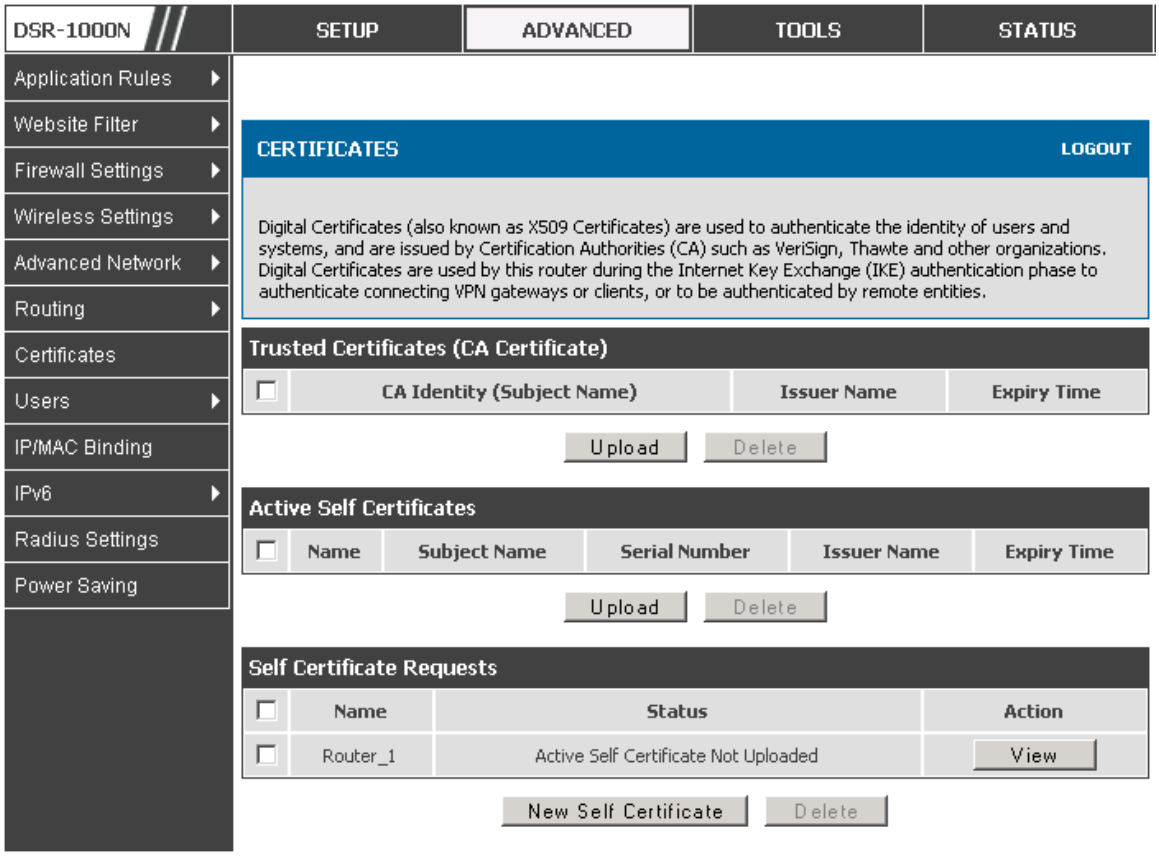
A self certificate is a certificate issued by a CA identifying your device (or self-signed if you don't want the identity protection of a CA). The Active Self Certificate

table lists the self certificates currently loaded on the gateway. The following information is displayed for each uploaded self certificate:

- Name: The name you use to identify this certificate, it is not displayed to IPsec VPN peers or SSL users.
- Subject Name: This is the name that will be displayed as the owner of this certificate. This should be your official registered or company name, as IPsec or SSL VPN peers are shown this field.
- Serial Number: The serial number is maintained by the CA and used to identify this signed certificate.
- Issuer Name: This is the CA name that issued (signed) this certificate
- Expiry Time: The date after which this signed certificate becomes invalid – you should renew the certificate before it expires.

To request a self certificate to be signed by a CA, you can generate a Certificate Signing Request from the gateway by entering identification parameters and passing it along to the CA for signing. Once signed, the CA's Trusted Certificate and signed certificate from the CA are uploaded to activate the self-certificate validating the identity of this gateway. The self certificate is then used in IPsec and SSL connections with peers to validate the gateway's authenticity.

**Figure 84: Certificate summary for IPsec and HTTPS management**

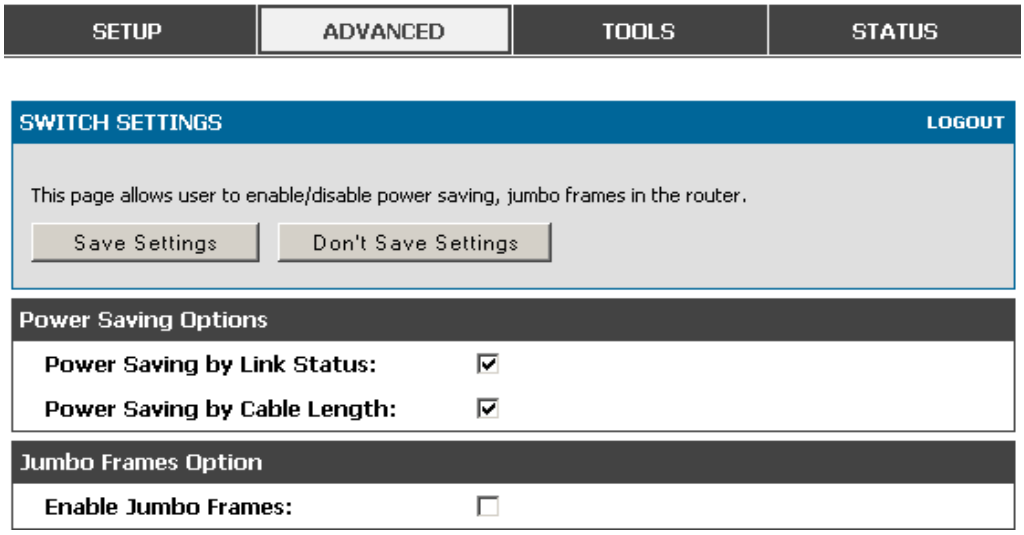


# 8.4 Advanced Switch Configuration

The DSR allows you to adjust the power consumption of the hardware based on your actual usage. The two "green" options available for your LAN switch are Power Saving by Link Status and Length Detection State. With "Power Saving by Link Status" option enabled, the total power consumption by the LAN switch is dependent function of on the number of connected ports. The overall current draw when a single port is connected is less than when all the ports are connected. With "Length Detection State" option enabled, the overall current supplied to a LAN port is reduced when a smaller cable length is connected on a LAN port.

Jumbo Frames support can be configured as an advanced switch configuration. Jumbo frames are Ethernet frames with more than 1500 bytes of payload. When this option is enabled, the LAN devices can exchange information at Jumbo frames rate.

**Figure 85: Advanced Switch Settings**



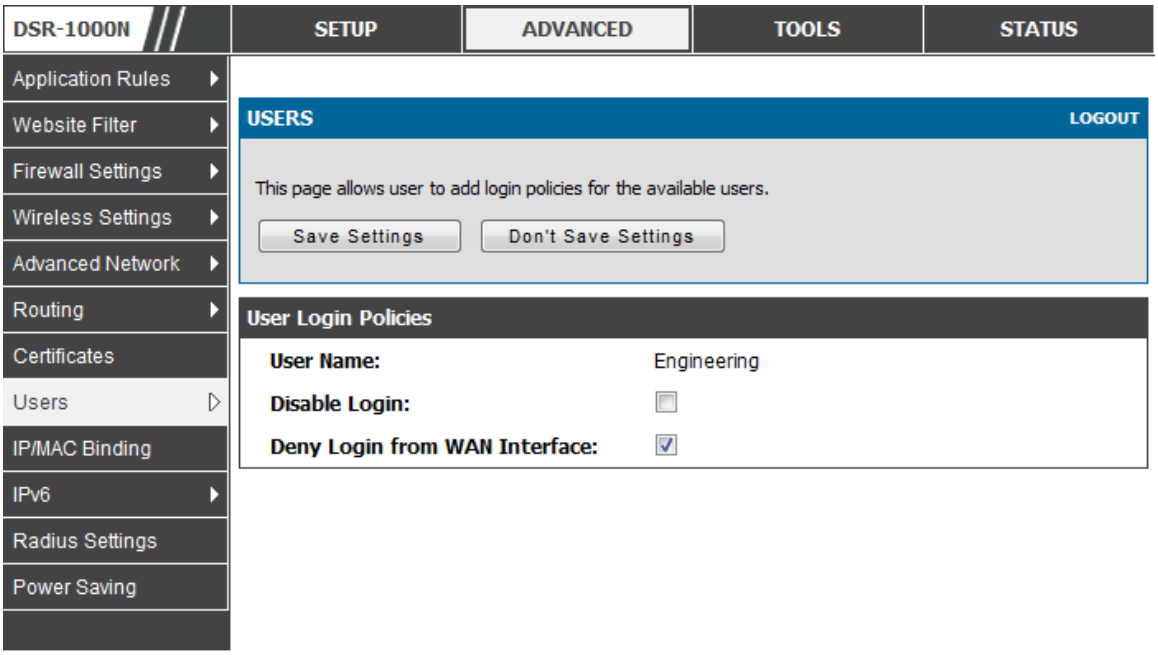
# Chapter 9. Administration & Management

## 9.1 Configuration Access Control

The primary means to configure this gateway via the browser-independent GUI. The GUI can be accessed from LAN node by using the gateway's LAN IP address and HTTP, or from the WAN by using the gateway's WAN IP address and HTTPS (HTTP over SSL).

Administrator and Guest users are permitted to login to the router's management interface. The user type is set in the ***Advanced > Users > Users*** page. The Admin or Guest user can be configured to access the router GUI from the LAN or the Internet (WAN) by enabling the corresponding Login Policy.

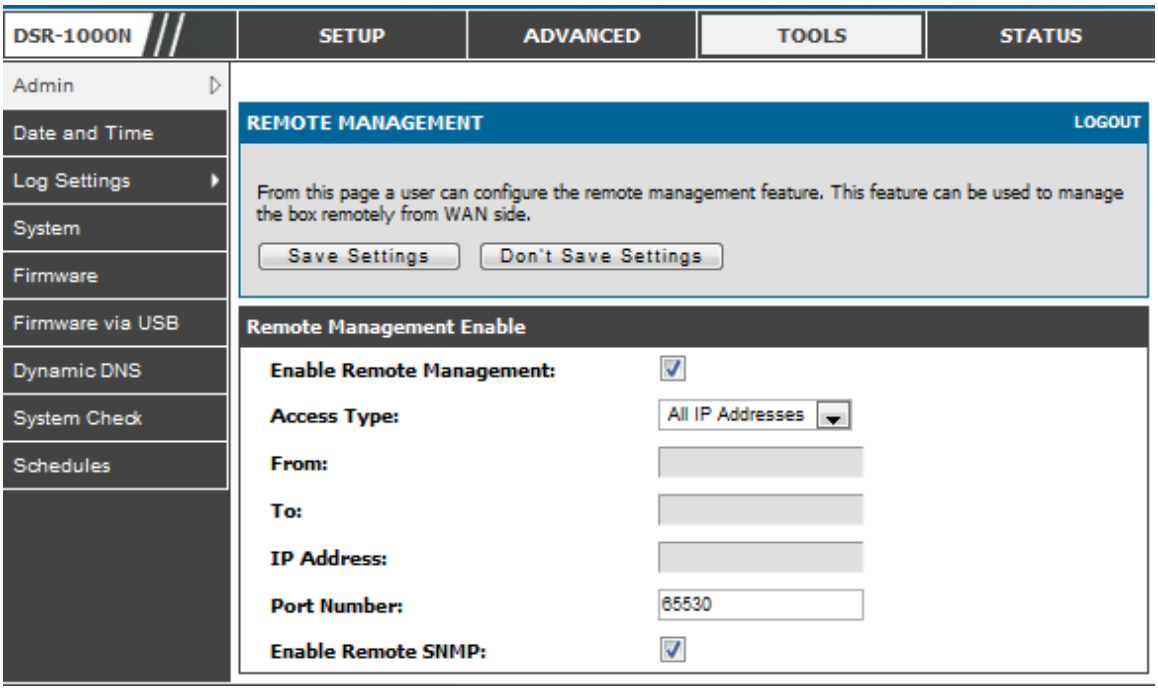
**Figure 86: User Login policy configuration**




### 9.1.1 Remote Management

Both HTTPS and telnet access can be restricted to a subset of IP addresses. The router administrator can define a known PC, single IP address or range of IP addresses that are allowed to access the GUI with HTTPS. The opened port for SSL traffic can be changed from the default of 443 at the same time as defining the allowed remote management IP address range.

**Figure 87: Remote Management from the WAN**




## 9.1.2 CLI Access

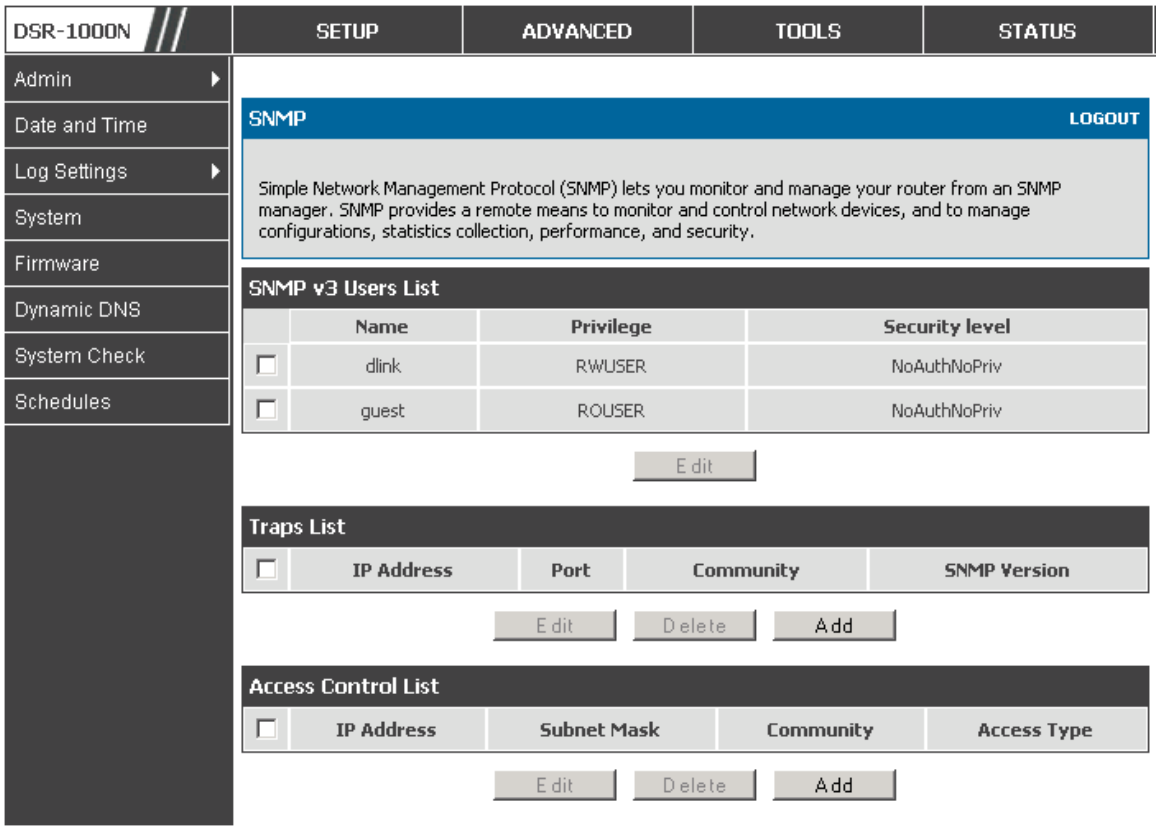
In addition to the web-based GUI, the gateway supports SSH and Telnet management for command-line interaction. The CLI login credentials are shared with the GUI for administrator users. To access the CLI, type "cli" in the SSH or console prompt and login with administrator user credentials.

# 9.2 SNMP Configuration

***Tools > Admin > SNMP***

SNMP is an additional management tool that is useful when multiple routers in a network are being managed by a central Master system. When an external SNMP manager is provided with this router's Management Information Base (MIB) file, the manager can update the router's hierarchal variables to view or update configuration parameters. The router as a managed device has an SNMP agent that allows the MIB configuration variables to be accessed by the Master (the SNMP manager). The Access Control List on the router identifies managers in the network that have read-only or read-write SNMP credentials. The Traps List outlines the port over which notifications from this router are provided to the SNMP community (managers) and also the SNMP version (v1, v2c, v3) for the trap.

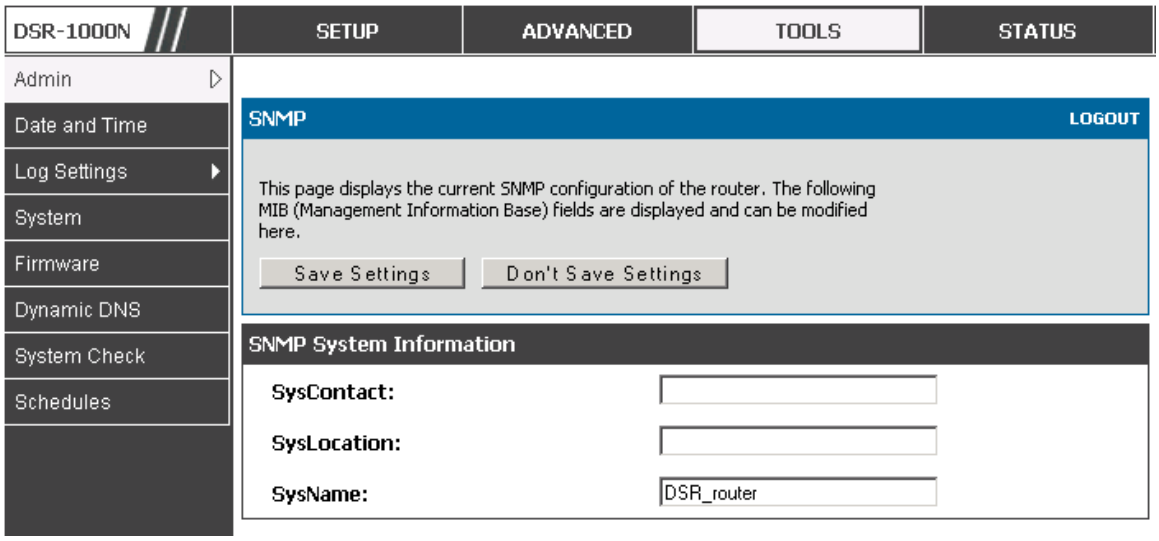
**Figure 88: SNMP Users, Traps, and Access Control**




### *Tools > Admin > SNMP System Info*

The router is identified by an SNMP manager via the System Information. The identifier settings The SysName set here is also used to identify the router for SysLog logging.

**Figure 89: SNMP system information for this router**




# 9.3 Configuring Time Zone and NTP

### *Tools > Date and Time*

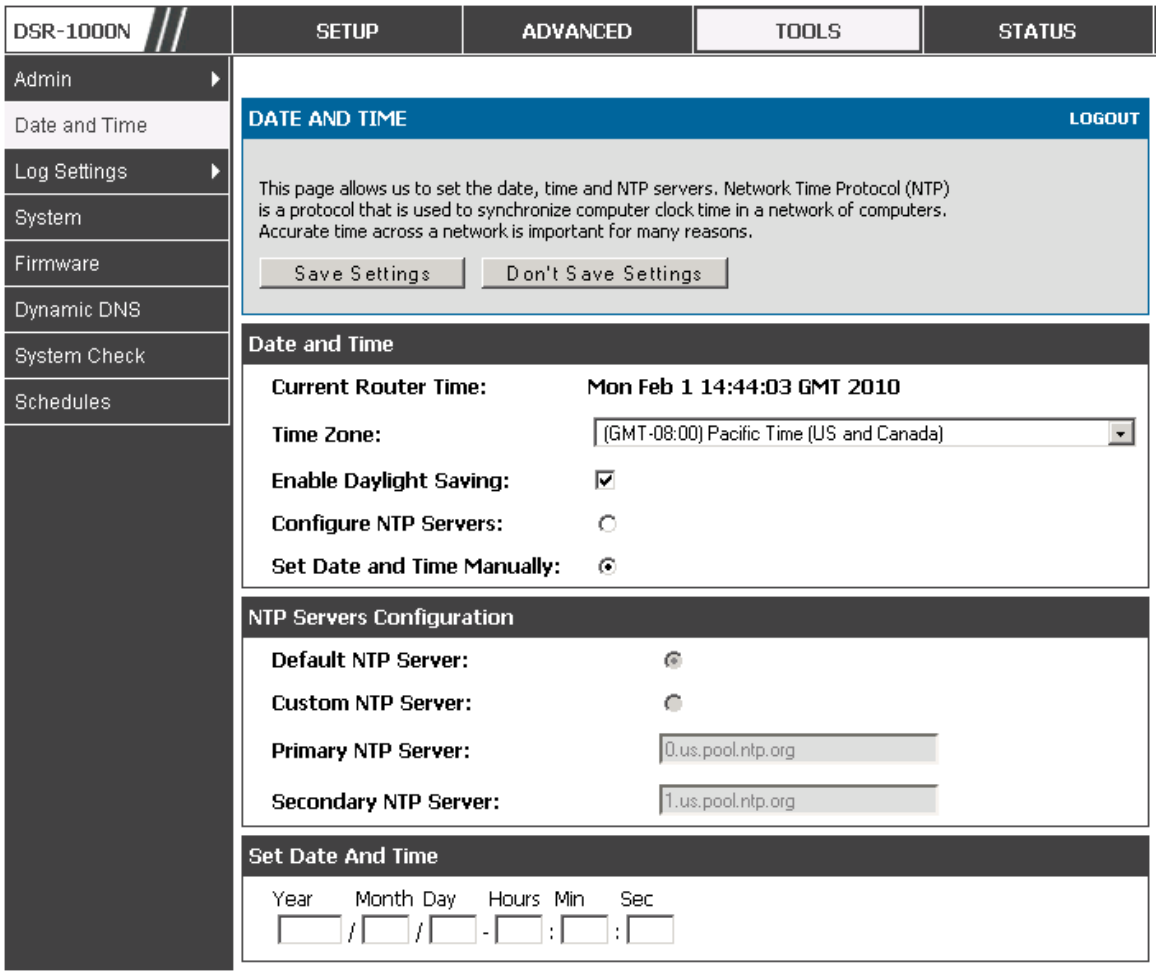
You can configure your time zone, whether or not to adjust for Daylight Savings Time, and with which Network Time Protocol (NTP) server to synchronize the date and time. You can choose to set Date and Time manually, which will store the information on the router's real time clock (RTC). If the router has access to the internet, the most accurate mechanism to set the router time is to enable NTP server communication.

> Accurate date and time on the router is critical for firewall schedules, Wi-Fi power saving support to disable APs at certain times of the day, and accurate logging.

Please follow the steps below to configure the NTP server:

1. Select the router's time zone, relative to Greenwich Mean Time (GMT).
2. If supported for your region, click to Enable Daylight Savings.
3. Determine whether to use default or custom Network Time Protocol (NTP) servers. If custom, enter the server addresses or FQDN.

**Figure 90: Date, Time, and NTP server setup**




# 9.4 Log Configuration

This router allows you to capture log messages for traffic through the firewall, VPN, and over the wireless AP. As an administrator you can monitor the type of traffic that goes through the router and also be notified of potential attacks or errors when they are detected by the router. The following sections describe the log configuration settings and the ways you can access these logs.

## 9.4.1 Defining What to Log

***Tools > Log Settings > Logs Facility***

The Logs Facility page allows you to determine the granularity of logs to receive from the router. There are three core components of the router, referred to as Facilities:

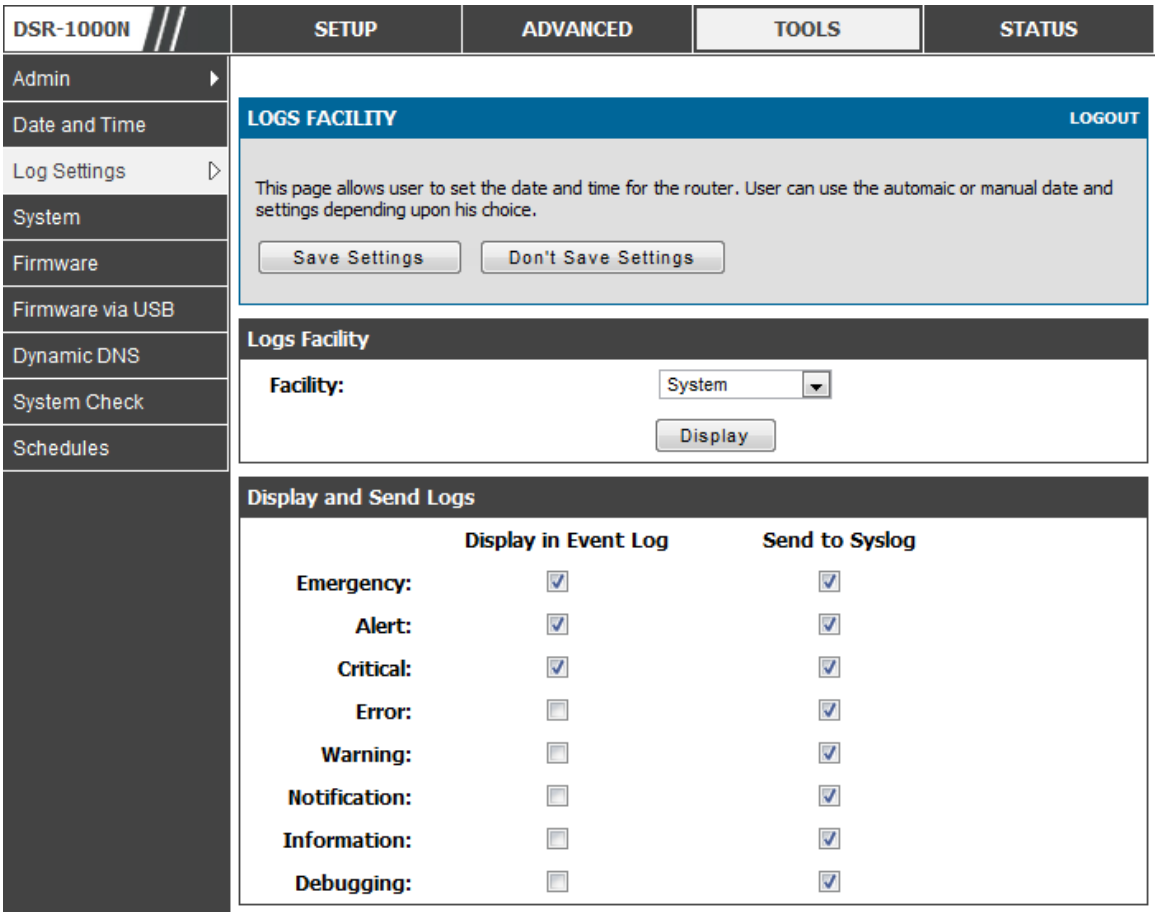
- Kernel: This refers to the Linux kernel. Log messages that correspond to this facility would correspond to traffic through the firewall or network stack.

- System: This refers to application and management level features available on this router, including SSL VPN and administrator changes for managing the unit.
- Wireless: This facility corresponds to the 802.11 driver used for providing AP functionality to your network.
- Local1-UTM: This facility corresponds to IPS (Intrusion Prevention System) which helps in detecting malicious intrusion attempts from the WAN.

For each facility, the following events (in order of severity) can be logged: Emergency, Alert, Critical, Error, Warning, Notification, Information, Debugging. When a particular severity level is selected, all events with severity equal to and greater than the chosen severity are captured. For example if you have configured CRITICAL level logging for the Wireless facility, then 802.11 logs with severities CRITICAL, ALERT, and EMERGENCY are logged. The severity levels available for logging are:

- EMERGENCY: system is unusable
- ALERT: action must be taken immediately
- CRITICAL: critical conditions
- ERROR: error conditions
- WARNING: warning conditions
- NOTIFICATION: normal but significant condition
- INFORMATION: informational
- DEBUGGING: debug-level messages

**Figure 91: Facility settings for Logging**




The display for logging can be customized based on where the logs are sent, either the Event Log viewer in the GUI (the Event Log viewer is in the ***Status > Logs*** page) or a remote Syslog server for later review. E-mail logs, discussed in a subsequent section, follow the same configuration as logs configured for a Syslog server.

### *Tools > Log Settings > Logs Configuration*

This page allows you to determine the type of traffic through the router that is logged for display in Syslog, E-mailed logs, or the Event Viewer. Denial of service attacks, general attack information, login attempts, dropped packets, and similar events can be captured for review by the IT administrator.

Traffic through each network segment (LAN, WAN, DMZ) can be tracked based on whether the packet was accepted or dropped by the firewall.

Accepted Packets are those that were successfully transferred through the corresponding network segment (i.e. LAN to WAN). This option is particularly useful when the Default Outbound Policy is "Block Always" so the IT admin can monitor traffic that is passed through the firewall.

- Example: If Accept Packets from LAN to WAN is enabled and there is a firewall rule to allow SSH traffic from LAN, then whenever a LAN machine tries to make an SSH connection, those packets will be accepted and a message will be logged. (Assuming the log option is set to Allow for the SSH firewall rule.)

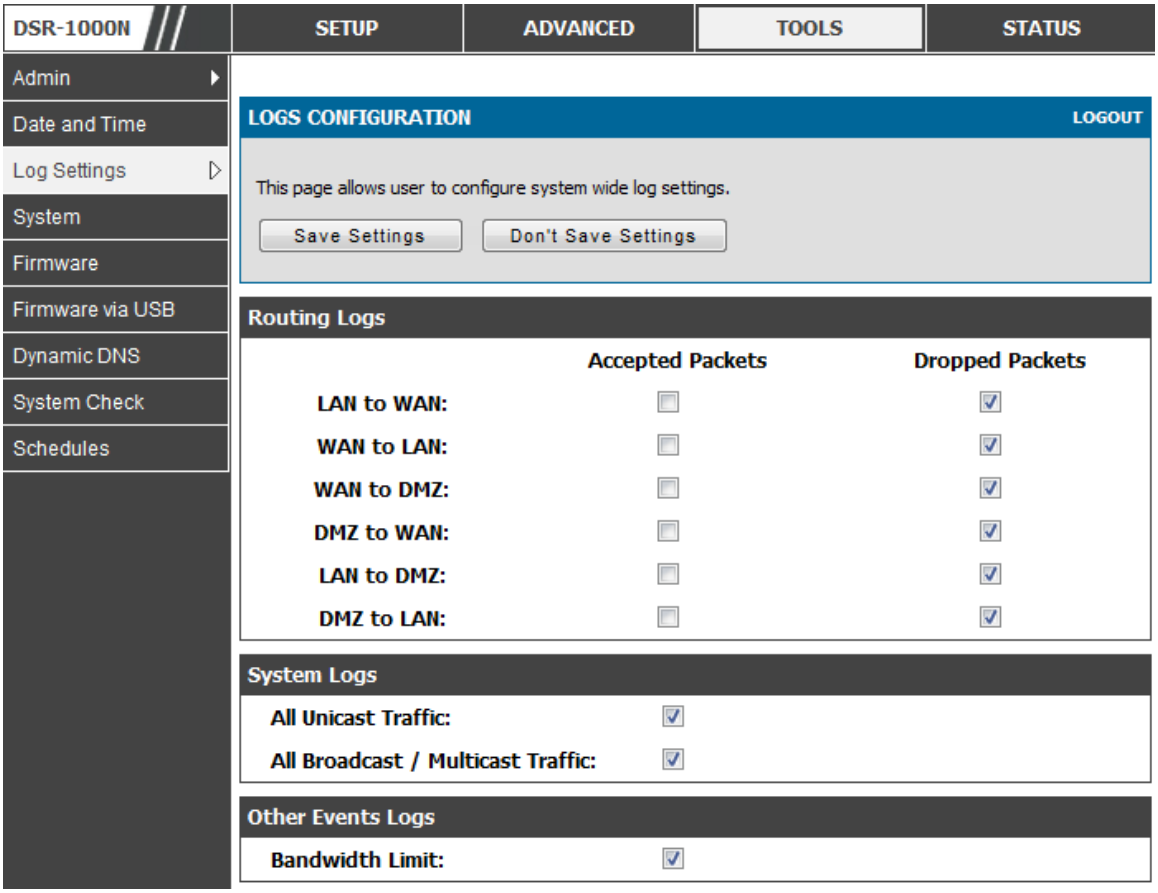
Dropped Packets are packets that were intentionally blocked from being transferred through the corresponding network segment. This option is useful when the Default Outbound Policy is "Allow Always".

- Example: If Drop Packets from LAN to WAN is enabled and there is a firewall rule to block SSH traffic from LAN, then whenever a LAN machine tries to make an SSH connection, those packets will be dropped and a message will be logged. (Make sure the log option is set to allow for this firewall rule.)

Enabling accepted packet logging through the firewall may generate a significant volume of log messages depending on the typical network traffic. This is recommended for debugging purposes only.

In addition to network segment logging, unicast and multicast traffic can be logged. Unicast packets have a single destination on the network, whereas broadcast (or multicast) packets are sent to all possible destinations simultaneously. One other useful log control is to log packets that are dropped due to configured bandwidth profiles over a particular interface. This data will indicate to the admin whether the bandwidth profile has to be modified to account for the desired internet traffic of LAN users.

**Figure 92: Log configuration options for traffic through router**




## 9.4.2 Sending Logs to E-mail or Syslog

***Tools > Log Settings > Remote Logging***

Once you have configured the type of logs that you want the router to collect, they can be sent to either a Syslog server or an E-Mail address. For remote logging a key configuration field is the Remote Log Identifier. Every logged message will contain the configured prefix of the Remote Log Identifier, so that syslog servers or email addresses that receive logs from more than one router can sort for the relevant device's logs.

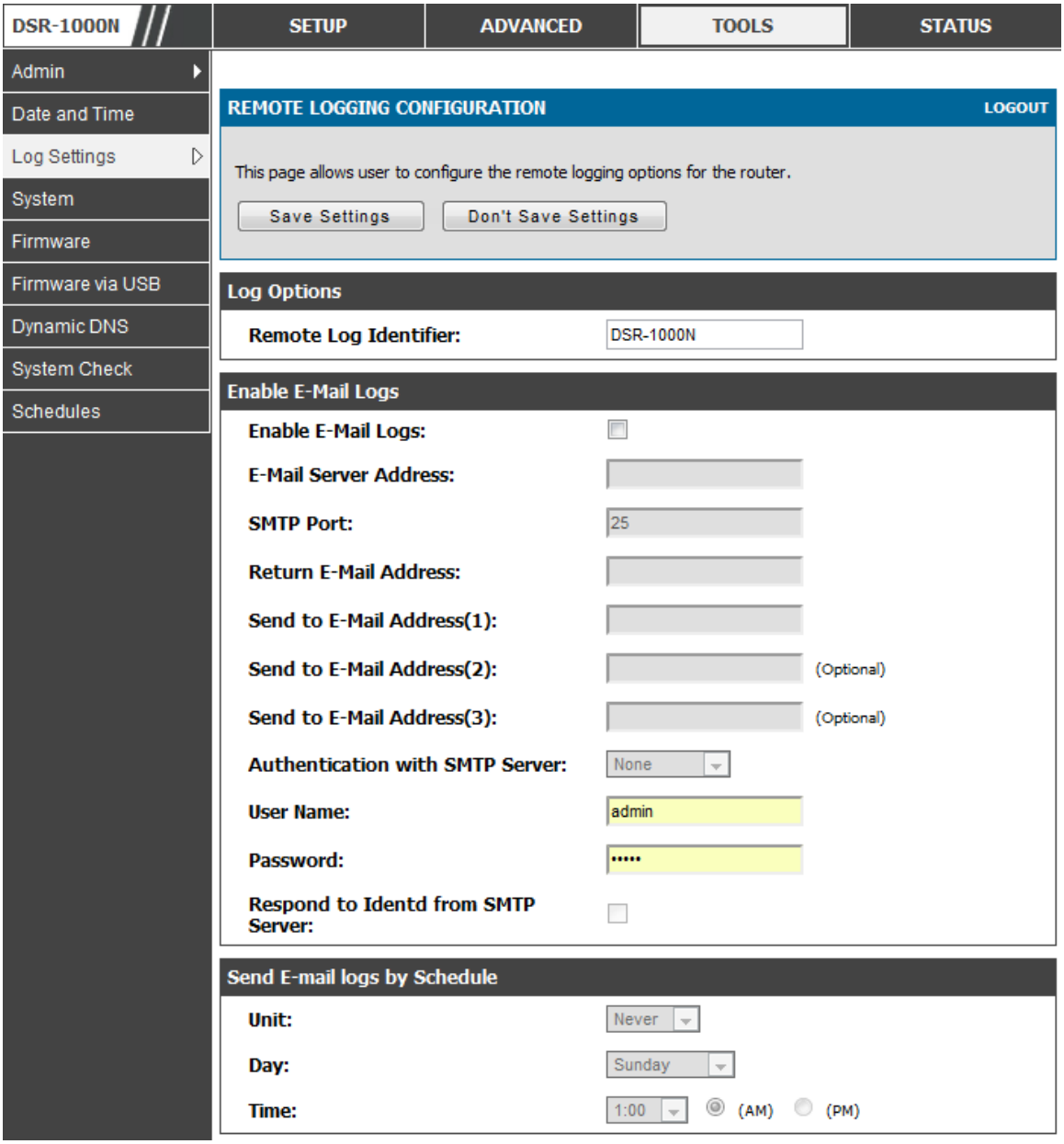
Once you enable the option to e-mail logs, enter the e-mail server's address (IP address or FQDN) of the SMTP server. The router will connect to this server when sending e-mails out to the configured addresses. The SMTP port and return e-mail addresses are required fields to allow the router to package the logs and send a valid e-mail that is accepted by one of the configured "send-to" addresses. Up to three e-mail addresses can be configured as log recipients.

In order to establish a connection with the configured SMTP port and server, define the server's authentication requirements. The router supports Login Plain (no encryption) or CRAM-MD5 (encrypted) for the username and password data to be sent to the SMTP server. Authentication can be disabled if the server does not have

this requirement. In some cases the SMTP server may send out IDENT requests, and this router can have this response option enabled as needed.

Once the e-mail server and recipient details are defined you can determine when the router should send out logs. E-mail logs can be sent out based on a defined schedule by first choosing the unit (i.e. the frequency) of sending logs: Hourly, Daily, or Weekly. Selecting Never will disable log e-mails but will preserve the e-mail server settings.

**Figure 93: E-mail configuration as a Remote Logging option**

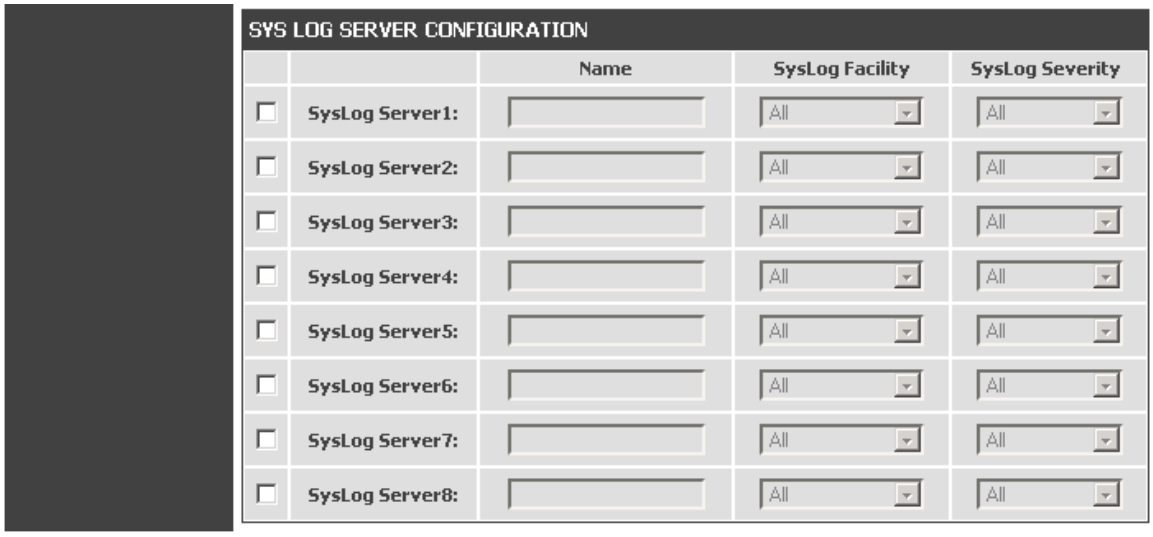



An external Syslog server is often used by network administrator to collect and store logs from the router. This remote device typically has less memory constraints than

the local Event Viewer on the router's GUI, and thus can collect a considerable number of logs over a sustained period. This is typically very useful for debugging network issues or to monitor router traffic over a long duration.

This router supports up to 8 concurrent Syslog servers. Each can be configured to receive different log facility messages of varying severity. To enable a Syslog server select the checkbox next to an empty Syslog server field and assign the IP address or FQDN to the Name field. The selected facility and severity level messages will be sent to the configured (and enabled) Syslog server once you save this configuration page's settings.

**Figure 94: Syslog server configuration for Remote Logging (continued)**




## 9.4.3 Event Log Viewer in GUI

### *Status > Logs > View All Logs*

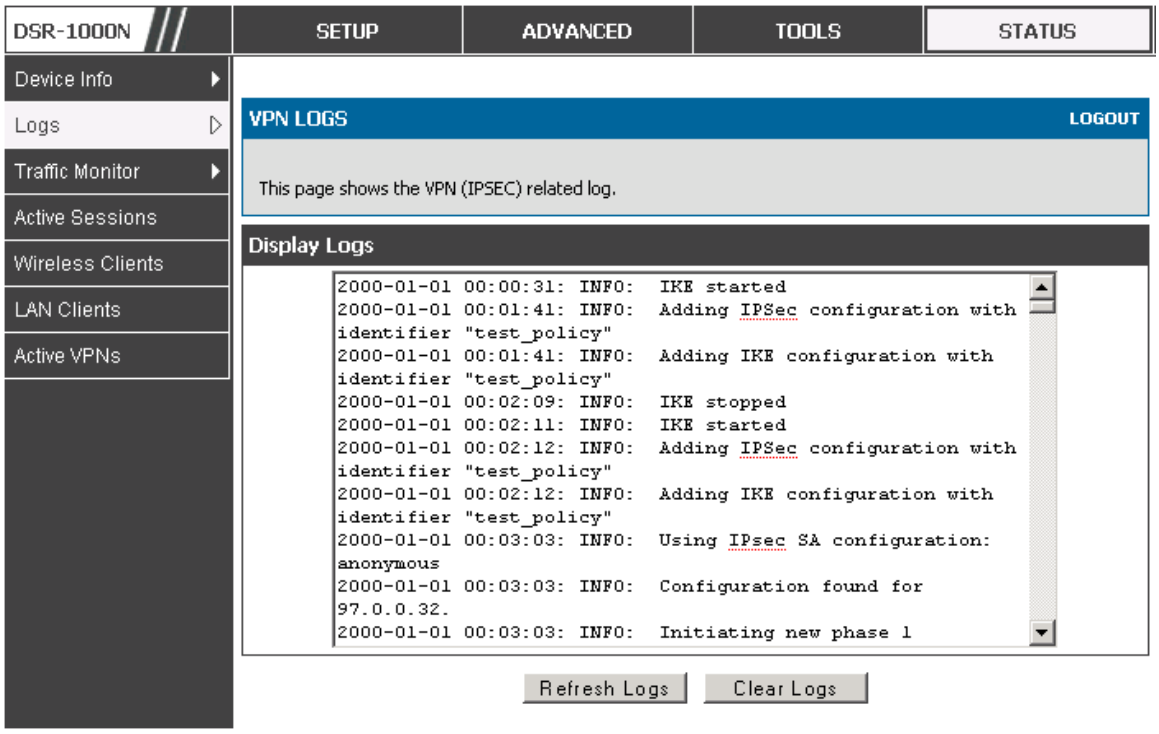
The router GUI lets you observe configured log messages from the Status menu. Whenever traffic through or to the router matches the settings determined in the ***Tools > Log Settings > Logs Facility*** or ***Tools > Log Settings > Logs Configuration*** pages, the corresponding log message will be displayed in this window with a timestamp.

> It is very important to have accurate system time (manually set or from a NTP server) in order to understand log messages.

### *Status > Logs > VPN Logs*

This page displays IPsec VPN log messages as determined by the configuration settings for facility and severity. This data is useful when evaluating IPsec VPN traffic and tunnel health.

**Figure 95: VPN logs displayed in GUI event viewer**




# 9.5 Backing up and Restoring Configuration Settings

***Tools > System***

You can back up the router's custom configuration settings to restore them to a different device or the same router after some other changes. During backup, your settings are saved as a file on your host. You can restore the router's saved settings from this file as well. This page will also allow you revert to factory default settings or execute a soft reboot of the router.

**IMPORTANT!** During a restore operation, do NOT try to go online, turn off the router, shut down the PC, or do anything else to the router until the operation is complete. This will take approximately 1 minute. Once the LEDs are turned off, wait a few more seconds before doing anything with the router.

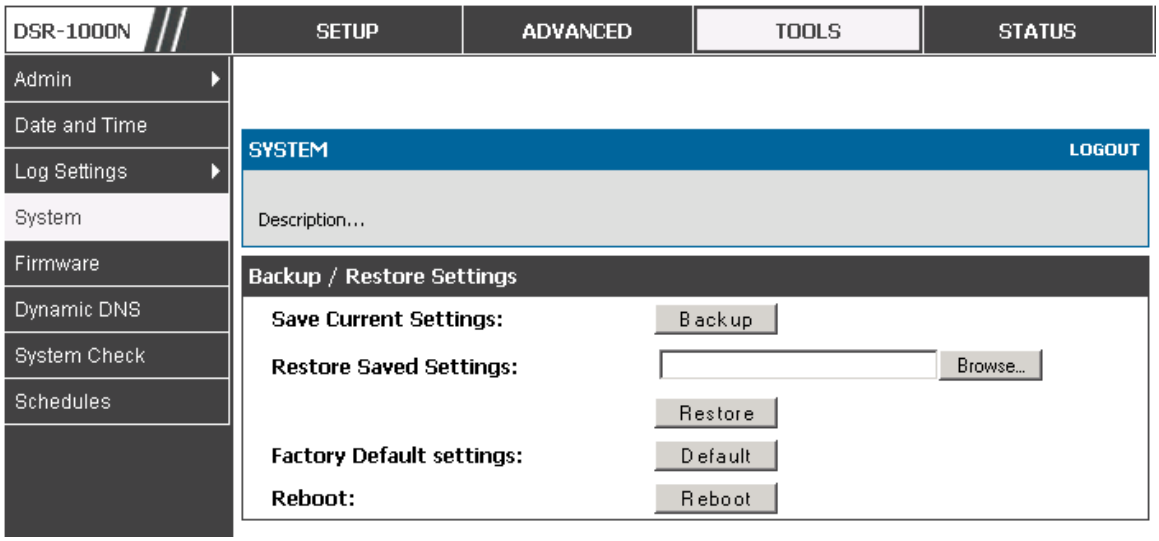
For backing up configuration or restoring a previously saved configuration, please follow the steps below:

1. To save a copy of your current settings, click the Backup button in the Save Current Settings option. The browser initiates an export of the configuration file and prompts to save the file on your host.

2. To restore your saved settings from a backup file, click Browse then locate the file on the host. After clicking Restore, the router begins importing the file's saved configuration settings. After the restore, the router reboots automatically with the restored settings.

3. To erase your current settings and revert to factory default settings, click the Default button. The router will then restore configuration settings to factory defaults and will reboot automatically. (See Appendix B for the factory default parameters for the router).

**Figure 96: Restoring configuration from a saved file will result in the current configuration being overwritten and a reboot**



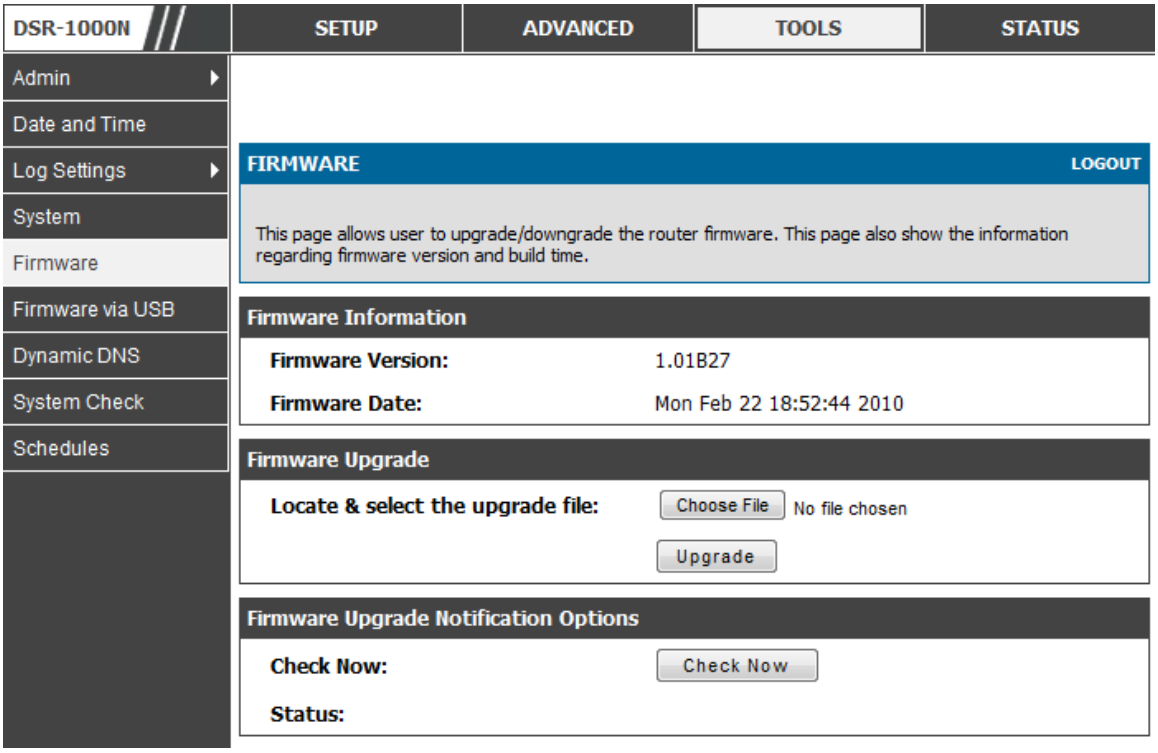

# 9.6 Upgrading Router Firmware

***Tools > Firmware***

You can upgrade to a newer software version from the Administration web page. In the Firmware Upgrade section, to upgrade your firmware, click Browse, locate and select the firmware image on your host, and click Upgrade. After the new firmware image is validated, the new image is written to flash, and the router is automatically rebooted with the new firmware. The Firmware Information and also the ***Status > Device Info > Device Status*** page will reflect the new firmware version.

**IMPORTANT!** During firmware upgrade, do NOT try to go online, turn off the DSR, shut down the PC, or interrupt the process in anyway until the operation is complete. This should take only a minute or so including the reboot process. Interrupting the upgrade process at specific points when the flash is being written to may corrupt the flash memory and render the router unusable without a low-level process of restoring the flash firmware (not through the web GUI).

**Figure 97: Firmware version information and upgrade option**




This router also supports an automated notification to determine if a newer firmware version is available for this router. By clicking the Check Now button in the notification section, the router will check a D-Link server to see if a newer firmware version for this router is available for download and update the Status field below.

**IMPORTANT!** After firmware 1.04B13, new user database architecture is introduced. The new user database is easier to setup and more intuitively to use. When users upgrade DSR's firmware to 1.04B13 or latter, DSR will automatically merge users in the old database into the new one. However, all user databases will be swept away when users downgrade firmware from 1.04B13 to the older one, e.g. 1.03B43. Please keep in mind: backup your user database for further restoring once you decide to downgrade firmware to the older one.

# 9.7 Dynamic DNS Setup

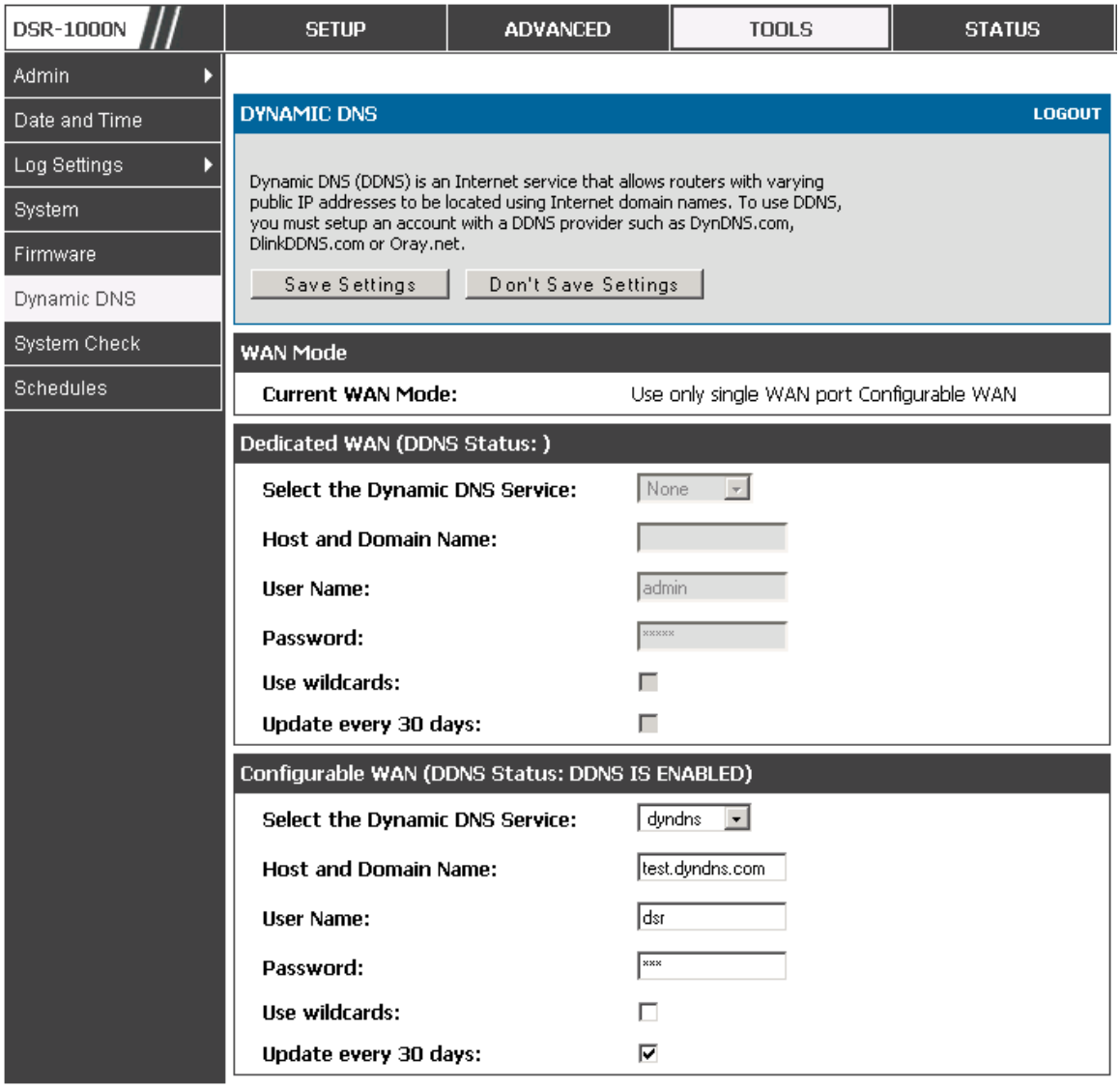
### *Tools > Dynamic DNS*

Dynamic DNS (DDNS) is an Internet service that allows routers with varying public IP addresses to be located using Internet domain names. To use DDNS, you must setup an account with a DDNS provider such as DynDNS.org, D-Link DDNS, or Oray.net.

Each configured WAN can have a different DDNS service if required. Once configured, the router will update DDNS services changes in the WAN IP address so that features that are dependent on accessing the router's WAN via FQDN will be

directed to the correct IP address. When you set up an account with a DDNS service, the host and domain name, username, password and wildcard support will be provided by the account provider.

**Figure 98: Dynamic DNS configuration**

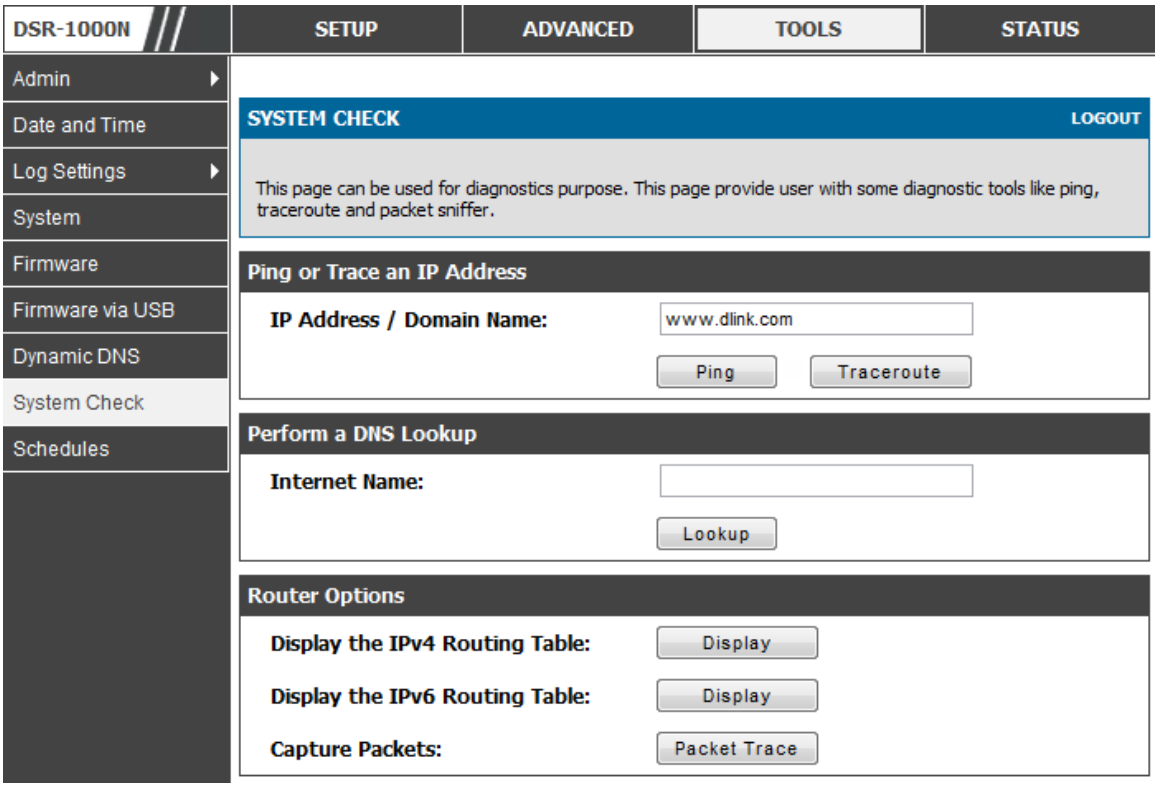



# 9.8 Using Diagnostic Tools

### *Tools > System Check*

The router has built in tools to allow an administrator to evaluate the communication status and overall network health.

**Figure 99: Router diagnostics tools available in the GUI**



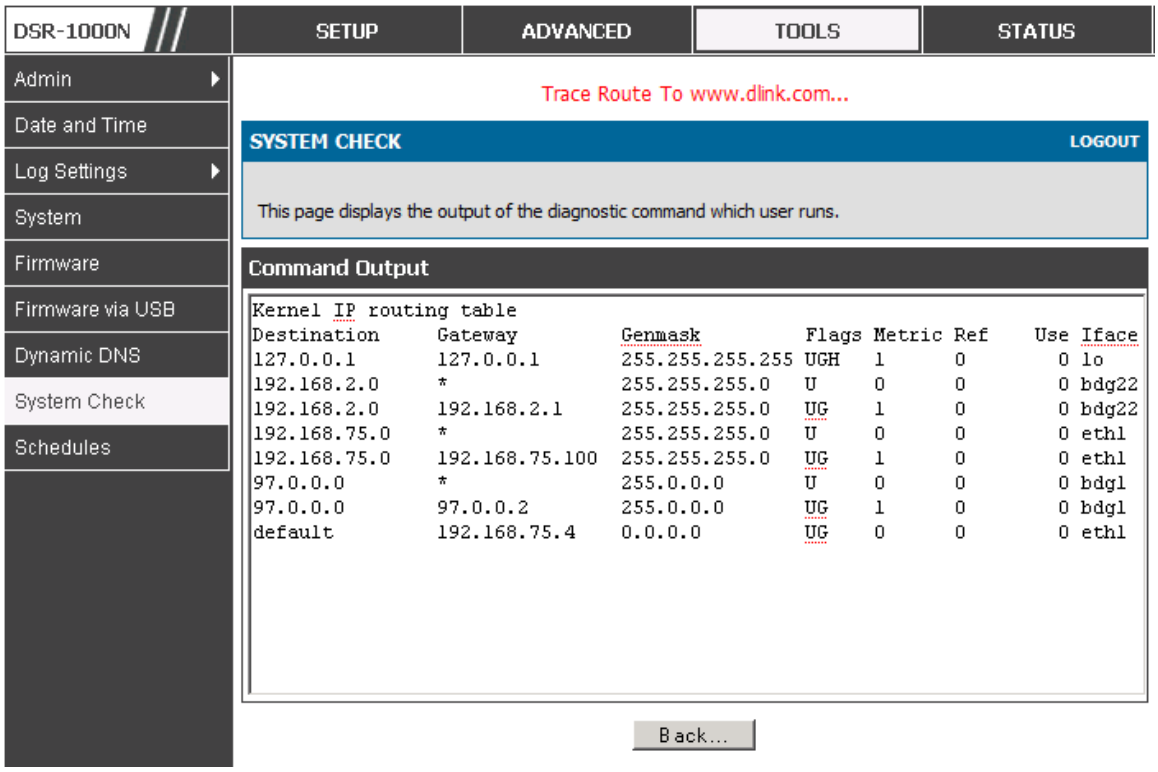

## 9.8.1 Ping

This utility can be used to test connectivity between this router and another device on the network connected to this router. Enter an IP address and click PING. The command output will appear indicating the ICMP echo request status.

## 9.8.2 Trace Route

This utility will display all the routers present between the destination IP address and this router. Up to 30 “hops” (intermediate routers) between this router and the destination will be displayed.

**Figure 100: Sample trace route output**




## 9.8.3 DNS Lookup

To retrieve the IP address of a Web, FTP, Mail or any other server on the Internet, type the Internet Name in the text box and click Lookup. If the host or domain entry exists, you will see a response with the IP address. A message stating "Unknown Host" indicates that the specified Internet Name does not exist.

This feature assumes there is internet access available on the WAN link(s).

## 9.8.4 Router Options

The static and dynamic routes configured on this router can be shown by clicking Display for the corresponding routing table. Clicking the Packet Trace button will allow the router to capture and display traffic through the DSR between the LAN and WAN interface as well. This information is often very useful in debugging traffic and routing issues.

# Chapter 10. Router Status and Statistics

## 10.1 System Overview

The Status page allows you to get a detailed overview of the system configuration. The settings for the wired and wireless interfaces are displayed in the DSR Status page, and then the resulting hardware resource and router usage details are summarized on the router's Dashboard.

### 10.1.1 Device Status

***Status > Device Info > Device Status***

The DSR Status page gives a summary of the router configuration settings configured in the Setup and Advanced menus. The static hardware serial number and current firmware version are presented in the General section. The WAN and LAN interface information shown on this page are based on the administrator configuration parameters. The radio band and channel settings are presented below along with all configured and active APs that are enabled on this router.

**Figure 101: Device Status display**

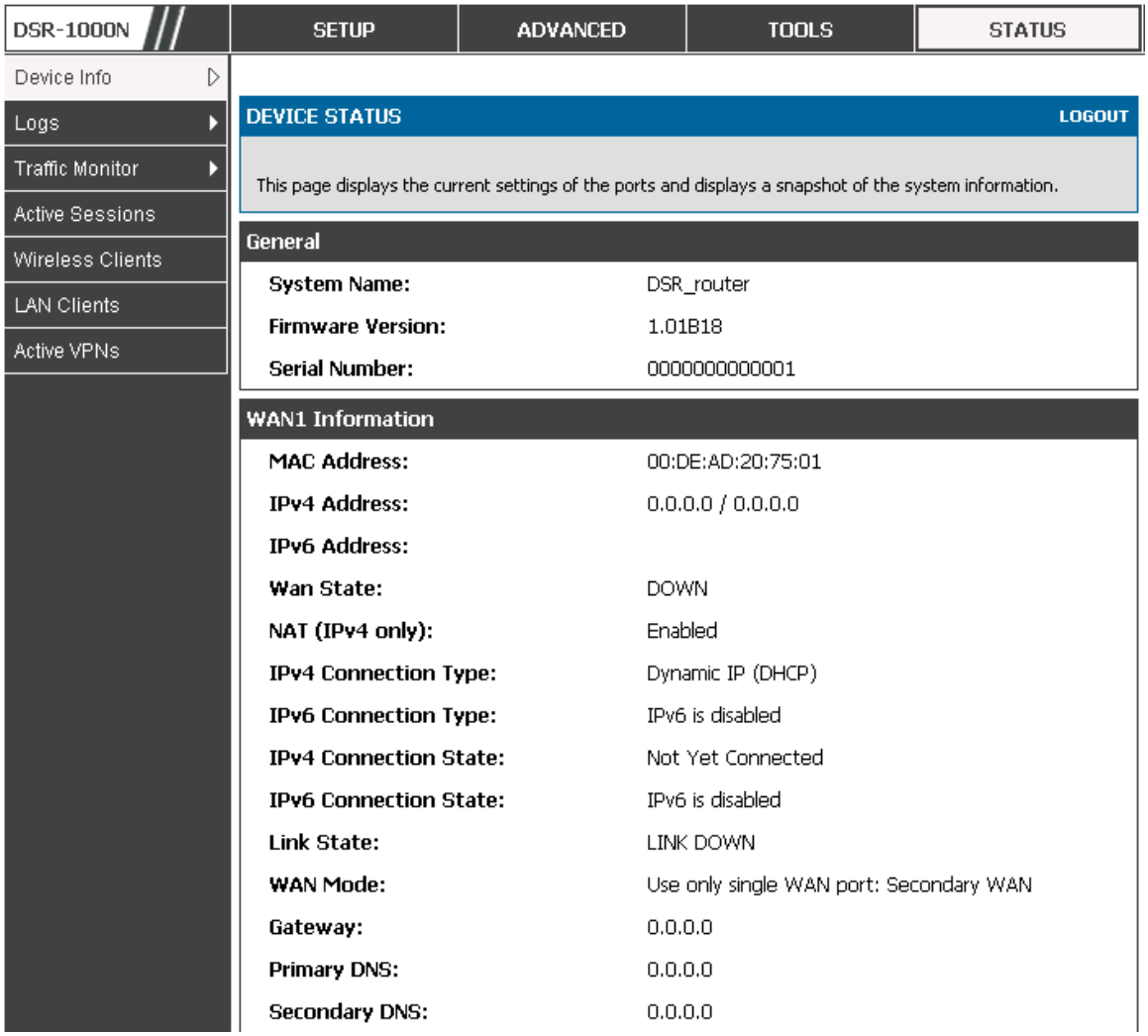
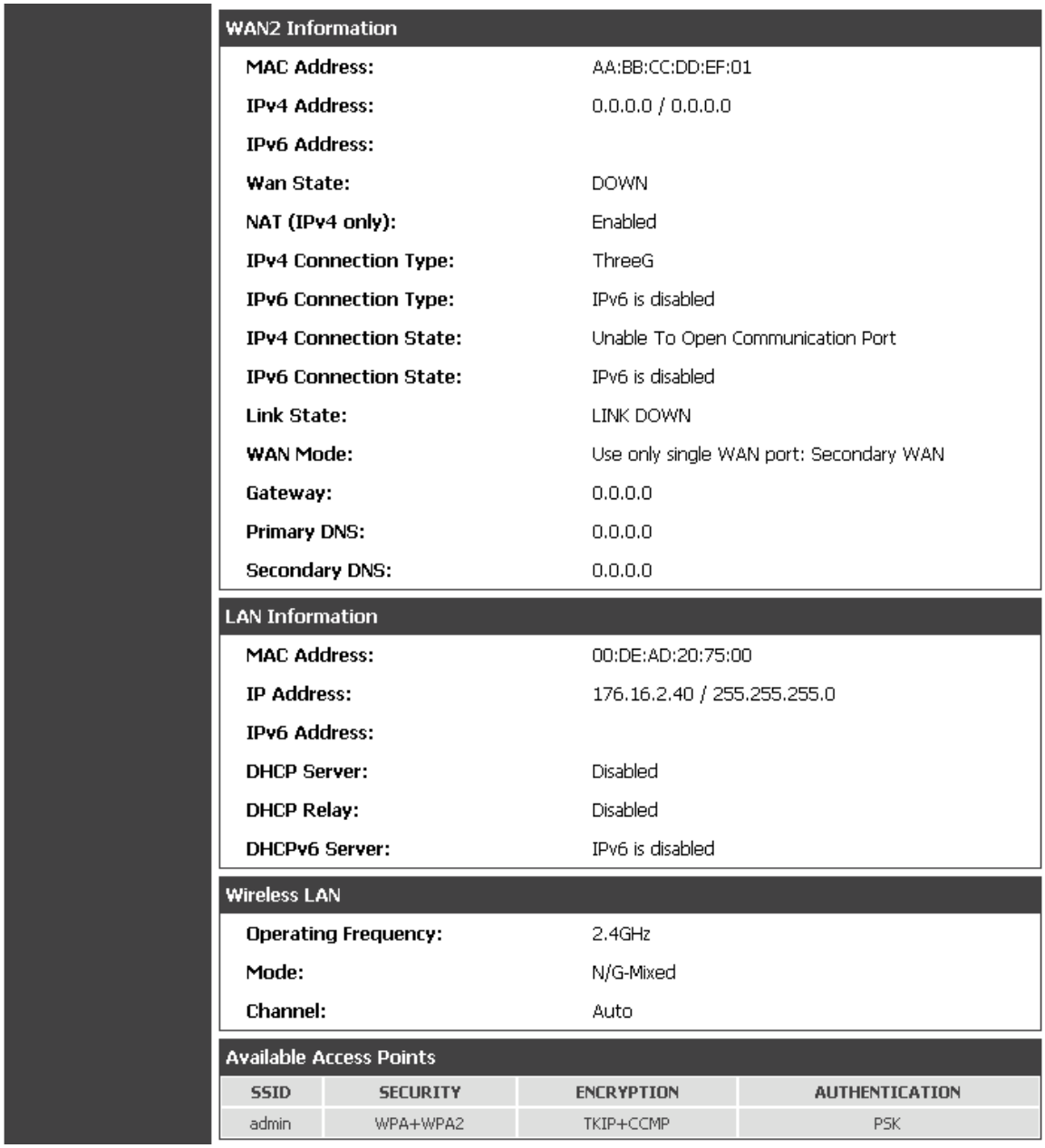


**Figure 102: Device Status display (continued)**



WAN2 Information

| | |
|---|---|
| MAC Address: | AA:BB:CC:DD:EF:01 |
| IPv4 Address: | 0.0.0.0 / 0.0.0.0 |
| IPv6 Address: | |
| Wan State: | DOWN |
| NAT (IPv4 only): | Enabled |
| IPv4 Connection Type: | ThreeG |
| IPv6 Connection Type: | IPv6 is disabled |
| IPv4 Connection State: | Unable To Open Communication Port |
| IPv6 Connection State: | IPv6 is disabled |
| Link State: | LINK DOWN |
| WAN Mode: | Use only single WAN port: Secondary WAN |
| Gateway: | 0.0.0.0 |
| Primary DNS: | 0.0.0.0 |
| Secondary DNS: | 0.0.0.0 |

LAN Information

| | |
|---|---|
| MAC Address: | 00:DE:AD:20:75:00 |
| IP Address: | 176.16.2.40 / 255.255.255.0 |
| IPv6 Address: | |
| DHCP Server: | Disabled |
| DHCP Relay: | Disabled |
| DHCPv6 Server: | IPv6 is disabled |

Wireless LAN

| | |
|---|---|
| Operating Frequency: | 2.4GHz |
| Mode: | N/G-Mixed |
| Channel: | Auto |

Available Access Points

| SSID | SECURITY | ENCRYPTION | AUTHENTICATION |
|---|---|---|---|
| admin | WPA+WPA2 | TKIP+CCMP | PSK |

## 10.1.2 Resource Utilization

***Status > Device Info > Dashboard***

The Dashboard page presents hardware and usage statistics. The CPU and Memory utilization is a function of the available hardware and current configuration and traffic through the router. Interface statistics for the wired connections (LAN, WAN1, WAN2/DMZ, VLANs) provide indication of packets through and packets dropped by the interface. Click refresh to have this page retrieve the most current statistics.

**Figure 103: Resource Utilization statistics**

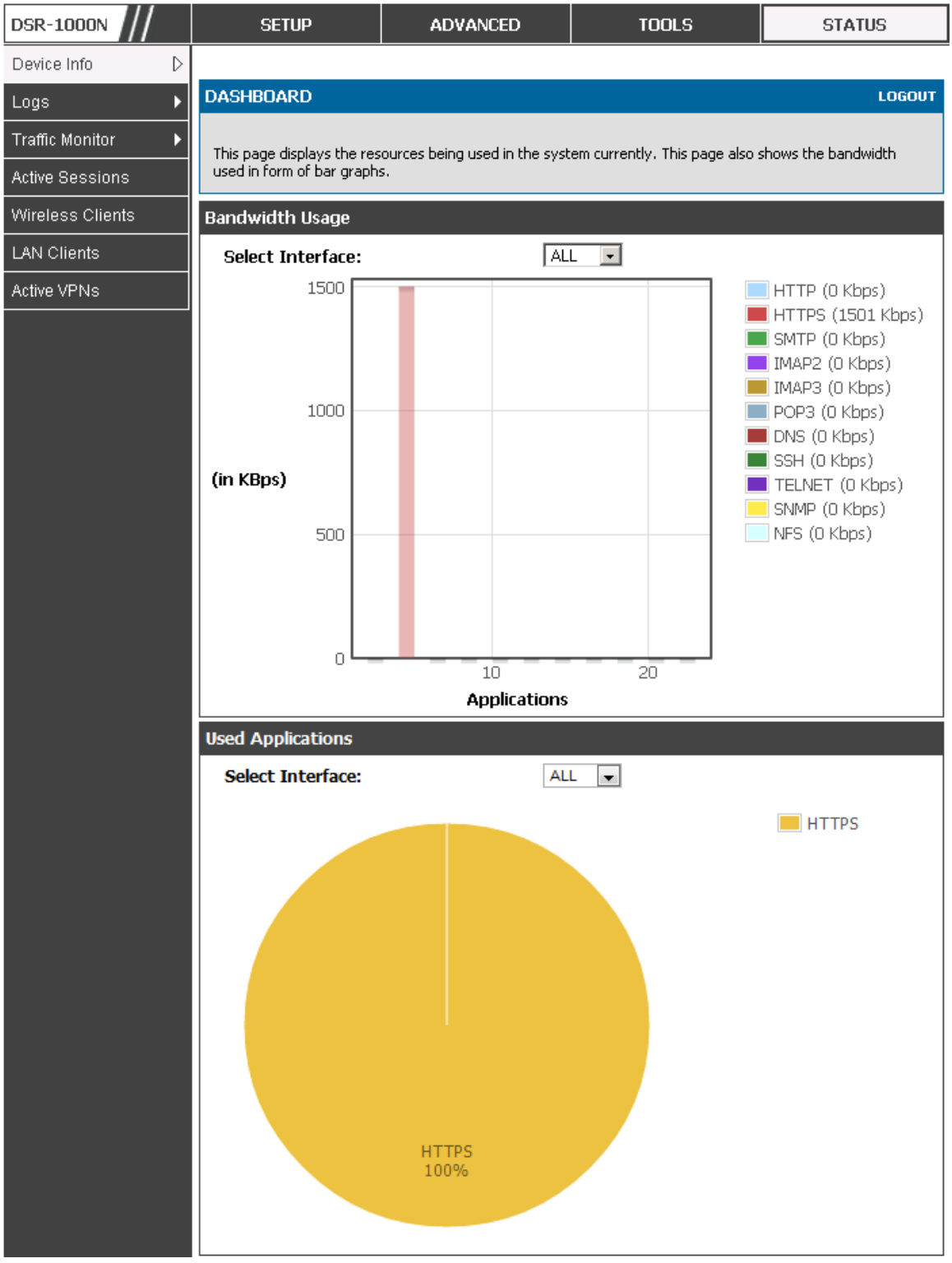
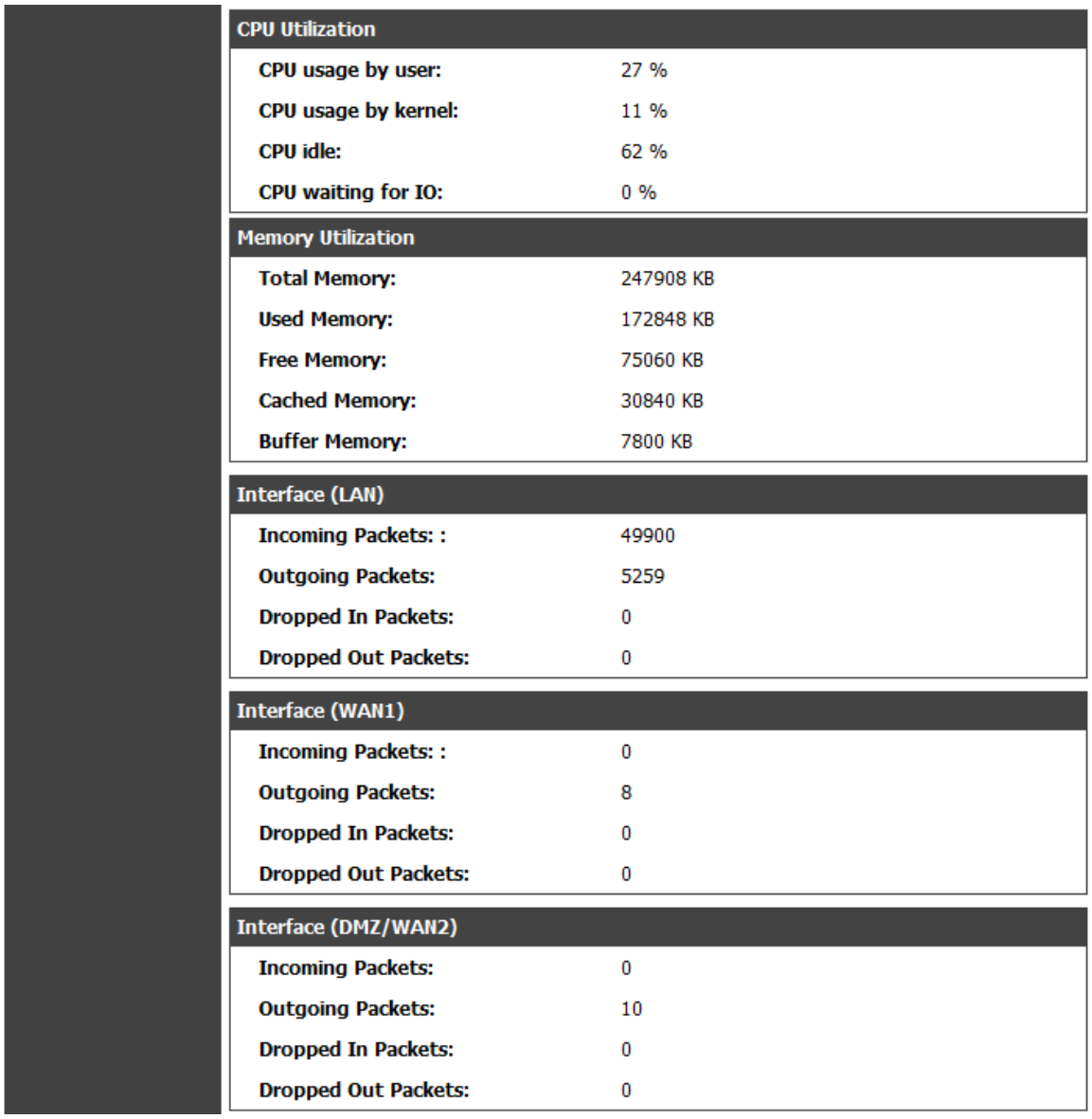


**Figure 104: Resource Utilization data (continued)**



| CPU Utilization | |
|---|---|
| CPU usage by user: | 27 % |
| CPU usage by kernel: | 11 % |
| CPU idle: | 62 % |
| CPU waiting for IO: | 0 % |

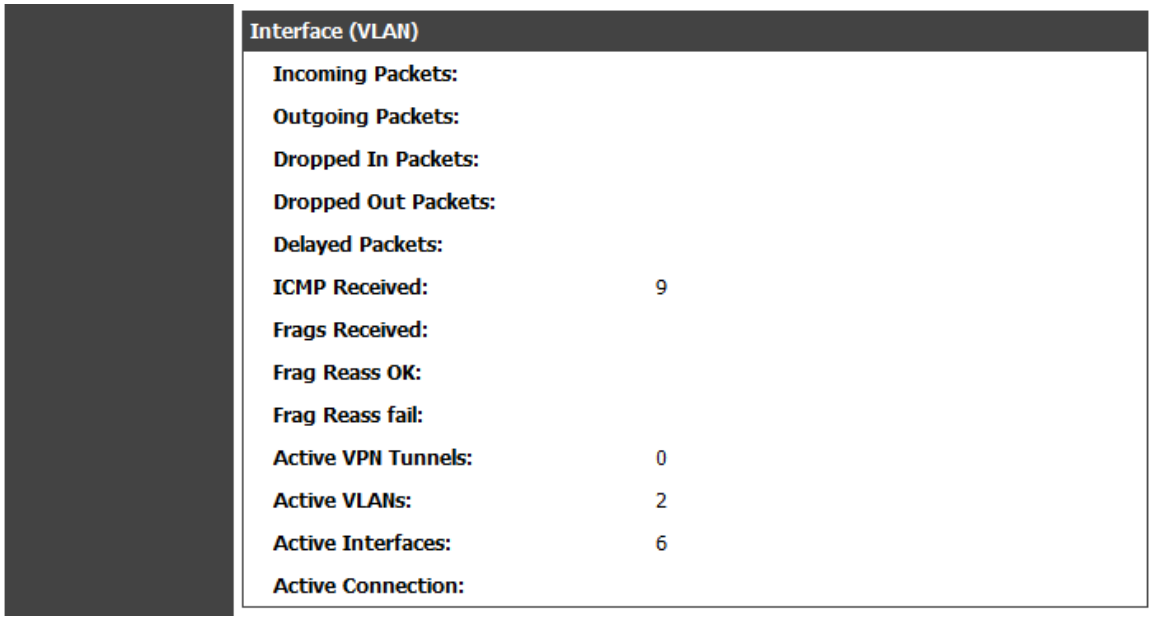
| Memory Utilization | |
|---|---|
| Total Memory: | 247908 KB |
| Used Memory: | 172848 KB |
| Free Memory: | 75060 KB |
| Cached Memory: | 30840 KB |
| Buffer Memory: | 7800 KB |

| Interface (LAN) | |
|---|---|
| Incoming Packets: : | 49900 |
| Outgoing Packets: | 5259 |
| Dropped In Packets: | 0 |
| Dropped Out Packets: | 0 |

| Interface (WAN1) | |
|---|---|
| Incoming Packets: : | 0 |
| Outgoing Packets: | 8 |
| Dropped In Packets: | 0 |
| Dropped Out Packets: | 0 |

| Interface (DMZ/WAN2) | |
|---|---|
| Incoming Packets: | 0 |
| Outgoing Packets: | 10 |
| Dropped In Packets: | 0 |
| Dropped Out Packets: | 0 |

**Figure 105: Resource Utilization data (continued)**




# 10.2 Traffic Statistics

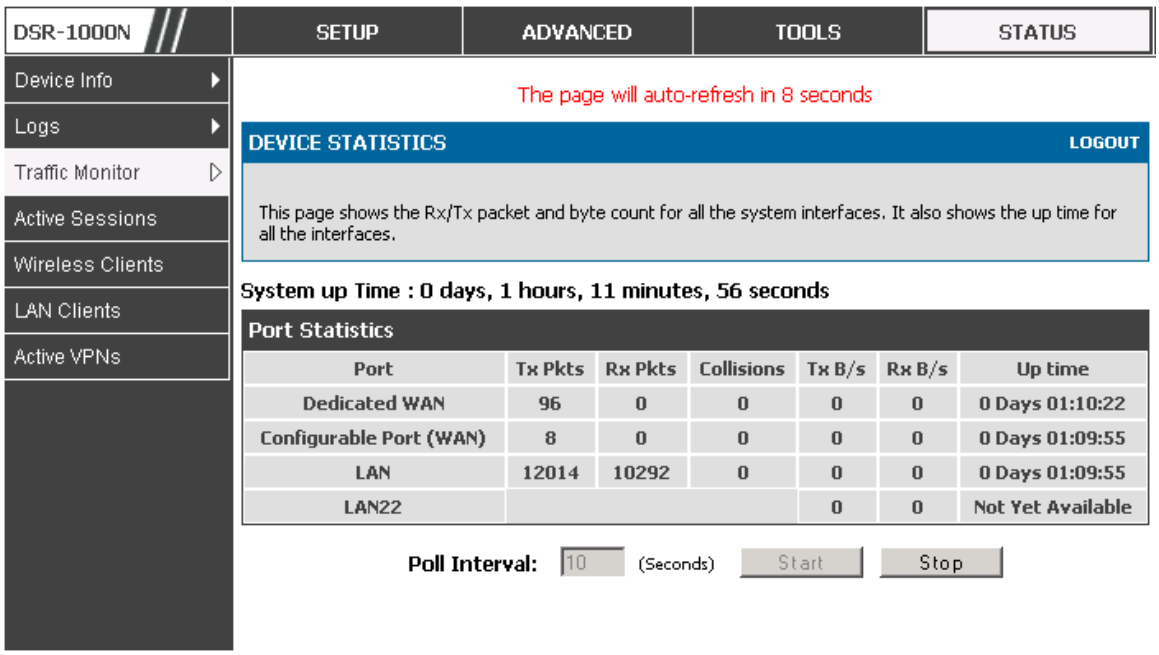
## 10.2.1 Wired Port Statistics

***Status > Traffic Monitor > Device Statistics***

Detailed transmit and receive statistics for each physical port are presented here. Each interface (WAN1, WAN2/DMZ, LAN, and VLANs) have port specific packet level information provided for review. Transmitted/received packets, port collisions, and the cumulating bytes/sec for transmit/receive directions are provided for each interface along with the port up time. If you suspect issues with any of the wired ports, this table will help diagnose uptime or transmit level issues with the port.

The statistics table has auto-refresh control which allows display of the most current port level data at each page refresh. The default auto-refresh for this page is 10 seconds.

**Figure 106: Physical port statistics**



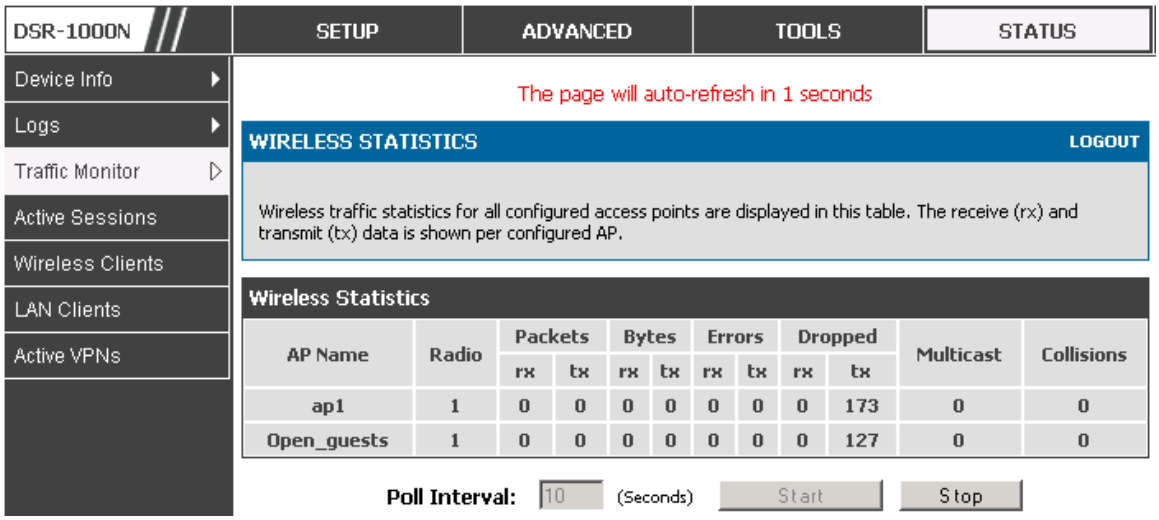

# 10.2.2 Wireless Statistics

***Status > Traffic Monitor > Wireless Statistics***

The Wireless Statistics tab displays the incrementing traffic statistics for each enabled access point. This page will give a snapshot of how much traffic is being transmitted over each wireless link. If you suspect that a radio or VAP may be down, the details on this page would confirm if traffic is being sent and received through the VAP.

The clients connected to a particular AP can be viewed by using the Status Button on the list of APs in the ***Setup > Wireless > Access Points*** page. Traffic statistics are shown for that individual AP, as compared to the summary stats for each AP on this Statistics page. The poll interval (the refresh rate for the statistics) can be modified to view more frequent traffic and collision statistics.

**Figure 107: AP specific statistics**



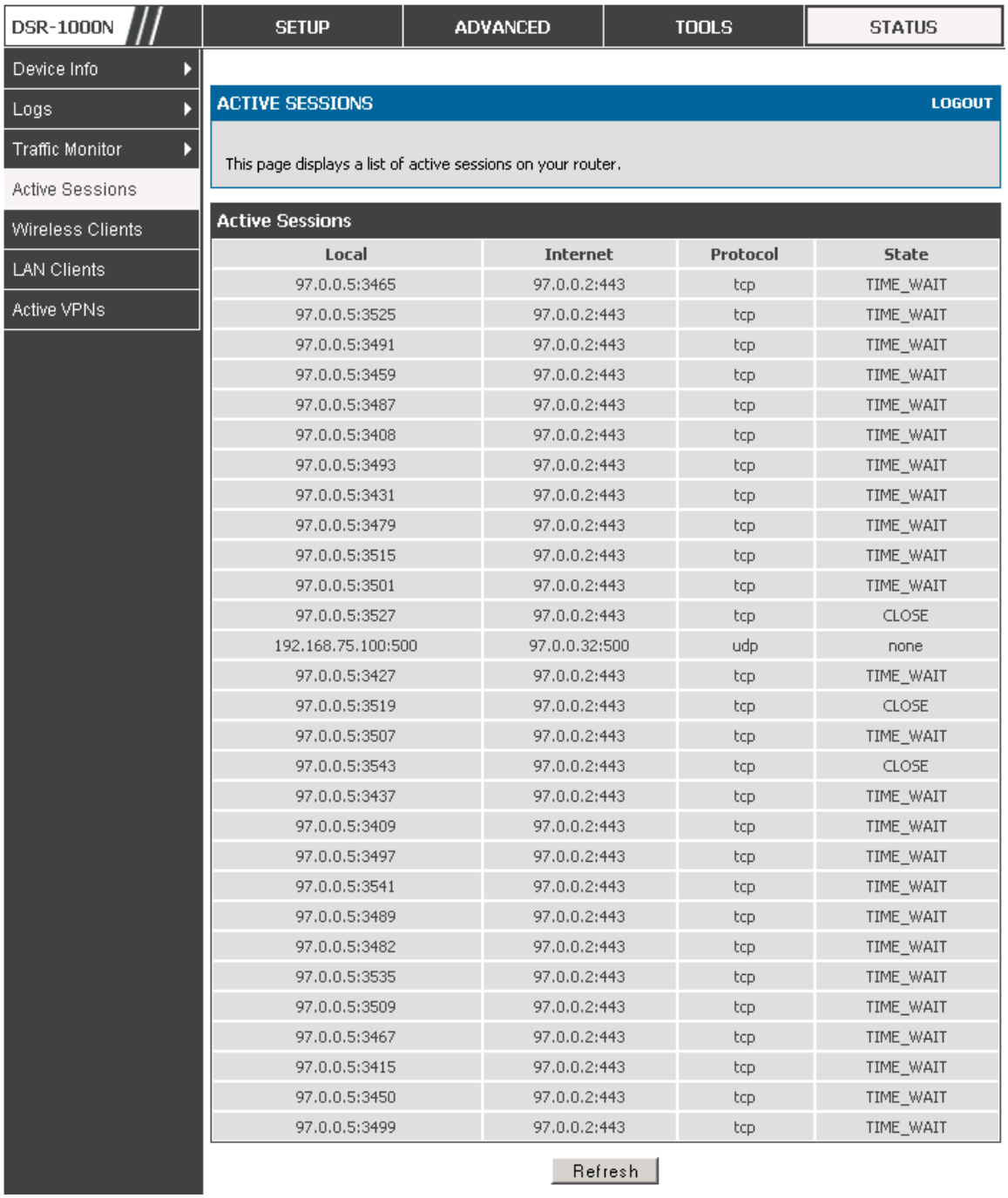

# 10.3 Active Connections

## 10.3.1 Sessions through the Router

***Status > Active Sessions***

This table lists the active internet sessions through the router's firewall. The session's protocol, state, local and remote IP addresses are shown.

**Figure 108: List of current Active Firewall Sessions**



# 10.3.2 Wireless Clients

### *Status > Wireless Clients*

The clients connected to a particular AP can be viewed on this page. Connected clients are sorted by the MAC address and indicate the security parameters used by the wireless link, as well as the time connected to the corresponding AP.

The statistics table has auto-refresh control which allows display of the most current port level data at each page refresh. The default auto-refresh for this page is 10 seconds.

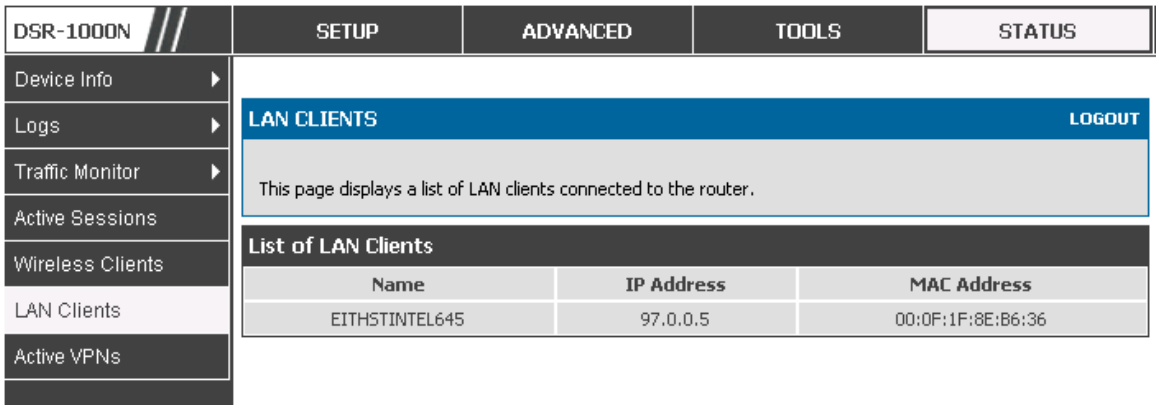
**Figure 109: List of connected 802.11 clients per AP**


# 10.3.3 LAN Clients

### *Status > LAN Clients*

The LAN clients to the router are identified by an ARP scan through the LAN switch. The NetBios name (if available), IP address and MAC address of discovered LAN hosts are displayed.

**Figure 110: List of LAN hosts**




# 10.3.4 Active VPN Tunnels

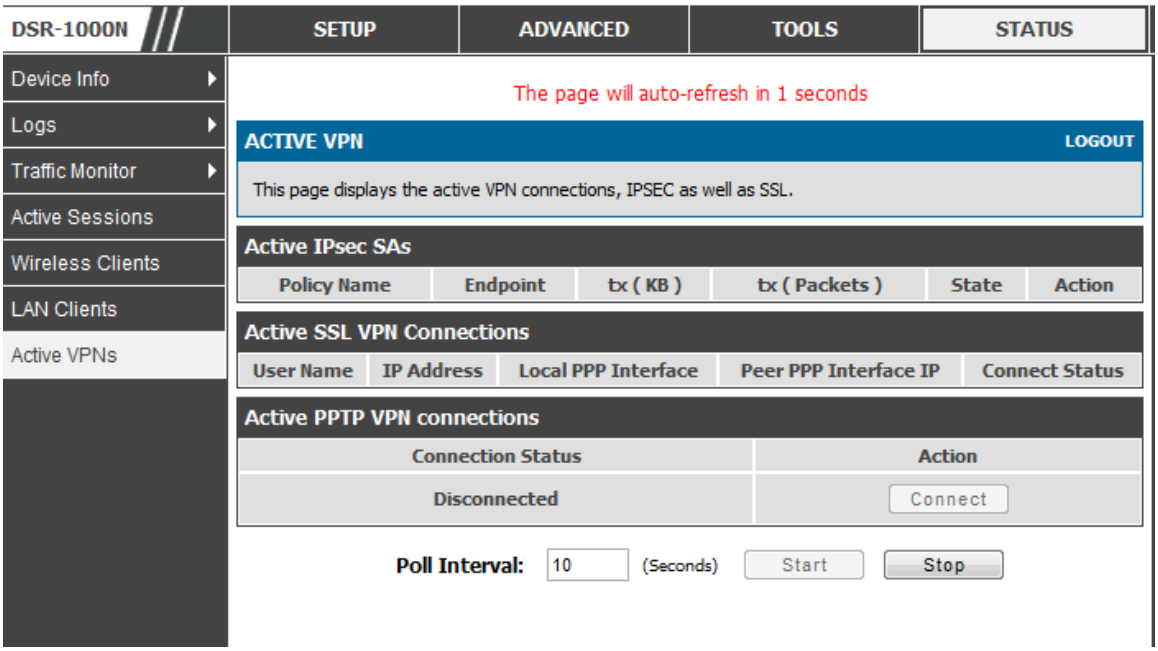
### *Status > Active VPNs*

You can view and change the status (connect or drop) of the router's IPsec security associations. Here, the active IPsec SAs (security associations) are listed along with the traffic details and tunnel state. The traffic is a cumulative measure of transmitted/received packets since the tunnel was established.

If a VPN policy state is "IPsec SA Not Established", it can be enabled by clicking the Connect button of the corresponding policy. The Active IPsec SAs table displays a list of active IPsec SAs. Table fields are as follows.

| Field | Description |
|---|---|
| Policy Name | IKE or VPN policy associated with this SA. |
| Endpoint | IP address of the remote VPN gateway or client. |
| Tx (KB) | Kilobytes of data transmitted over this SA. |
| Tx (Packets) | Number of IP packets transmitted over this SA. |
| State | Status of the SA for IKE policies: Not Connected or IPsec SA Established. |

**Figure 111: List of current Active VPN Sessions**




All active SSL VPN connections, both for VPN tunnel and VPN Port forwarding, are displayed on this page as well. Table fields are as follows.

| Field | Description |
|---|---|
| User Name | The SSL VPN user that has an active tunnel or port forwarding session to this router. |
| IP Address | IP address of the remote VPN client. |
| Local PPP Interface | The interface (WAN1 or WAN2) through which the session is active. |
| Peer PPP Interface IP | The assigned IP address of the virtual network adapter. |
| Connect Status | Status of the SSL connection between this router and the remote VPN client: Not Connected or Connected. |

# Chapter 11. Trouble Shooting

## 11.1 Internet connection

**Symptom:** You cannot access the router's web-configuration interface from a PC on your LAN.

**Recommended action:**

1. Check the Ethernet connection between the PC and the router.
2. Ensure that your PC's IP address is on the same subnet as the router. If you are using the recommended addressing scheme, your PC's address should be in the range 192.168.10.2 to 192.168.10.254.
3. Check your PC's IP address. If the PC cannot reach a DHCP server, some versions of Windows and Mac OS generate and assign an IP address. These auto-generated addresses are in the range 169.254.x.x. If your IP address is in this range, check the connection from the PC to the firewall and reboot your PC.
4. If your router's IP address has changed and you don't know what it is, reset the router configuration to factory defaults (this sets the firewall's IP address to 192.168.10.1).
5. If you do not want to reset to factory default settings and lose your configuration, reboot the router and use a packet sniffer (such as Ethereal™) to capture packets sent during the reboot. Look at the Address Resolution Protocol (ARP) packets to locate the router's LAN interface address.
6. Launch your browser and ensure that Java, JavaScript, or ActiveX is enabled. If you are using Internet Explorer, click Refresh to ensure that the Java applet is loaded. Close the browser and launch it again.
7. Ensure that you are using the correct login information. The factory default login name is admin and the password is password. Ensure that CAPS LOCK is off when entering this information.

**Symptom:** Router does not save configuration changes.

**Recommended action:**

1. When entering configuration settings, click Apply before moving to another menu or tab; otherwise your changes are lost.
2. Click Refresh or Reload in the browser. Your changes may have been made, but the browser may be caching the old configuration.

**Symptom:** Router cannot access the Internet.

**Possible cause:** If you use dynamic IP addresses, your router may not have requested an IP address from the ISP.

**Recommended action:**

1. Launch your browser and go to an external site such as www.google.com.
2. Access the firewall's configuration main menu at http://192.168.10.1.
3. Select ***Monitoring > Router Status***.
4. Ensure that an IP address is shown for the WAN port. If 0.0.0.0 is shown, your firewall has not obtained an IP address from your ISP. See the next symptom.

**Symptom:** Router cannot obtain an IP address from the ISP.

**Recommended action:**

1. Turn off power to the cable or DSL modem.
2. Turn off the router.
3. Wait 5 minutes, and then reapply power to the cable or DSL modem.
4. When the modem LEDs indicate that it has resynchronized with the ISP, reapply power to the router. If the router still cannot obtain an ISP address, see the next symptom.

**Symptom:** Router still cannot obtain an IP address from the ISP.

**Recommended action:**

1. Ask your ISP if it requires a login program — PPP over Ethernet (PPPoE) or some other type of login.
2. If yes, verify that your configured login name and password are correct.
3. Ask your ISP if it checks for your PC's hostname.
4. If yes, select ***Network Configuration > WAN Settings > Ethernet ISP Settings*** and set the account name to the PC hostname of your ISP account.
5. Ask your ISP if it allows only one Ethernet MAC address to connect to the Internet, and therefore checks for your PC's MAC address.
6. If yes, inform your ISP that you have bought a new network device, and ask them to use the firewall's MAC address.
7. Alternatively, select ***Network Configuration > WAN Settings > Ethernet ISP Settings*** and configure your router to spoof your PC's MAC address.

**Symptom:** Router can obtain an IP address, but PC is unable to load Internet pages.

**Recommended action:**

1. Ask your ISP for the addresses of its designated Domain Name System (DNS) servers. Configure your PC to recognize those addresses. For details, see your operating system documentation.
2. On your PC, configure the router to be its TCP/IP gateway.

# 11.2 Date and time

**Symptom:** Date shown is January 1, 1970.

**Possible cause:** The router has not yet successfully reached a network time server (NTS).

**Recommended action:**

1. If you have just configured the router, wait at least 5 minutes, select ***Administration > Time Zone***, and recheck the date and time.
2. Verify your Internet access settings.

**Symptom:** Time is off by one hour.

**Possible cause:** The router does not automatically adjust for Daylight Savings Time.

**Recommended action:**

1. Select ***Administration > Time Zone*** and view the current date and time settings.
2. Click to check or uncheck "Automatically adjust for Daylight Savings Time", then click Apply.

# 11.3 Pinging to Test LAN Connectivity

Most TCP/IP terminal devices and firewalls contain a ping utility that sends an ICMP echo-request packet to the designated device. The DSR responds with an echo reply. Troubleshooting a TCP/IP network is made very easy by using the ping utility in your PC or workstation.

## 11.3.1 Testing the LAN path from your PC to your router

1. From the PC's Windows toolbar, select Start > Run.
2. Type ping <IP_address> where <IP_address> is the router's IP address. Example: ping 192.168.10.1.
3. Click OK.

4. Observe the display:

    - If the path is working, you see this message sequence:

Pinging <IP address> with 32 bytes of data

Reply from <IP address>: bytes=32 time=NN ms TTL=xxx

    - If the path is not working, you see this message sequence:

Pinging <IP address> with 32 bytes of data

Request timed out

5. If the path is not working, Test the physical connections between PC and router

    - If the LAN port LED is off, go to the "LED displays" section on page B-1 and follow instructions for "LAN or Internet port LEDs are not lit."
    - Verify that the corresponding link LEDs are lit for your network interface card and for any hub ports that are connected to your workstation and firewall.

6. If the path is still not up, test the network configuration:

    - Verify that the Ethernet card driver software and TCP/IP software are installed and configured on the PC.
    - Verify that the IP address for the router and PC are correct and on the same subnet.

## 11.3.2 Testing the LAN path from your PC to a remote device

1. From the PC's Windows toolbar, select Start > Run.
2. Type ping -n 10 <IP_address> where -n 10 specifies a maximum of 10 tries and <IP address> is the IP address of a remote device such as your ISP's DNS server. Example: ping -n 10 10.1.1.1.
3. Click OK and then observe the display (see the previous procedure).
4. If the path is not working, do the following:

    - Check that the PC has the IP address of your firewall listed as the default gateway. (If the IP configuration of your PC is assigned by DHCP, this information is not visible in your PC's Network Control Panel.)

- Verify that the network (subnet) address of your PC is different from the network address of the remote device.
- Verify that the cable or DSL modem is connected and functioning.
- Ask your ISP if it assigned a hostname to your PC.

If yes, select ***Network Configuration > WAN Settings > Ethernet ISP Settings*** and enter that hostname as the ISP account name.

- Ask your ISP if it rejects the Ethernet MAC addresses of all but one of your PCs.

Many broadband ISPs restrict access by allowing traffic from the MAC address of only your broadband modem; but some ISPs additionally restrict access to the MAC address of just a single PC connected to that modem. If this is the case, configure your firewall to clone or spoof the MAC address from the authorized PC.

# 11.4 Restoring factory-default configuration settings

To restore factory-default configuration settings, do either of the following:

1. Do you know the account password and IP address?

   - If yes, select ***Administration > Settings Backup & Upgrade*** and click default.
   - If no, do the following:

   On the rear panel of the router, press and hold the Reset button about 10 seconds, until the test LED lights and then blinks.

   Release the button and wait for the router to reboot.

2. If the router does not restart automatically; manually restart it to make the default settings effective.

3. After a restore to factory defaults —whether initiated from the configuration interface or the Reset button — the following settings apply:

   - LAN IP address: 192.168.10.1
   - Username: admin
   - Password: admin
   - DHCP server on LAN: enabled
   - WAN port configuration: Get configuration via DHCP

# Chapter 12. Credits

Microsoft, Windows are registered trademarks of Microsoft Corp.

Linux is a registered trademark of Linus Torvalds.

UNIX is a registered trademark of The Open Group.

# Appendix A. Glossary

| | |
|---|---|
| **ARP** | Address Resolution Protocol. Broadcast protocol for mapping IP addresses to MAC addresses. |
| **CHAP** | Challenge-Handshake Authentication Protocol. Protocol for authenticating users to an ISP. |
| **DDNS** | Dynamic DNS. System for updating domain names in real time. Allows a domain name to be assigned to a device with a dynamic IP address. |
| **DHCP** | Dynamic Host Configuration Protocol. Protocol for allocating IP addresses dynamically so that addresses can be reused when hosts no longer need them. |
| **DNS** | Domain Name System. Mechanism for translating H.323 IDs, URLs, or e-mail IDs into IP addresses. Also used to assist in locating remote gatekeepers and to map IP addresses to hostnames of administrative domains. |
| **FQDN** | Fully qualified domain name. Complete domain name, including the host portion. Example: serverA.companyA.com. |
| **FTP** | File Transfer Protocol. Protocol for transferring files between network nodes. |
| **HTTP** | Hypertext Transfer Protocol. Protocol used by web browsers and web servers to transfer files. |
| **IKE** | Internet Key Exchange. Mode for securely exchanging encryption keys in ISAKMP as part of building a VPN tunnel. |
| **IPsec** | IP security. Suite of protocols for securing VPN tunnels by authenticating or encrypting IP packets in a data stream. IPsec operates in either transport mode (encrypts payload but not packet headers) or tunnel mode (encrypts both payload and packet headers). |
| **ISAKMP** | Internet Key Exchange Security Protocol. Protocol for establishing security associations and cryptographic keys on the Internet. |
| **ISP** | Internet service provider. |
| **MAC Address** | Media-access-control address. Unique physical-address identifier attached to a network adapter. |
| **MTU** | Maximum transmission unit. Size, in bytes, of the largest packet that can be passed on. The MTU for Ethernet is a 1500-byte packet. |
| **NAT** | Network Address Translation. Process of rewriting IP addresses as a packet passes through a router or firewall. NAT enables multiple hosts on a LAN to access the Internet using the single public IP address of the LAN's gateway router. |
| **NetBIOS** | Microsoft Windows protocol for file sharing, printer sharing, messaging, authentication, and name resolution. |
| **NTP** | Network Time Protocol. Protocol for synchronizing a router to a single clock on the network, known as the clock master. |
| **PAP** | Password Authentication Protocol. Protocol for authenticating users to a remote access server or ISP. |

| | |
|---|---|
| **PPPoE** | Point-to-Point Protocol over Ethernet. Protocol for connecting a network of hosts to an ISP without the ISP having to manage the allocation of IP addresses. |
| **PPTP** | Point-to-Point Tunneling Protocol. Protocol for creation of VPNs for the secure transfer of data from remote clients to private servers over the Internet. |
| **RADIUS** | Remote Authentication Dial-In User Service. Protocol for remote user authentication and accounting. Provides centralized management of usernames and passwords. |
| **RSA** | Rivest-Shamir-Adleman. Public key encryption algorithm. |
| **TCP** | Transmission Control Protocol. Protocol for transmitting data over the Internet with guaranteed reliability and in-order delivery. |
| **UDP** | User Data Protocol. Protocol for transmitting data over the Internet quickly but with no guarantee of reliability or in-order delivery. |
| **VPN** | Virtual private network. Network that enables IP traffic to travel securely over a public TCP/IP network by encrypting all traffic from one network to another. Uses tunneling to encrypt all information at the IP level. |
| **WINS** | Windows Internet Name Service. Service for name resolution. Allows clients on different IP subnets to dynamically resolve addresses, register themselves, and browse the network without sending broadcasts. |
| **XAUTH** | IKE Extended Authentication. Method, based on the IKE protocol, for authenticating not just devices (which IKE authenticates) but also users. User authentication is performed after device authentication and before IPsec negotiation. |

# Appendix B. Factory Default Settings

| Feature | Description | Default Setting |
|---|---|---|
| **Device login** | User login URL | http://192.168.10.1 |
| | User name (case sensitive) | admin |
| | Login password (case sensitive) | admin |
| **Internet Connection** | WAN MAC address | Use default address |
| | WAN MTU size | 1500 |
| | Port speed | Autosense |
| **Local area network (LAN)** | IP address | 192.168.10.1 |
| | IPv4 subnet mask | 255.255.255.0 |
| | RIP direction | None |
| | RIP version | Disabled |
| | RIP authentication | Disabled |
| | DHCP server | Enabled |
| | DHCP starting IP address | 192.168.10.2 |
| | DHCP ending IP address | 192.168.10.100 |
| | Time zone | GMT |
| | Time zone adjusted for Daylight Saving Time | Disabled |
| | SNMP | Disabled |
| | Remote management | Disabled |
| **Firewall** | Inbound communications from the Internet | Disabled (except traffic on port 80, the HTTP port) |
| | Outbound communications to the Internet | Enabled (all) |
| | Source MAC filtering | Disabled |
| | Stealth mode | Enabled |

# Appendix C. Standard Services Available for Port Forwarding & Firewall Configuration

ANY
AIM
BGP
BOOTP_CLIENT
BOOTP_SERVER
CU-SEEME:UDP
CU-SEEME:TCP
DNS:UDP
DNS:TCP
FINGER
FTP
HTTP
HTTPS
ICMP-TYPE-3
ICMP-TYPE-4
ICMP-TYPE-5
ICMP-TYPE-6
ICMP-TYPE-7
ICMP-TYPE-8
ICMP-TYPE-9
ICMP-TYPE-10
ICMP-TYPE-11
ICMP-TYPE-13
ICQ
IMAP2
IMAP3
IRC
NEWS
NFS
NNTP
PING
POP3
PPTP
RCMD
REAL-AUDIO
REXEC
RLOGIN
RTELNET
RTSP:TCP
RTSP:UDP
SFTP
SMTP
SNMP:TCP
SNMP:UDP
SNMP-TRAPS:TCP
SNMP-TRAPS:UDP
SQL-NET
SSH:TCP
SSH:UDP
STRMWORKS
TACACS
TELNET
TFTP
VDOLIVE

# Appendix D. Log Output Reference

### Facility: System (Networking)

| Log Message | Severity | Log Message | Severity |
|---|---|---|---|
| DBUpdate event: Table: %s opCode:%d rowId:%d | DEBUG | BridgeConfig: too few arguments to command %s | ERROR |
| networkIntable.txt not found | DEBUG | BridgeConfig: too few arguments to command %s | ERROR |
| sqlite3QueryResGet failed | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| Interface is already deleted in bridge | DEBUG | ddnsDisable failed | ERROR |
| removing %s from bridge %s... %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| adding %s to bridge %s... %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| stopping bridge... | DEBUG | ddnsDisable failed | ERROR |
| stopping bridge... | DEBUG | failed to call ddns enable | ERROR |
| stopping bridge... | DEBUG | ddnsDisable failed | ERROR |
| %s:DBUpdate event: Table: %s opCode:%d rowId:%d | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| Wan is not up | DEBUG | Error in executing DB update handler | ERROR |
| %s:DBUpdate event: Table: %s opCode:%d rowId:%d | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| doDNS:failed | DEBUG | Illegal invocation of ddnsView (%s) | ERROR |
| doDNS:failed | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| doDNS:Result = FAILED | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| doDNS:Result SUCCESS | DEBUG | ddns: SQL error: %s | ERROR |
| Write Old Entry: %s %s %s: to %s | DEBUG | Illegal operation interface got deleted | ERROR |
| Write New Entry: %s %s #%s : to %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| Write Old Entry: %s %s %s: to %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| Write New Entry: %s %s #%s : to %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| ifStaticMgmtDBUpdateHandler: returning with " | DEBUG | ddnsDisable failed | ERROR |
| nimfLinkStatusGet: buffer: \ | DEBUG | ddns: SQL error: %s | ERROR |
| nimfLinkStatusGetErr: returning with status: %d | DEBUG | Failed to call ddns enable | ERROR |
| nimfAdvOptSetWrap: current Mac Option: %d | DEBUG | ddns: SQL error: %s | ERROR |
| nimfAdvOptSetWrap: current Port Speed Option: %d | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| nimfAdvOptSetWrap: current Mtu Option: %d | DEBUG | Failed to call ddns enable | ERROR |
| nimfAdvOptSetWrap: looks like we are reconnecting. " | DEBUG | ddns: SQL error: %s | ERROR |
| nimfAdvOptSetWrap: Mtu Size: %d | DEBUG | ddnsDisable failed | ERROR |
| nimfAdvOptSetWrap: NIMF table is %s | DEBUG | ddns: SQL error: %s | ERROR |
| nimfAdvOptSetWrap:WAN_MODE TRIGGER | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| nimfAdvOptSetWrap: MTU: %d | DEBUG | Failed to call ddns enable | ERROR |
| nimfAdvOptSetWrap: MacAddress: %s | DEBUG | ddns: SQL error: %s | ERROR |
| nimfAdvOptSetWrap: old Mtu Flag: %d | DEBUG | ddnsDisable failed | ERROR |

| | | | |
|---|---|---|---|
| nimfAdvOptSetWrap: user has changed MTU option | DEBUG | ddns: SQL error: %s | ERROR |
| nimfAdvOptSetWrap: MTU: %d | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| nimfAdvOptSetWrap: old MTU size: %d | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| nimfAdvOptSetWrap: old Port Speed Option: %d | DEBUG | ddnsDisable failed | ERROR |
| nimfAdvOptSetWrap: old Mac Address Option: %d | DEBUG | ddns: SQL error: %s | ERROR |
| nimfAdvOptSetWrap: MacAddress: %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| Setting LED [%d]:[%d] For %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| l2tpEnable: command string: %s | DEBUG | ddnsDisable failed | ERROR |
| nimfAdvOptSetWrap: handling reboot scenario | DEBUG | failed to call ddns enable | ERROR |
| nimfAdvOptSetWrap: INDICATOR = %d | DEBUG | ddns: SQL error: %s | ERROR |
| nimfAdvOptSetWrap: UpdateFlag: %d | DEBUG | ddnsDisable failed | ERROR |
| nimfAdvOptSetWrap: returning with status: %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| nimfGetUpdateMacFlag: MacTable Flag is: %d | DEBUG | Error in executing DB update handler | ERROR |
| nimfMacGet: Mac Option changed | DEBUG | Failed to open the resolv.conf file. Exiting./n | ERROR |
| nimfMacGet: Update Flag: %d | DEBUG | Could not write to the resolv.conf file. Exiting. | ERROR |
| nimfMacGet: MacAddress: %s | DEBUG | Error opening the lanUptime File | ERROR |
| nimfMacGet: MacAddress: %s | DEBUG | Error Opening the lanUptime File. | ERROR |
| nimfMacGet: MacAddress: %s | DEBUG | failed to open %s | ERROR |
| nimfMacGet: MacAddress: %s | DEBUG | failed to open %s | ERROR |
| nimfMacGet: MacAddress: %s | DEBUG | failed to query networkInterface table | ERROR |
| nimfMacGet:Mac option Not changed \ | DEBUG | failed to query networkInterface table | ERROR |
| nimfMacGet: MacAddress: %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| nimfMacGet: MacAddress: %s | DEBUG | failed to enable IPv6 forwarding | ERROR |
| nimfMacGet: MacAddress: %s | DEBUG | failed to set capabilities on the " | ERROR |
| nimfMacGet: returning with status: %s | DEBUG | failed to enable IPv6 forwarding | ERROR |
| Now in enableing LanBridge function | DEBUG | failed to set capabilities on the " | ERROR |
| sucessfully executed the command %s | DEBUG | failed to disable IPv6 forwarding | ERROR |
| Now in disableing LanBridge function | DEBUG | failed to set capabilities on the " | ERROR |
| sucessfully executed the command %s | DEBUG | failed to open %s | ERROR |
| configPortTblHandler:Now we are in Sqlite Update " | DEBUG | Could not create ISATAP Tunnel | ERROR |
| The Old Configuration of ConfiPort was:%s | DEBUG | Could not destroy ISATAP Tunnel | ERROR |
| The New Configuration of ConfiPort was:%s | DEBUG | Could not configure ISATAP Tunnel | ERROR |
| The user has deselected the configurable port | DEBUG | Could not de-configure ISATAP Tunnel | ERROR |
| failed query %s | DEBUG | nimfStatusUpdate: updating NimfStatus failed | ERROR |
| failed query %s | DEBUG | nimfStatusUpdate: updating NimfStatus failed | ERROR |
| failed query %s | DEBUG | nimfLinkStatusGet: determinig link's status failed | ERROR |
| %s:DBUpdate event: Table: %s opCode:%d rowId:%d | DEBUG | nimfLinkStatusGet: opening status file failed | ERROR |

| | | | |
|---|---|---|---|
| %s:DBUpdate event: Table: %s opCode:%d rowId:%d | DEBUG | Failed to commit | ERROR |
| %s:%d SIP ENABLE: %s | DEBUG | ifStatusDBUpdate: Failed to begin " | ERROR |
| sipTblHandler:failed to update ifStatic | DEBUG | %s: SQL error: %s | ERROR |
| sipTblHandler:failed to update Configport | DEBUG | %s: Failed to commit " | ERROR |
| %s:%d SIP DISABLE: %s | DEBUG | nimfNetIfaceTblHandler: unable to get LedPinId | ERROR |
| %s:%d SIP SET CONF: %s | DEBUG | nimfNetIfaceTblHandler: unable to get LedPinId | ERROR |
| Failed to open %s: %s | DEBUG | nimfNetIfaceTblHandler: unable to get LedPinId | ERROR |
| Failed to start sipalg | DEBUG | %s: unable to kill dhclient | ERROR |
| Failed to stop sipalg | DEBUG | nimfAdvOptSetWrap: unable to get current Mac Option | ERROR |
| Failed to get config info | DEBUG | nimfAdvOptSetWrap: unable to get current Port " | ERROR |
| Network Mask: 0x%x | DEBUG | nimfAdvOptSetWrap: unable to get current MTU Option | ERROR |
| RTP DSCP Value: 0x%x | DEBUG | nimfAdvOptSetWrap: error getting Mac Address from " | ERROR |
| Need more arguments | DEBUG | nimfAdvOptSetWrap: unable to get the MTU | ERROR |
| Invalid lanaddr | DEBUG | nimfAdvOptSetWrap: error setting interface advanced " | ERROR |
| Invalid lanmask | DEBUG | nimfAdvOptSetWrap: error getting MTU size | ERROR |
| Invalid option | DEBUG | nimfAdvOptSetWrap: unable to get Mac Address | ERROR |
| Failed to set config info | DEBUG | nimfAdvOptSetWrap: error setting interface advanced " | ERROR |
| Unknown option | DEBUG | nimfAdvOptSetWrap: failed to get old connectiontype | ERROR |
| sshdTblHandler | DEBUG | nimfAdvOptSetWrap: old connection type is: %s | ERROR |
| pPort: %s | DEBUG | nimfAdvOptSetWrap: failed to get old MTU Option | ERROR |
| pProtocol: %s | DEBUG | nimfAdvOptSetWrap: error getting MTU size | ERROR |
| pListerAddr: %s | DEBUG | nimfOldFieldValueGet: failed to get old " | ERROR |
| pKeyBits: %s | DEBUG | nimfOldFieldValueGet: user has changed MTU size | ERROR |
| pRootEnable: %s | DEBUG | nimfAdvOptSetWrap: failed to get old Port Speed " | ERROR |
| pRsaEnable: %s | DEBUG | nimfAdvOptSetWrap: user has changed Port Speed | ERROR |
| pDsaEnable: %s | DEBUG | nimfAdvOptSetWrap: failed to get old Mac Address " | ERROR |
| pPassEnable: %s | DEBUG | nimfAdvOptSetWrap: user has changed Mac Address " | ERROR |
| pEmptyPassEnable: %s | DEBUG | nimfAdvOptSetWrap: unable to get Mac Address | ERROR |
| pSftpEnable: %s | DEBUG | nimfAdvOptSetWrap:Failed to RESET the flag | ERROR |
| pScpEnable: %s | DEBUG | nimfAdvOptSetWrap: setting advanced options failed | ERROR |
| pSshdEnable: %s | DEBUG | nimfAdvOptSetWrap: interface advanced options applied | ERROR |

| | | | |
|---|---|---|---|
| pPrivSep: %s | DEBUG | nimfGetUpdateMacFlag: unable to get Flag from MacTable | ERROR |
| %s:DBUpdate event: Table: %s opCode:%d rowId:%d | DEBUG | nimfMacGet: Updating MAC address failed | ERROR |
| Re-Starting sshd daemon.... | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| sshd re-started successfully. | DEBUG | error executing the command %s | ERROR |
| sshd stopped . | DEBUG | error executing the command %s | ERROR |
| failed query %s | DEBUG | error executing the command %s | ERROR |
| vlan disabled, not applying vlan configuration.. | DEBUG | disableLan function is failed to disable ConfigPort" | ERROR |
| failed query %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| failed query %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| no ports present in this vlanId %d | DEBUG | Unable to Disable configurable port from | ERROR |
| failed query %s | DEBUG | configPortTblHandler has failed | ERROR |
| vlan disabled, not applying vlan configuration.. | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| disabling vlan | DEBUG | Error in executing DB update handler | ERROR |
| enabling vlan | DEBUG | sqlite3QueryResGet failed | ERROR |
| vlan disabled, not applying vlan configuration.. | DEBUG | Failed to execute switchConfig for port\ | ERROR |
| no ports present in this vlanId %d | DEBUG | Failed to execute switchConfig for port enable | ERROR |
| failed query %s | DEBUG | Failed to execute ifconfig for port enable | ERROR |
| vlan disabled, not applying vlan configuration.. | DEBUG | Failed to execute ethtool for\ | ERROR |
| removing %s from bridge%s... %s | DEBUG | Failed to execute switchConfig for port disable | ERROR |
| adding %s to bridge%d... %s | DEBUG | Failed to execute ifconfig for port disable | ERROR |
| restarting bridge... | DEBUG | sqlite3QueryResGet failed | ERROR |
| [switchConfig] Ignoring event on port number %d | DEBUG | sqlite3_mprintf failed | ERROR |
| restarting bridge... | DEBUG | sqlite3QueryResGet failed | ERROR |
| executing %s ... %s | DEBUG | Failed to execute switchConfig for port mirroring | ERROR |
| removing %s from bridge%s... %s | DEBUG | Usage:%s <DB Name> <Entry Name> <logFile> <subject> | ERROR |
| adding %s to bridge%d... %s | DEBUG | sqlite3QueryResGet failed | ERROR |
| [switchConfig] Ignoring event on %s | DEBUG | Could not get all the required variables to email the Logs. | ERROR |
| restarting bridge... | DEBUG | runSmtpClient failed | ERROR |
| [switchConfig] Ignoring event on port number %d | DEBUG | getaddrinfo returned %s | ERROR |
| [switchConfig] executing %s ... %s | DEBUG | file not found | ERROR |
| restarting bridge... | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| UserName: %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| Password: %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| IspName: %s | DEBUG | No memory to allocate | ERROR |
| DialNumber: %s | DEBUG | Failed to Open SSHD Configuration File | ERROR |
| Apn: %s | DEBUG | Ipaddress should be provided with accessoption 1 | ERROR |

| | | | |
|---|---|---|---|
| GetDnsFromIsp: %s | DEBUG | Subnetaddress should be provided with accessoption 2 | ERROR |
| IdleTimeOutFlag: %s | DEBUG | Failed to restart sshd | ERROR |
| IdleTimeOutValue: %d | DEBUG | unable to open the '' | ERROR |
| AuthMetho: %d | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| executing %s ... %s | DEBUG | Error in executing DB update handler | ERROR |
| removing %s from bridge%d... %s | DEBUG | Error in executing DB update handler | ERROR |
| adding %s to bridge%d... %s | DEBUG | unknown vlan state | ERROR |
| stopping bridge... | DEBUG | Failed to execute vlanConfig binary for vlanId %d | ERROR |
| restarting bridge... | DEBUG | sqlite3_mprintf failed | ERROR |
| Could not configure 6to4 Tunnel Interface | DEBUG | Access port can be present only in single vlan | ERROR |
| Could not de-configure 6to4 Tunnel Interface | DEBUG | Failed to execute vlanConfig binary for vlanId %d | ERROR |
| failed to restart 6to4 tunnel interfaces | DEBUG | unknown vlan state | ERROR |
| BridgeConfig: too few arguments to command %s | DEBUG | Failed to execute vlanConfig binary for port number %d | ERROR |
| BridgeConfig: unsupported command %d | DEBUG | Failed to clear vlan for oldPVID %d | ERROR |
| BridgeConfig returned error=%d | DEBUG | Failed to execute vlanConfig binary for port number %d | ERROR |
| sqlite3QueryResGet failed | DEBUG | Failed to clear vlan for %d | ERROR |
| Error in executing DB update handler | DEBUG | Failed to set vlan entry for vlan %d | ERROR |
| sqlite3QueryResGet failed | DEBUG | Failed to set vlan entries, while enabling \ | ERROR |
| Failed to remove vlan Interface for vlanId \ | DEBUG | sqlite3QueryResGet failed | ERROR |
| sqlite3QueryResGet failed | DEBUG | Failed to execute vlanConfig binary for port number %d | ERROR |
| Invalid oidp passed | DEBUG | Failed to execute vlanConfig binary for vlanId %d | ERROR |
| Invalid oidp passed | DEBUG | Failed to enable vlan | ERROR |
| Failed to get oid from the tree | DEBUG | Failed to disable vlan | ERROR |
| threegEnable: Input to wrapper %s | DEBUG | Failed to set vlanPort table entries, while \ | ERROR |
| threegEnable: spawning command %s | DEBUG | Failed to enable vlan | ERROR |
| threegMgmtHandler: query string: %s | DEBUG | unknown vlan state | ERROR |
| threegMgmtHandler: returning with status: %s | DEBUG | Error in executing DB update handler | ERROR |
| adding to dhcprealy ifgroup failed | DEBUG | unknown vlan state | ERROR |
| adding to ipset fwDhcpRelay failed | DEBUG | Failed to execute vlanConfig binary for vlanId %d | ERROR |
| Disabling Firewall Rule for DHCP Relay Protocol | DEBUG | sqlite3_mprintf failed | ERROR |
| Enabling Firewall Rule for DHCP Relay Protocol | DEBUG | Access port can be present only in single vlan | ERROR |
| prerouting Firewall Rule add for Relay failed | DEBUG | Failed to execute vlanConfig binary for vlanId %d | ERROR |
| prerouting Firewall Rule add for Relay failed | DEBUG | unknown vlan state | ERROR |
| %s: SQL get query: %s | DEBUG | Failed to execute vlanConfig binary for port number %d | ERROR |
| %s: sqlite3QueryResGet failed | DEBUG | Failed to clear vlan for oldPVID %d | ERROR |
| %s: no result found | DEBUG | Failed to execute vlanConfig binary for port number %d | ERROR |

| | | | |
|---|---|---|---|
| %s: buffer overflow | DEBUG | Failed to clear vlan for %d | ERROR |
| %s: value of %s in %s table is: %s | DEBUG | Failed to set vlan entry for vlan %d | ERROR |
| %s: returning with status: %s | DEBUG | Failed to set vlan entries, while enabling \ | ERROR |
| dnsResolverConfigure: addressFamily: %d | DEBUG | Failed to execute vlanConfig binary for port number %d | ERROR |
| dnsResolverConfigure: LogicalIfName: %s | DEBUG | Failed to execute vlanConfig binary for vlanId %d | ERROR |
| chap-secrets File found | DEBUG | Failed to enable vlan | ERROR |
| PID File for xl2tpd found | DEBUG | Failed to disable vlan | ERROR |
| pid: %d | DEBUG | Failed to set vlanPort table entries, while \ | ERROR |
| options.xl2tpd file found | DEBUG | Failed to enable vlan | ERROR |
| options.xl2tpd file not found | DEBUG | unknown vlan state | ERROR |
| Conf File for xl2tpd found | DEBUG | threegMgmtInit: unable to open the database file %s | ERROR |
| xl2tpd.conf not found | DEBUG | threegConnEnable: failed to get the WanMode | ERROR |
| Chap Secrets file found | DEBUG | threegEnable:spawning failed | ERROR |
| Chap Secrets file not found | DEBUG | threegDisable: unable to kill ppp daemon | ERROR |
| %s:DBUpdate event: Table: %s opCode:%d rowId:%d | DEBUG | threegMgmtHandler:  Query: %s | ERROR |
| chap-secrets File found | DEBUG | threegMgmtHandler: error in executing database update | ERROR |
| PID File for pptpd found | DEBUG | Error in executing DB update handler | ERROR |
| pid: %d | DEBUG | are we getting invoked twice ?? | ERROR |
| PID File for pptpd interface found | DEBUG | could not open %s to append | ERROR |
| pid: %d | DEBUG | could not write nameserver %s to %s | ERROR |
| options.pptpd file found | DEBUG | could not write nameserver %s to %s | ERROR |
| options.pptpd file not found | DEBUG | could not open %s to truncate | ERROR |
| Conf File for pptpd found | DEBUG | dnsResolverConfigMgmtInit: unable to open the " | ERROR |
| pptpd.conf not found | DEBUG | resolverConfigDBUpateHandler: sqlite3QueryResGet " | ERROR |
| Chap Secrets file found | DEBUG | could not configure DNS resolver | ERROR |
| Chap Secrets file not found | DEBUG | dnsResolverConfigure: could not write nameserver:%s," | ERROR |
| %s:DBUpdate event: Table: %s opCode:%d rowId:%d | DEBUG | unboundMgmt: unable to open the " | ERROR |
| chap-secrets File found | DEBUG | ioctl call Failed-could not update active user Details | ERROR |
| pppoeMgmtTblHandler: MtuFlag: %d | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| pppoeMgmtTblHandler: Mtu: %d | DEBUG | Can't kill xl2tpd | ERROR |
| pppoeMgmtTblHandler: IdleTimeOutFlag: %d | DEBUG | xl2tpd restart failed | ERROR |
| pppoeMgmtTblHandler: IdleTimeOutValue: %d | DEBUG | failed to get field value | ERROR |
| pppoeMgmtTblHandler: UserName: %s | DEBUG | failed to get field value | ERROR |
| pppoeMgmtTblHandler: Password: %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| pppoeMgmtTblHandler: DNS specified: %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| pppoeMgmtTblHandler: Service: %s | DEBUG | unboundMgmt: unable to open the " | ERROR |
| pppoeMgmtTblHandler: StaticIp: %s | DEBUG | writing options.xl2tpd failed | ERROR |

| | | | |
|---|---|---|---|
| pppoeMgmtTblHandler: NetMask: %s | DEBUG | xl2tpdStop failed | ERROR |
| pppoeMgmtTblHandler: AuthOpt: %d | DEBUG | writing xl2tpd.conf failed | ERROR |
| pppoeMgmtTblHandler: Satus: %d | DEBUG | writing options.xl2tpd failed | ERROR |
| pppoeEnable: ppp dial string: %s | DEBUG | xl2tpdStop failed | ERROR |
| pppoeMgmtDBUpdateHandler: returning with status: %s | DEBUG | xl2tpdStart failed | ERROR |
| pptpMgmtTblHandler: MtuFlag: %d | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| pptpMgmtTblHandler: Mtu: %d | DEBUG | writing Chap-secrets/Pap-Secrets failed | ERROR |
| pptpMgmtTblHandler: IdleTimeOutFlag: %d | DEBUG | xl2tpdStop failed | ERROR |
| pptpMgmtTblHandler: IdleTimeOutValue: %d | DEBUG | xl2tpdStart failed | ERROR |
| pptpMgmtTblHandler: GetDnsFromIsp: %d | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| pptpMgmtTblHandler: UserName: %s | DEBUG | writing Chap-secrets/Pap-Secrets failed | ERROR |
| pptpMgmtTblHandler: Password: %s | DEBUG | xl2tpdStop failed | ERROR |
| pptpMgmtTblHandler: dynamic MyIp configured | DEBUG | xl2tpdStart failed | ERROR |
| pptpMgmtTblHandler: MyIp: %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| pptpMgmtTblHandler: ServerIp: %s | DEBUG | writing Chap-secrets/Pap-Secrets failed | ERROR |
| pptpMgmtTblHandler: StaticIp: %s | DEBUG | Error in executing DB update handler | ERROR |
| pptpMgmtTblHandler: NetMask: %s | DEBUG | unboundMgmt: unable to open the '' | ERROR |
| pptpMgmtTblHandler: MppeEncryptSupport: %s | DEBUG | Can't kill pptpd | ERROR |
| pptpMgmtTblHandler: SplitTunnel: %s | DEBUG | pptpd restart failed | ERROR |
| pptpEnable: ppp dial string: %s | DEBUG | Can't kill pptpd | ERROR |
| pptpEnable: spawning command %s | DEBUG | failed to get field value | ERROR |
| PID File for dhcpc found | DEBUG | failed to get field value | ERROR |
| pid: %d | DEBUG | unboundMgmt: unable to open the '' | ERROR |
| pptpMgmtDBUpdateHandler: query string: %s | DEBUG | writing options.pptpd failed | ERROR |
| pptpMgmtDBUpdateHandler: returning with status: %s | DEBUG | pptpdStop failed | ERROR |
| dhcpcReleaseLease: dhcpc release command: %s | DEBUG | writing pptpd.conf failed | ERROR |
| dhcpcMgmtTblHandler: MtuFlag: %d | DEBUG | writing options.pptpd failed | ERROR |
| dhcpcMgmtTblHandler: Mtu: %d | DEBUG | pptpdStop failed | ERROR |
| DHCPv6 Server started successfully. | DEBUG | pptpdStart failed | ERROR |
| DHCPv6 Server stopped successfully | DEBUG | writing Chap-secrets/Pap-Secrets failed | ERROR |
| DHCPv6 Client started successfully. | DEBUG | Error in executing DB update handler | ERROR |
| DHCPv6 Client stopped successfully. | DEBUG | pppStatsUpdate: unable to get default MTU | ERROR |
| DHCPv6 Client Restart successful | DEBUG | pppoeMgmtInit: unable to open the database file %s | ERROR |
| l2tpMgmtTblHandler: MtuFlag: %d | DEBUG | pppoeDisable: unable to kill ppp daemon | ERROR |
| l2tpMgmtTblHandler: Mtu: %d | DEBUG | pppoeMultipleEnableDisable: pppoe enable failed | ERROR |
| l2tpMgmtTblHandler: IspName: %s | DEBUG | pppoeMultipleEnableDisable: pppoe disable failed | ERROR |

| | | | |
|---|---|---|---|
| l2tpMgmtTblHandler: UserName: %s | DEBUG | pppoeMgmtTblHandler: unable to get current Mtu Option | ERROR |
| l2tpMgmtTblHandler: Password: %s | DEBUG | pppoeMgmtTblHandler: unable to get the Mtu | ERROR |
| l2tpMgmtTblHandler: AccountName: %s | DEBUG | pppoeMgmtTblHandler: pppoe enable failed | ERROR |
| l2tpMgmtTblHandler: DomainName: %s | DEBUG | pppoeMgmtDBUpdateHandler: failed query: %s | ERROR |
| l2tpMgmtTblHandler: Secret: not specified | DEBUG | pppoeMgmtDBUpdateHandler: error in executing " | ERROR |
| l2tpMgmtTblHandler: Secret: %s | DEBUG | pptpMgmtInit: unable to open the database file %s | ERROR |
| l2tpMgmtTblHandler: dynamic MyIp configured | DEBUG | pptpEnable: error executing command: %s | ERROR |
| l2tpMgmtTblHandler: MyIp: %s | DEBUG | pptpEnable: unable to resolve address: %s | ERROR |
| l2tpMgmtTblHandler: ServerIp: %s | DEBUG | pptpEnable: inet_aton failed | ERROR |
| l2tpMgmtTblHandler: StaticIp: %s | DEBUG | pptpEnable: inet_aton failed | ERROR |
| l2tpMgmtTblHandler: NetMask: %s | DEBUG | pptpEnable:spawning failed | ERROR |
| l2tpMgmtTblHandler: SplitTunnel: %s | DEBUG | pptpDisable: unable to kill ppp daemon | ERROR |
| needToStartHealthMonitor: returning with status: %s | DEBUG | pptpMgmtTblHandler: unable to get current MTU Option | ERROR |
| l2tpEnable: command string: %s | DEBUG | pptpMgmtTblHandler: unable to get the Mtu | ERROR |
| l2tpEnable: command: %s | DEBUG | pptpMgmtTblHandler: dbRecordValueGet failed for %s " | ERROR |
| l2tpEnable: command string: %s | DEBUG | pptpMgmtTblHandler: pptp enable failed | ERROR |
| PID File for dhcpc found | DEBUG | pptpMgmtTblHandler: pptp disable failed | ERROR |
| pid: %d | DEBUG | pptpMgmtDBUpdateHandler: sqlite3QueryResGet " | ERROR |
| l2tpMgmtDBUpdateHandler: query string: %s | DEBUG | pptpMgmtDBUpdateHandler: error in executing " | ERROR |
| l2tpMgmtDBUpdateHandler: returning with status: %s | DEBUG | Illegal invocation of dhcpConfig (%s) | ERROR |
| RADVD started successfully | DEBUG | dhcpLibInit: unable to open the database file %s | ERROR |
| RADVD stopped successfully | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| empty update. nRows=%d nCols=%d | WARN | dhcpcMgmtInit: unable to open the database file %s | ERROR |
| Wan is not up or in load balencing mode | WARN | dhcpcReleaseLease: unable to release lease | ERROR |
| threegMgmtHandler: no row found. nRows = %d nCols = %d | WARN | dhcpcEnable: unable to kill dhclient | ERROR |
| pppoeMgmtDBUpdateHandler: empty update. | WARN | dhcpcEnable: enabling dhcpc failed on: %s | ERROR |
| dhcpcEnable: dhclient already running on: %s | WARN | dhcpcDisable: unable to kill dhclient | ERROR |
| dhcpcDisable: deleted dhclient.leases | WARN | dhcpcDisable: delete failed for dhclient.leases | ERROR |
| l2tpMgmtInit: unable to open the database file %s | ERROR | dhcpcDisable: failed to reset the ip | ERROR |
| l2tpEnable: unable to resolve address: %s | ERROR | dhcpcMgmtTblHandler: unable to get current Mtu Option | ERROR |
| l2tpEnable: inet_aton failed | ERROR | dhcpcMgmtTblHandler: unable to get the Mtu | ERROR |

| | | | |
|---|---|---|---|
| The Enable Command is %s | ERROR | dhcpcMgmtTblHandler: dhclient enable failed | ERROR |
| l2tpEnable:Executing the Command failed | ERROR | dhcpcMgmtTblHandler: dhcpc release failed | ERROR |
| l2tpDisable: command string: %s | ERROR | dhcpcMgmtTblHandler: dhcpc disable failed | ERROR |
| l2tpDisable: unable to stop l2tp session | ERROR | dhcpcMgmtDBUpdateHandler: failed query: %s | ERROR |
| l2tpMgmtTblHandler: unable to get current MTU option | ERROR | dhcpcMgmtDBUpdateHandler: error in executing " | ERROR |
| l2tpMgmtTblHandler: unable to get the Mtu | ERROR | DHCPv6 Client start failed. | ERROR |
| l2tpMgmtTblHandler: dbRecordValueGet failed for %s " | ERROR | DHCPv6 Client stop failed. | ERROR |
| l2tpMgmtTblHandler: l2tpEnable failed | ERROR | failed to create/open DHCPv6 client " | ERROR |
| l2tpMgmtTblHandler: disabling l2tp failed | ERROR | failed to write DHCPv6 client configuration file | ERROR |
| l2tpMgmtDBUpdateHandler: sqlite3QueryResGet " | ERROR | failed to restart DHCPv6 Client | ERROR |
| l2tpMgmtDBUpdateHandler: error in executing | ERROR | failed to create/open DHCPv6 Server " | ERROR |
| Illegal invocation of tcpdumpConfig (%s) | ERROR | Restoring old configuration.. | ERROR |
| Failed to start tcpdump | ERROR | DHCPv6 Server configuration update failed | ERROR |
| Failed to stop tcpdump | ERROR | DHCPv6 Server Restart failed | ERROR |
| Invalid tcpdumpEnable value | ERROR | sqlite3QueryResGet failed.Query:%s | ERROR |

## Facility: System (VPN)

| Log Message | Severity | Log Message | Severity |
|---|---|---|---|
| %d command not supported by eapAuth | DEBUG | PEAP key derive: ERROR | ERROR |
| pCtx NULL. | DEBUG | PEAP context is NULL: ERROR | ERROR |
| Current cert subject name= %s | DEBUG | Constructing P2 response: ERROR | ERROR |
| X509_STORE_CTX_get_ex_data failed. | DEBUG | innerEapRecv is NULL: ERROR | ERROR |
| Cannot get cipher, no session est. | DEBUG | Decrypting TLS data: ERROR | ERROR |
| %s: SSL_ERROR_WANT_X509_LOOKUP | DEBUG | Wrong identity size: ERROR | ERROR |
| err code = (%d) in %s | DEBUG | Wrong size for extensions packet: ERROR | ERROR |
| BIO_write: Error | DEBUG | innerEapRecv is NULL: ERROR. | ERROR |
| Decrypting: BIO reset failed | DEBUG | Inner EAP processing: ERROR | ERROR |
| Encrypting BIO reset: ERROR | DEBUG | TLS handshake: ERROR. | ERROR |
| BIO_read: Error | DEBUG | Sending P1 response: ERROR | ERROR |
| EAP state machine changed from %s to %s. | DEBUG | Unexpected tlsGlueContinue return value. | ERROR |
| EAP state machine changed from %s to %s. | DEBUG | No more fragments in message. ERROR | ERROR |
| Received EAP Packet with code %d | DEBUG | No phase 2 data or phase 2 data buffer NULL: ERROR | ERROR |
| Response ID %d | DEBUG | Allocating memory for PEAP Phase 2 payload: ERROR | ERROR |
| Response Method %d | DEBUG | TLS encrypting response: ERROR | ERROR |

| | | | |
|---|---|---|---|
| Created EAP/PEAP context: OK | DEBUG | Setting message in fragment buffer: ERROR | ERROR |
| Deleted EAP/PEAP context: OK | DEBUG | Allocating TLS read buffer is NULL: ERROR | ERROR |
| Upper EAP sent us: decision = %d method state = %d | DEBUG | Setting last fragment: ERROR | ERROR |
| P2 decision=(%d); methodState=(%d) | DEBUG | Getting message: ERROR | ERROR |
| Writing message to BIO: ERROR. | DEBUG | Processing PEAP message: ERROR | ERROR |
| Encrypted (%d) bytes for P2 | DEBUG | Setting fragment: ERROR | ERROR |
| P2: sending fragment. | DEBUG | Creating receive buffer: ERROR | ERROR |
| P2: message size = %d | DEBUG | Setting first fragment: ERROR | ERROR |
| P2: sending unfragmented message. | DEBUG | Sending P1 response: ERROR | ERROR |
| P1: Sending fragment. | DEBUG | NULL request (or response) PDU or NULL context: ERROR | ERROR |
| P1: Total TLS message size = (%d) | DEBUG | Expecting start packet, got something else: ERROR | ERROR |
| P1: sending unfragmented message. | DEBUG | Protocol version mismatch: ERROR | ERROR |
| peapFragFirstProcess: TLS record size to receive = (%d) | DEBUG | Processing PEAP message (from frag): ERROR | ERROR |
| Setting version %d | DEBUG | Processing PEAP message: ERROR | ERROR |
| PEAP pkt rcvd: data len=(%d) flags=(%d) version=(%d) | DEBUG | Processing PEAP message: ERROR | ERROR |
| Got PEAP/Start packet. | DEBUG | Indicated length not valid: ERROR | ERROR |
| Got first fragment | DEBUG | Did not get Acknowledged result: ERROR | ERROR |
| Got fragment (n) | DEBUG | Cannot understand AVP value: ERROR | ERROR |
| Got last fragment | DEBUG | eapExtResp is NULL: ERROR | ERROR |
| Got unfragmented message | DEBUG | eapWscCtxCreate: EAPAUTH_MALLOC failed. | ERROR |
| Got frag ack. | DEBUG | eapWscProcess: umiIoctl req to WSC failed, status = %d | ERROR |
| Ext AVP parsed: flags=(0x%x) | DEBUG | eapWscCheck: Invalid frame | ERROR |
| Mandatory bit not set: WARNING | DEBUG | eapWscBuildReq: Invalid state %d | ERROR |
| Ext AVP parsed: type=(%d) | DEBUG | eapWscProcessWscResp: Invalid data recd pData = %p, dataLen" | ERROR |
| Ext AVP parsed: value=(%d) | DEBUG | Data received for invalid context, dropping it | ERROR |
| Got PEAPv0 success! | DEBUG | eapWscProcessWscResp: Build Request failed | ERROR |
| Got PEAPv0 failure! | DEBUG | eapWscProcessWscResp: Invalid state %d | ERROR |
| pCtx NULL. | DEBUG | eapWscProcessWscResp: Message processing failed 0x%X | ERROR |
| Authenticator response check: Error | DEBUG | eapWscProcessWscData: Invalid notification recd %d | ERROR |
| Authenticator response check: Failed | DEBUG | unable to initialize MD5 | ERROR |
| MS-CHAP2 Response AVP size = %u | DEBUG | MDString: adpDigestInit for md5 failed | ERROR |
| Created EAP/MS-CHAP2 context: OK. | DEBUG | EAPAUTH_MALLOC failed. | ERROR |
| pCtx NULL. | DEBUG | EAPAUTH_MALLOC failed. | ERROR |
| Deleted EAP/MS-CHAPv2 context: OK | DEBUG | NULL context created: Error | ERROR |
| Not authenticated yet. | DEBUG | NULL context received: Error | ERROR |
| Authenticator response invalid | DEBUG | Authenticator ident invalid. | ERROR |
| EAP-MS-CHAPv2 password changed. | DEBUG | Success request message invalid: | ERROR |

| | | | |
|---|---|---|---|
| | | Error | |
| rcvd. opCode %d. | DEBUG | Plugin context is NULL | ERROR |
| pCtx NULL. | DEBUG | Deriving implicit challenge: Error | ERROR |
| TLS message len changed in the fragment, ignoring. | DEBUG | Generating NT response: Error | ERROR |
| no data to send while fragment ack received. | DEBUG | NULL in/out buffer: Error | ERROR |
| TLS handshake successful. | DEBUG | Incorrect vendor id. | ERROR |
| Created EAP/TTLS context: OK | DEBUG | Allocating memory for outBuff: ERROR | ERROR |
| Deleted EAP/TTLS context: OK | DEBUG | AVP code not recognized | ERROR |
| No more fragments in message. ERROR | DEBUG | EAPAUTH_MALLOC failed. | ERROR |
| Upper EAP sent us: method state = %d; decision = %d | DEBUG | Converting password to unicode: Error | ERROR |
| P2: sending fragment. | DEBUG | Generating password hash: Error. | ERROR |
| P2 send unfragmented message. | DEBUG | Generating password hash hash: Error. | ERROR |
| P1: sending fragment. | DEBUG | Generating master key: Error. | ERROR |
| P1: sending unfragmented message. | DEBUG | Generating first 16 bytes of session key: Error.n | ERROR |
| \tTLSMsgLen = 0x%x | DEBUG | Generating second 16 bytes of session key: Error.n | ERROR |
| Send req ptr = 0x%x; Send resp ptr = 0x%x | DEBUG | Converting password to unicode: Error | ERROR |
| P2 decision=(%d); methodState=(%d) | DEBUG | Constructing failure response: ERROR | ERROR |
| Default EAP: method state = %d; decision = %d | DEBUG | Error checking authenticator response. | ERROR |
| TTLS pkt: data len=(%d) flags=(0x%x) | DEBUG | Error generating NT response. | ERROR |
| Got start | DEBUG | Username string more than 256 ASCII characters: ERROR | ERROR |
| Got first fragment (n). | DEBUG | Invalid Value-Size. | ERROR |
| Got fragment (n). | DEBUG | Invalid MS-Length. Got (%d), expected (%d) | ERROR |
| Got last fragment | DEBUG | Error constructing response. | ERROR |
| Got unfragmented message. | DEBUG | Got type (%d), expecting (%d) | ERROR |
| Got frag ack. | DEBUG | Cannot handle message; opCode = %d | ERROR |
| Rcvd. AVP Code-%u: flags-0x%x: len-%u: vendorId-%u: " | DEBUG | EAPAUTH_MALLOC failed. | ERROR |
| MOD EAP: method state from upper = %d; decision = %d | DEBUG | tlsGlueCtxCreate failed. | ERROR |
| Got AVP len = %ul. Should be less than 16777215 | DEBUG | client certificate must be set in the profile. | ERROR |
| AVP length extract: Error | DEBUG | received tls message length too big. | ERROR |
| pFB is NULL | DEBUG | total frags len > initial total tls length. | ERROR |
| Requesting message before assembly complete | DEBUG | total frags len > initial total tls length. | ERROR |
| pFB is NULL | DEBUG | total data rcvd(%d) doesnt match the initial " | ERROR |
| pFB is NULL | DEBUG | couldnt write %d data to TLS buffer. | ERROR |
| Buffer cannot hold message: ERROR | DEBUG | invalid flags %s passed to eapTlsBuildResp. | ERROR |
| pFB is NULL: Error | DEBUG | EAPAUTH_MALLOC failed. | ERROR |
| pFB is NULL | DEBUG | tlsGlueCtxCreate failed. | ERROR |
| TLS_FB* is NULL. | DEBUG | Context NULL: ERROR | ERROR |

| | | | |
|---|---|---|---|
| pFB->msgBuff is NULL. | DEBUG | Setting profile to glue layer: ERROR. | ERROR |
| Error calculating binary. | DEBUG | _eapCtxCreate failed. | ERROR |
| Error calculating binary. | DEBUG | %d authentication not enabled in the system. | ERROR |
| adpDigestInit for SHA1 failed. | DEBUG | Initializing inner non-EAP auth plugin: ERROR | ERROR |
| adpDigestInit for SHA1 failed. | DEBUG | TTLS key derive: ERROR | ERROR |
| E = %d | DEBUG | TTLS context from EAP plugin is NULL: ERROR | ERROR |
| R = %d | DEBUG | Allocating memory for TTLS Phase 2 payload: ERROR | ERROR |
| Could not initialize des-ecb | DEBUG | TLS Encrypting response: ERROR | ERROR |
| adpDigestInit for MD4 failed. | DEBUG | Allocating TLS read buffer is NULL: ERROR | ERROR |
| adpDigestInit for SHA1 failed. | DEBUG | Inner authentication (id: %d) unhandled | ERROR |
| adpDigestInit for SHA1 failed. | DEBUG | innerEapRecv is NULL: ERROR. | ERROR |
| Error converting received auth reponse to bin. | DEBUG | Decrypting TLS data: ERROR | ERROR |
| Gnerating challenge hash: Error | DEBUG | Processing Phase 2 method: Error | ERROR |
| Generating password hash: Error | DEBUG | Writing message to BIO: ERROR. | ERROR |
| Generating challenge response: Error | DEBUG | TLS handshake: ERROR. | ERROR |
| Conn cipher name=%s ver=%s: %s | DEBUG | Unexpected tlsGlueContinue return value. | ERROR |
| Send req ptr = 0x%x; Send resp ptr = 0x%x | DEBUG | NULL request (or response) PDU or NULL context | ERROR |
| Request ptr = 0x%x; | DEBUG | Protocol version mismatch: ERROR | ERROR |
| Response ptr = 0x%x | DEBUG | Creating receive buffer: ERROR | ERROR |
| Rcvd. AVP Code - %ul | DEBUG | Setting first fragment: ERROR | ERROR |
| Rcvd. AVP flags - 0x%02x | DEBUG | Setting fragment: ERROR | ERROR |
| Rcvd. AVP len - %ul | DEBUG | Setting last fragment: ERROR | ERROR |
| Rcvd. AVP vendor id - %ul | DEBUG | Getting message: ERROR | ERROR |
| \tCode = %d | DEBUG | Processing TTLS message: ERROR | ERROR |
| \tIdent = %d | DEBUG | Processing TTLS message: ERROR | ERROR |
| \tLen = %d | DEBUG | Processing TTLS message: ERROR | ERROR |
| \tType = %d | DEBUG | Decapsulating AVP: ERROR | ERROR |
| \tOpCode = %d | DEBUG | Processing EAP receive: Error | ERROR |
| \tMSID = %d | DEBUG | AVP code not EAP: Error | ERROR |
| \tmsLen = %d | DEBUG | Encapsulating AVP: ERROR | ERROR |
| \tvalSize = %d | DEBUG | profile %s doesnt exist. | ERROR |
| Frag Buffer bytes left = (%d) | DEBUG | profile %s is in use. | ERROR |
| Stripped username=(%s) | DEBUG | profile %s already exists. | ERROR |
| digestLen = %d. | DEBUG | EAPAUTH_MALLOC failed | ERROR |
| ClearText = | DEBUG | User not found. | ERROR |
| CipherText = | DEBUG | EAP-MD5 not enabled in system configuration. | ERROR |
| digestLen = %d. | DEBUG | EAP-MSCHAPV2 not enabled in system configuration. | ERROR |
| digestLen1 = %d. | DEBUG | EAP-TLS not enabled in system configuration. | ERROR |
| digestLen2 = %d. | DEBUG | EAP-TTLS not enabled in system configuration. | ERROR |

| | | | |
|---|---|---|---|
| password change is not allowed for this user | DEBUG | EAP-PEAP not enabled in system configuration. | ERROR |
| completed writing the policy | DEBUG | EAP-WSC not enabled in system configuration. | ERROR |
| completed writing the SA | DEBUG | PAP not enabled in system configuration. | ERROR |
| completed writing the proposal block | DEBUG | CHAP not enabled in system configuration. | ERROR |
| cmdBuf: %s | DEBUG | MSCHAP not enabled in system configuration. | ERROR |
| X509_DEBUG : Invalid Certificate for the generated" | DEBUG | MSCHAPV2 not enabled in system configuration. | ERROR |
| X590_ERROR : Failed to create File '%s' | DEBUG | PAP/Token not enabled in system configuration. | ERROR |
| x509TblHandler | DEBUG | EAP-MD5 not enabled in system configuration. | ERROR |
| pCertType: %s | DEBUG | EAP-MSCHAPV2 not enabled in system config. | ERROR |
| pRowQueryStr: %s | DEBUG | EAP-TLS not enabled in system configuration. | ERROR |
| x509SelfCertTblHandler | DEBUG | EAP-TTLS and EAP-PEAP are not valid as inner" | ERROR |
| pRowQueryStr: %s | DEBUG | invalid innerAuth %d. | ERROR |
| %s:DBUpdate event: Table: %s opCode:%d rowId:%d | DEBUG | profile %s doesnt exist. | ERROR |
| umiRegister failed | ERROR | Re-assembling fragments incorrect size | ERROR |
| eapAuthHandler: Invalid data received | ERROR | Error creating cipher context. | ERROR |
| EAPAUTH_MALLOC failed. | ERROR | Error initializing cipher context. | ERROR |
| malloc failed. | ERROR | Error creating digest context. | ERROR |
| BIO_new_mem_buf failed. | ERROR | Error initializing digest context. | ERROR |
| malloc failed. | ERROR | Error initializing DES in Klite | ERROR |
| BIO_new_mem_buf failed. | ERROR | Error initializing MD4 in Klite | ERROR |
| SSL_CTX_new (TLSv1_client_method) failed. | ERROR | Error initializing RC4 in Klite | ERROR |
| unable to set user configured CIPHER list %s | ERROR | Error initializing SHA in Klite | ERROR |
| Certificate verification failed. | ERROR | Error cleaning cipher context. | ERROR |
| Server name match failed. Got (%s) expected " | ERROR | Error destroying cipher context. | ERROR |
| SSL_CTX_use_certificate_file (cert, PEM) failed. | ERROR | Error cleaning digest context. | ERROR |
| SSL_CTX_use_PrivateKey_file failed. | ERROR | Error destroying digest context. | ERROR |
| private key does not match public key | ERROR | Error stripping domain name. | ERROR |
| SSL_CTX_load_verify_locations failed | ERROR | Error cleaning digest context. | ERROR |
| SSL_new failed. | ERROR | Error cleaning digest context. | ERROR |
| Both SSL_VERIFY_PEER and SSL_VERIFY_NONE set: Error | ERROR | Challenge not present in failure packet. | ERROR |
| EAPAUTH_MALLOC failed. | ERROR | Wrong challenge length. | ERROR |
| EAPAUTH_MALLOC failed. | ERROR | Incorrect password change version value. | ERROR |
| eapTimerCreate failed. | ERROR | Error generating password hash. | ERROR |
| eapCtxDelete:pCtx == NULL | ERROR | Error generating password hash. | ERROR |
| eapRole != EAP_ROLE_PEER or EAP_ROLE_AUTHENTICATOR | ERROR | Error encrypting password hash with block | ERROR |

| | | | |
|---|---|---|---|
| pEapCtx == NULL or pPDU == NULL. | ERROR | Could not initialize des-ecb | ERROR |
| received EAP pdu bigger than EAP_MTU_SIZE. | ERROR | Error cleaning cipher context. | ERROR |
| received EAP pdu bigger than EAP_MTU_SIZE. | ERROR | Error cleaning cipher context. | ERROR |
| state machine is in invalid state. | ERROR | Error cleaning digest context. | ERROR |
| unable to create method context. | ERROR | Error cleaning digest context. | ERROR |
| method ctxCreate failed. | ERROR | adpDigestInit for SHA1 failed. | ERROR |
| method profile set failed. | ERROR | X509_ERROR : .Query:%s | ERROR |
| state machine is in invalid state. | ERROR | X509_ERROR : Invalid Certificate for the " | ERROR |
| Only StandAlone authenticator supported currently. | ERROR | invalid x509 certificate | ERROR |
| state machine is in invalid state. | ERROR | Couldn't get the x509 cert hash | ERROR |
| BuildReq operation failed | ERROR | Memory allocation failed | ERROR |
| No method ops defined for current method | ERROR | FileName too lengthy | ERROR |
| Process operation failed | ERROR | Couldn't execute command | ERROR |
| state machine is in invalid state. | ERROR | Memory allocation failed | ERROR |
| Packet length mismatch %d, %d | ERROR | Memory allocation failed | ERROR |
| eapAuthTypeToType: Invalid eapAuthType %d | ERROR | invalid certificate data | ERROR |
| eapTypeToAuthType: Invalid eapType %d | ERROR | .Query:%s | ERROR |
| unable to create method context. | ERROR | .Query:%s | ERROR |
| method ctxCreate failed. | ERROR | Memory allocation failed | ERROR |
| Invalid condition, methodState = %d, respMethod = %d | ERROR | X509_ERROR : Failed to validate the certficate " | ERROR |
| A EAP Ctx map already exists | ERROR | Memory allocation failed | ERROR |
| eapTimerCreate: Currently unsupported for Peer role | ERROR | .Query:%s | ERROR |
| eapTimerStart: Currently unsupported for Peer role | ERROR | Invalid Sign Key Length : %d | ERROR |
| eapTimerDestroy: Currently unsupported for Peer role | ERROR | Invalid Hash Alg : %d | ERROR |
| eapTimerCancel: Currently unsupported for Peer role | ERROR | Invalid Sign Alg : %d | ERROR |
| eapTimerHandler: Currently unsupported for Peer role | ERROR | No Memory Available | ERROR |
| pCtx is NULL: ERROR | ERROR | Certificate Request Failed | ERROR |
| tlsGlueCtxCreate failed | ERROR | File Open Failed | ERROR |
| eapVars is NULL | ERROR | File is Empty | ERROR |
| Context NULL: ERROR | ERROR | Memory Allocation Failed | ERROR |
| Initializing inner EAP auth: ERROR | ERROR | File Open Failed | ERROR |
| pCtx is NULL: ERROR | ERROR | File is Empty | ERROR |
| Memory Allocation Failed | ERROR | Error in executing DB update handler | ERROR |

## Facility: System (Admin)

| Log Message | Severity | Log Message | Severity |
|---|---|---|---|
| Usage:%s <DBFile> | DEBUG | unable to register to UMI | ERROR |

| | | | |
|---|---|---|---|
| Could not open database: %s | DEBUG | sqlite3QueryResGet failed | ERROR |
| CPU LOG File not found | DEBUG | radSendtoServer: socket: %s | ERROR |
| MEM LOG File not found | DEBUG | radSendtoServer: bind() Failed: %s: %s | ERROR |
| cpuMemUsageDBUpdateHandler: update query: %s | DEBUG | radRecvfromServer: recvfrom() Failed: %s | ERROR |
| Printing the whole list after inserting | DEBUG | radRecvfromServer: Packet too small from %s:%d: %s | ERROR |
| %s at %d(minute) %d(hour) %d(dayOfMonth) %d(month)" | DEBUG | radCheckMsgAuth: Invalid Message-Authenticator length in" | ERROR |
| adpCmdExec exited with return code=%d | DEBUG | radDictLoad: couldn't open dictionary %s: %s | ERROR |
| %s op=%d row=%d | DEBUG | radBuildAndSendReq: Invalid Request Code %d | ERROR |
| sqlite3_mprintf failed | DEBUG | radPairAssign: bad attribute value length | ERROR |
| sqlite3QueryResGet failed: query=%s | DEBUG | radPairAssign: unknown attribute type %d | ERROR |
| Printing the whole list after delete | DEBUG | radPairNew: unknown attribute %d | ERROR |
| %s at %d(minute) %d(hour) %d(dayOfMonth) %d(month)" | DEBUG | radPairGen: Attribute(%d) has invalid length | ERROR |
| Printing the whole list after inserting | DEBUG | radPairValue: unknown attribute type %d | ERROR |
| %s at %d(minute) %d(hour) %d(dayOfMonth) %d(month)" | DEBUG | radPairValueLen: unknown attribute type %d | ERROR |
| email logs: No logging events enabled | DEBUG | radPairLocate: Attribute(%d) has invalid length | ERROR |
| %s | DEBUG | radPairUnpackDefault: Unknown-Attribute[%d]: | ERROR |
| Mail sent and the Database is reset. | DEBUG | radConfigure: can't open %s: %s | ERROR |
| Disabled syslog server | DEBUG | radConfigure: %s: line %d: bogus format: %s | ERROR |
| Event logs are full, sending logs to email | DEBUG | radConfAssert: No AuthServer Specified | ERROR |
| Email logs sending failed | DEBUG | radConfAssert: No Default Timeout Specified | ERROR |
| Packing attribute: %s | DEBUG | radConfAssert: No Default Retry Count Specified | ERROR |
| Server found: %s, secret: %s | DEBUG | radExtractMppeKey: Invalid MS-MPPE-Key Length | ERROR |
| Packed Auth. Reqest: code:%d, id:%d, len:%d | DEBUG | radVendorMessage: Invalid Length in Vendor Message | ERROR |
| Sending Packet to %x:%d .... | DEBUG | radVendorMessage: Unknown Vendor ID received:%d | ERROR |
| Receiving Reply Packet.... | DEBUG | radVendorAttrGet: Invalid Length in Vendor Message | ERROR |
| Verified Reply Packet Integrity | DEBUG | radVendorAttrGet: Unknown Vendor ID:%d | ERROR |
| Generated Reply Attribute-Value pairs | DEBUG | radVendorMessagePack: Unknown Vendor ID:%d | ERROR |
| Verified Message-Authenticator | DEBUG | radGetIPByName: couldn't resolve hostname: %s | ERROR |
| Unloaded RADIUS Dictionary | DEBUG | radGetHostIP: couldn't get hostname | ERROR |
| Adding Dictionary Attribute %s | DEBUG | radGetHostIP: couldn't get host IP address | ERROR |
| Adding Dictionary Value %s | DEBUG | radius dictionary loading failed | ERROR |
| Loaded Dictionary %s | DEBUG | Failed to set default timeout value | ERROR |

| | | | |
|---|---|---|---|
| Adding Dictionary Attribute '%s' | DEBUG | Failed to set default retries value | ERROR |
| Adding Dictionary Value %s | DEBUG | ERROR: incomplete DB update information. | ERROR |
| Receiving attribute: %s | DEBUG | old values result does not contain 2 rows | ERROR |
| Processing attribute: %s | DEBUG | sqlite3QueryResGet failed | ERROR |
| Processing attribute: %s | DEBUG | empty update. nRows=%d nCols=%d | ERROR |
| Processing attribute: %s | DEBUG | Error in executing DB update handler | ERROR |
| Processing attribute: %s | DEBUG | sqlite3QueryResGet failed | ERROR |
| radConfGet: '' | DEBUG | Invalid SQLITE operation code - %d | ERROR |
| Added Server %s:%d with '' | DEBUG | sqlite3QueryResGet failed | ERROR |
| Added Server %s:%d with '' | DEBUG | empty result. nRows=%d nCols=%d | ERROR |
| Default Timeout Set to %d | DEBUG | sqlite3QueryResGet failed | ERROR |
| Default Retry Count Set to %d | DEBUG | empty result. nRows=%d nCols=%d | ERROR |
| %s - %s : %d | DEBUG | RADIUS Accounting Exchange Failed | ERROR |
| Deleting Server %s:%d with '' | DEBUG | Unable to set debug for radAcct. | ERROR |
| Adding RowId:%d to Server %s:%d with '' | DEBUG | Unable to set debug level for radAcct. | ERROR |
| rowIds: %d - %d | DEBUG | ERROR: option value not specified | ERROR |
| Deleting Server %s:%d with '' | DEBUG | ERROR: option value not specified | ERROR |
| RADIUS Deconfigured | DEBUG | Unable to initialize radius | ERROR |
| Found Option %s on line %d of file %s | DEBUG | radEapMsgQueueAdd: Invalid EAP packet length(%d) | ERROR |
| Setting Option %s with value %s | DEBUG | radEapRecvTask: invalid EAP code:%d | ERROR |
| RADIUS Configured | DEBUG | radEapRecvTask: Packet length mismatch %d, %d | ERROR |
| %d : Server %s:%d with '' | DEBUG | No attributes received in Access-Challenge message | ERROR |
| DBUpdate event: Table: %s opCode:%d rowId:%d | DEBUG | No State Attribute in Access-Challenge message | ERROR |
| Host IP address: %s | DEBUG | radEapRecvTask: '' | ERROR |
| Adding Packet for existing cookie:%p | DEBUG | failed to initialize UMI | ERROR |
| Adding Packet and cookie:%p | DEBUG | umiRegister failed. errno=%d | ERROR |
| Releasing Packet and cookie:%p | DEBUG | Invalid arguments to ioctl handler | ERROR |
| Releasing Packet with cookie:%p | DEBUG | radEapSendRtn: Invalid Arguments | ERROR |
| Received EAP-Identity from Pnac: %s | DEBUG | radEapSendRtn: failed to allocate buffer | ERROR |
| Filling User-Name: %s | DEBUG | umiIoctl failed | ERROR |
| Filling State: | DEBUG | failed to initialize EAP message queue | ERROR |
| Filling EAP-Message: | DEBUG | Unable to set debug for radEap. | ERROR |
| Filling Service-Type: %d | DEBUG | Unable to set debug level for radEap. | ERROR |
| Filling Framed-MTU: %d | DEBUG | ERROR: option value not specified | ERROR |
| Received Access-Challenge from Server | DEBUG | ERROR: option value not specified | ERROR |
| Sending Reply EAP Packet to Pnac | DEBUG | could not initialize MGMT framework | ERROR |
| Error sending packet to Pnac | DEBUG | Unable to initialize radius | ERROR |
| RADIUS Authentication Failed; '' | DEBUG | Unable to set debug for radEap. | ERROR |
| RADIUS Authentication Successful; '' | DEBUG | Unable to set debug level for radEap. | ERROR |
| Got Packet with cookie:%p | DEBUG | ERROR: option value not specified | ERROR |
| Next DNS Retry after 1 min | DEBUG | Unable to initialize radius | ERROR |
| Next Synchronization after'' | DEBUG | Invalid username or password | ERROR |

| | | | |
|---|---|---|---|
| Next Synchronization after" | DEBUG | Unable to set debug for radAuth. | ERROR |
| Next Synchronization after %d \ | DEBUG | Unable to set debug level for radAuth. | ERROR |
| Primary is not available, " | DEBUG | ERROR: option value not specified | ERROR |
| Secondary is not available, " | DEBUG | Unable to initialize radius | ERROR |
| Invalid value for use default servers, " | DEBUG | Invalid username, challenge or response | ERROR |
| No server is configured, " | DEBUG | Unable to set debug for radAuth. | ERROR |
| Backing off for %d seconds | DEBUG | Unable to set debug level for radAuth. | ERROR |
| Requesting time from %s | DEBUG | ERROR: option value not specified | ERROR |
| Synchronized time with %s | DEBUG | Unable to initialize radius | ERROR |
| Received KOD packet from %s | DEBUG | Invalid username or password | ERROR |
| No suitable server found %s | DEBUG | usage : %s <DB fileName> | ERROR |
| Received Invalid Length packet from %s | DEBUG | ntpd : umi initialization failed | ERROR |
| Received Invalid Version packet from %s | DEBUG | ntpd : ntpInit failed | ERROR |
| Received Invalid Mode packet from %s | DEBUG | ntpd : ntpMgmtInit failed | ERROR |
| Request Timed out from %s | DEBUG | There was an error while getting the timeZoneChangeScript." | ERROR |
| Looking Up %s | DEBUG | unexpected reply from %d cmd=%d ! | ERROR |
| Timezone difference :%d | DEBUG | cmd %d not supported. caller %d | ERROR |
| Could not open file: %s | DEBUG | default reached | ERROR |
| Could not read data from file | DEBUG | Unable to initialize ntpControl | ERROR |
| ntpTblHandler | DEBUG | ntpMgmt : Couldn't open database %s | ERROR |
| status: %d | DEBUG | ERROR : incomplete DB update information | ERROR |
| tz: %d | DEBUG | empty update. nRows=%d nCols=%d | ERROR |
| DayLightsaving: %d | DEBUG | Error in executing DB update handler | ERROR |
| pNtpControl->ServerNames[PRIMARY_SERVER]: %s | DEBUG | requestNtpTime: Invalid addr | ERROR |
| pNtpControl->ServerNames[SECONDARY_SERVER] : %s | DEBUG | failed to take lock for compId: %d | ERROR |
| DS: %d | DEBUG | failed to convert ioctl args to buffer for" | ERROR |
| pPriServ %s | DEBUG | request timeout dst(%d) <-- src(%d) | ERROR |
| pSecServ %s | DEBUG | failed to take lock for compId: %d | ERROR |
| Making request from %d --> %d | DEBUG | umiIoctlArgsToBuf: failed to allocate memory | ERROR |
| sent request dst(%d) <-- src(%d) using option %d | DEBUG | umiRecvFrom: could not allocate memory | ERROR |
| received request too small!(%d bytes) | DEBUG | adpMalloc failed | ERROR |
| Received a UMI request from %d | DEBUG | context with ID: %d already registered | ERROR |
| sent a reply src(%d) ---> dst(%d) | DEBUG | Failed to allocate memory for creating UMI context | ERROR |
| umiRegister (%x,%x,%x,%x) | DEBUG | Failed to create recvSem for UMI context | ERROR |
| srcId=%d(%s) --> destId=%d(%s) cmd=%d inLen=%d outLen=%d | DEBUG | Failed to create mutex locks for UMI context | ERROR |
| waiting for reply...Giving Up | DEBUG | Failed to create mutex recvQLock for UMI context | ERROR |
| No request in the list after semTake | DEBUG | Invalid arguments to umiIoctl | ERROR |
| reply timeout | DEBUG | could not find the destination context | ERROR |

| | | | |
|---|---|---|---|
| timeout after semTake | DEBUG | memPartAlloc for %d size failed | ERROR |
| srcId=%d(%s) <-- destId=%d(%s) cmd=%d | DEBUG | memPartAlloc for %d size failed | ERROR |
| Un-registerting component with Id %d | DEBUG | No Handler registered for this UMI context | ERROR |
| failed to send ioctl request: dst(%d) <--- src(%d) | DEBUG | Couldn't find component with ID (%d)," | ERROR |
| processed a reply dst(%d) <-- src(%d) | DEBUG | id=%d handler=%x | ERROR |
| request with no result option dst(%d) <-- src(%d) | DEBUG | Received NULL buffer in umiBufToIoctlArgs() | ERROR |
| cmd = %s | DEBUG | usbMgmtInit: unable to open the database file %s | ERROR |
| cmdstring is %s %s:%d | DEBUG | call to printConfig failed | ERROR |
| Calling printerConfig binary ... | DEBUG | Failed to Disable Network Storage" | ERROR |
| Calling unmount for USB ... | DEBUG | Some error occurred while removing device | ERROR |
| Calling mount for USB ... | DEBUG | Some error occurred while removing device | ERROR |
| usbdevice is %d %s:%d | DEBUG | Sqlite update failed | ERROR |
| Query string: %s | DEBUG | Failed to enable printer properly | ERROR |
| sqlite3QueryResGet failed.Query:%s | DEBUG | Failed to mount device on system | ERROR |
| %s: 1. usb is already disconnected for old usb type. " | DEBUG | Failed to enable network storage device" | ERROR |
| %s: 2.call disable for new usb type ! | DEBUG | Failed to mount device on system | ERROR |
| %s: 3. usb is already disconnected for old usb type. " | DEBUG | Sqlite update failed | ERROR |
| %s: 4. Disabled old usb type . Now " | DEBUG | USB1 Touch failed | ERROR |
| usbdevice is %d %s:%d | DEBUG | USB2 Touch failed | ERROR |
| USB: failed to begin transaction: %s | DEBUG | Sqlite update failed | ERROR |
| USB: SQL error: %s pSetString = %s | DEBUG | Failed query: %s | ERROR |
| USB: failed to commit transaction: %s | DEBUG | Failed to execute usb database update handler | ERROR |
| USB: updated table: %s | DEBUG | Usage:%s <DBFile> <opType> <tblName> <rowId> | ERROR |
| USB: returning with status: %s | DEBUG | Illegal invocation of snmpConfig (%s) | ERROR |
| %s:DBUpdate event: Table: %s opCode:%d rowId:%d | DEBUG | Invalid Community Access Type | ERROR |
| executing %s status =%d | DEBUG | Invalid User Access Type | ERROR |
| executing %s | DEBUG | Invalid Security Level | ERROR |
| %s returned status=%d | DEBUG | Invalid Authentication Algorithm | ERROR |
| %s returned status=%d | DEBUG | Invalid Privacy Algorithm | ERROR |
| snmpd.conf not found | DEBUG | Invalid Argument | ERROR |
| [SNMP_DEBUG] : Fwrite Successful | DEBUG | Failed to allocate memory for engineID | ERROR |
| [SNMP_DEBUG] : Fwrite failed | DEBUG | [SNMP_DEBUG]: Failed to get host address | ERROR |
| radPairGen: received unknown attribute %d of length %d | WARN | [SNMP_DEBUG] : FOPEN failed | ERROR |
| radPairGen: %s has unknown type | WARN | sqlite3QueryResGet failed.Query:%s | ERROR |
| radPairLocate: unknown attribute %ld of length %d | WARN | sqlite3QueryResGet failed.Query:%s | ERROR |
| radPairLocate: %s has unknown type | WARN | Invalid Security Level | ERROR |
| Illegal invocation of cpuMemUsage (%s) | ERROR | Invalid Authentication Algorithm | ERROR |

| | | | |
|---|---|---|---|
| cpuMemUsageDBUpdateHandler: SQL error: %s | ERROR | Invalid Privacy Algorithm | ERROR |
| unable to open the DB file %s | ERROR | Failed to Get Host Address | ERROR |
| umiInit failed | ERROR | Invalid version | ERROR |
| unable to register to UMI | ERROR | snmp v3 Trap Configuration Failed | ERROR |
| Error Reading from the Database. | ERROR | sqlite3QueryResGet failed query:%s | ERROR |
| short DB update event request! | ERROR | sqlite3QueryResGet failed.Query:%s | ERROR |
| Error in executing DB update handler | ERROR | Failed to Open Snmp Configuration File | ERROR |
| adpListNodeRemove : Returned with an error | ERROR | Failed to write access control entries | ERROR |
| command too long. Try increasing " | ERROR | Failed to write snmpv3 users entries | ERROR |
| failed to allocate memory for CRON_NODE | ERROR | Failed to write snmp trap entries | ERROR |
| sqlite3QueryResGet failed | ERROR | Failed to write system entries. | ERROR |
| There was an error while reading the schedules. | ERROR | Failed to restart snmp | ERROR |
| unable to register to UMI | ERROR | %s failed with status | ERROR |
| short DB update event request! | ERROR | Error in executing DB update handler | ERROR |
| malloc(DB_UPDATE_NODE) failed | ERROR | %s: Unable to open file: %s | ERROR |
| short ifDev event request! | ERROR | RADVD start failed | ERROR |
| sqlite3_mprintf failed | ERROR | RADVD stop failed | ERROR |
| no component id matching %s | ERROR | failed to create/open RADVD configuration file %s | ERROR |
| umiIoctl (%s, UMI_CMD_DB_UPDATE(%d)) failed. | ERROR | Restoring old configuration.. | ERROR |
| sqlite3_mprintf failed | ERROR | failed to write/update RADVD configuration file | ERROR |
| sqlite3_mprintf failed | ERROR | upnpDisableFunc failed | ERROR |
| no component id matching %s | ERROR | upnpEnableFunc failed | ERROR |
| umiIoctl (%s, UMI_CMD_IFDEV_EVENT(%d)) failed. | ERROR | sqlite3QueryResGet failed.Query:%s | ERROR |
| klogctl(9) failed | ERROR | Error in executing DB update handler | ERROR |
| malloc failed for %d bytes | ERROR | unable to open the DB file %s | ERROR |
| klogctl(4) failed | ERROR | umiInit failed | ERROR |
| emailLogs: Invalid Number of Arguments!! Exiting. | ERROR | unable to register to UMI | ERROR |
| sqlite3QueryResGet failed | ERROR | short DB update event request! | ERROR |
| Could not execute the smtpClient. | ERROR | short ifDev event request! | ERROR |
| Error while cleaning the database.Exiting. %s | ERROR | sqlite3_mprintf failed | ERROR |
| | | %s failed. status=%d | ERROR |

## Facility: System (Firewall)

| Log Message | Severity | Log Message | Severity |
|---|---|---|---|
| Enabling rule for protocol binding. | DEBUG | Disable all NAT rules. | DEBUG |
| Disabling rule for protocol binding. | DEBUG | Enable all NAT rules. | DEBUG |
| Enabling Remote SNMP on WAN. | DEBUG | Enabling NAT URL filter rules. | DEBUG |
| Disabling Remote SNMP on WAN | DEBUG | Restarting all NAT rules. | DEBUG |

| | | | |
|---|---|---|---|
| wan traffic counters are restared | DEBUG | Deleting schedule based firewall rules. | DEBUG |
| Traffic limit has been reached | DEBUG | Deleting schedule based firewall rules from DB. | DEBUG |
| Traffic meter monthly limit has been changed to %d. | DEBUG | Update schedule based firewall rules in DB. | DEBUG |
| Enabling traffic meter for only dowload. | DEBUG | Restart schedule based firewall rules. | DEBUG |
| Enabling traffic meter for both directions. | DEBUG | inter vlan routing enabled | DEBUG |
| Enabling traffic meter with no limit. | DEBUG | inter vlan routing disabled | DEBUG |
| Email alert in traffic meter disabled. | DEBUG | Disabling Content Filter for %d | DEBUG |
| Email alert in traffic meter enabled. | DEBUG | Enabling Content Filter for %d | DEBUG |
| Traffic Meter:Monthly limit %d MB has been " | DEBUG | ./src/firewall/linux/user/firewalld.c:59:#undef ADP_DEBUG2 | DEBUG |
| Traffic Metering: Adding rule to drop all traffic | DEBUG | ./src/firewall/linux/user/firewalld.c:61:#define ADP_DEBUG2 printf | DEBUG |
| Traffic Metering: %sabling Email traffic | DEBUG | Enabling Source MAC Filtering | DEBUG |
| Disabling attack checks for IPv6 rules. | DEBUG | Disabling Source MAC Filtering | DEBUG |
| Enabling attack checks for IPv6 rules. | DEBUG | Adding MAC Filter Policy for Block & Permit Rest | DEBUG |
| Configuring one to one NAT settings with %s private start IP " | DEBUG | Adding MAC Filter Policy for Permit & Block Rest | DEBUG |
| Deleting forward one to one NAT having setting %s private start" | DEBUG | Restarting Source MAC Address Policy | DEBUG |
| Disabling attack check for Block ping to WAN interface. | DEBUG | Disabling Firewall Rule for DHCP Relay Protocol | DEBUG |
| Disabling attack check for Stealth mode for tcp | DEBUG | Enabling Firewall Rule for DHCP Relay Protocol | DEBUG |
| Disabling attack check for Stealth mode for udp | DEBUG | prerouting Firewall Rule add for Relay failed | DEBUG |
| Disabling attack check for TCP Flood. | DEBUG | prerouting Firewall Rule add for Relay failed | DEBUG |
| Disabling attack check for UDP Flood. | DEBUG | Deleting MAC Filter Policy for Address %s | DEBUG |
| Disabling attack check for IPsec. | DEBUG | Adding MAC Filter Policy for Address %s | DEBUG |
| Disabling attack check for PPTP. | DEBUG | Disabling Firewall Rules for DMZ host | DEBUG |
| Disabling attack check for L2TP. | DEBUG | Enabling Firewall Rules for DMZ host | DEBUG |
| Disabling attack check for UDP Flood. | DEBUG | Disabling Firewall Rules for Spill Over Load Balancing | DEBUG |
| Disabling attack check for IPsec. | DEBUG | Disabling Firewall Rules for Load Balancing | DEBUG |
| Disabling attack check for PPTP. | DEBUG | Enabling Firewall Rules for Load Balancing | DEBUG |
| Disabling attack check for L2TP. | DEBUG | Enabling Firewall Rules for Spill Over Load Balancing | DEBUG |
| Enabling attack check for Block ping to WAN " | DEBUG | Enabling Firewall Rules for Auto Failover | DEBUG |
| Enabling attack check for Stealth Mode for tcp. | DEBUG | Enabling Firewall Rules for Load Balancing . | DEBUG |
| Enabling attack check for Stealth Mode for udp. | DEBUG | Enabling Firewall Rules for Spill Over Load Balancing . | DEBUG |
| Enabling attack check for TCP Flood. | DEBUG | Enabling Firewall Rules for Auto Failover | DEBUG |
| Enabling attack check for UDP Flood. | DEBUG | Deleting BlockSites Keyword \ | DEBUG |
| Enabling attack check for IPsec. | DEBUG | Enabling BlockSites Keyword \ | DEBUG |
| Enabling attack check for PPTP. | DEBUG | Disabling BlockSites Keyword \ | DEBUG |

| | | | |
|---|---|---|---|
| Enabling attack check for L2TP. | DEBUG | Updating BlockSites Keyword from \ | DEBUG |
| Enabling attack check for UDP Flood. | DEBUG | Inserting BlockSites Keyword \ | DEBUG |
| Enabling attack check for IPsec. | DEBUG | Deleting Trusted Domain \ | DEBUG |
| Enabling attack check for PPTP. | DEBUG | Adding Trusted Domain \ | DEBUG |
| Enabling attack check for L2TP. | DEBUG | Restarting Schedule Based Firewall Rules | DEBUG |
| Enabling DoS attack check with %d SyncFlood detect rate, " | DEBUG | Enabling Remote SNMP | DEBUG |
| Disabling DoS attack check having %d SyncFlood detect rate," | DEBUG | Disabling Remote SNMP | DEBUG |
| Enabling ICSA Notification Item for ICMP notification. | DEBUG | Enabling Remote SNMP | DEBUG |
| Enabling ICSA Notification Item for Fragmented Packets. | DEBUG | Disabling DOS Attacks | DEBUG |
| Enabling ICSA Notification Item for Multi cast Packets. | DEBUG | Enabling DOS Attacks | DEBUG |
| Disabling ICSA Notification Item for ICMP notification. | DEBUG | Enabling DOS Attacks | DEBUG |
| Disabling ICSA Notification Item for Fragmented Packets. | DEBUG | Restarting Firewall [%d]:[%d] For %s | DEBUG |
| Disabling ICSA Notification Item for Multi cast Packets. | DEBUG | restartStatus = %d for LogicalIfName = %s | DEBUG |
| Adding IP/MAC binding rule for %s MAC address " | DEBUG | Deleting Lan Group %s | DEBUG |
| Deleting IP/MAC binding rule for %s MAC " | DEBUG | Adding Lan Group %s | DEBUG |
| ./src/firewall/linux/user/firewalld.c:60:#undef ADP_DEBUG | DEBUG | Deleting lan host %s from group %s | DEBUG |
| ./src/firewall/linux/user/firewalld.c:62:#define ADP_DEBUG  printf | DEBUG | Adding lan host %s from group %s | DEBUG |
| Restarting traffic meter with %d mins, %d hours, " | DEBUG | Disabling Firewall Rule for IGMP Protocol | DEBUG |
| Updating traffic meter with %d mins, %d hours, " | DEBUG | Enabling Firewall Rule for IGMP Protocol | DEBUG |
| Deleting traffic meter. | DEBUG | Deleting IP/MAC Bind Rule for MAC address %s and IP " | DEBUG |
| Disabling block traffic for traffic meter. | DEBUG | Adding IP/MAC Bind Rule for MAC address %s and IP | DEBUG |
| Enabling traffic meter. | DEBUG | Deleting Protocol Bind Rule for Service %s | DEBUG |
| Adding lan group %s. | DEBUG | Deleting Protocol Bind Rule for Service %s | DEBUG |
| Deleting lan group %s. | DEBUG | Deleting Protocol Bind Rule for Service %s | DEBUG |
| Renaming lan group from %s to %s. | DEBUG | Adding Protocol Bind Rule for Service %s | DEBUG |
| Deleting host %s from %s group. | DEBUG | %s Session Settings | DEBUG |
| Adding host %s to %s group. | DEBUG | Restarting IPv6 Firewall Rules... | DEBUG |
| Enabling Keyword blocking for %s keyword. | DEBUG | Deleting Port Trigger Rule for %d:%d:%d:%d:%d | DEBUG |
| Disabling keyword Blocking for %s keyword . | DEBUG | Deleting Port Trigger Rule for %d:%d:%d:%d:%d | DEBUG |
| Deleting trusted domain with keyword %s. | DEBUG | Enabling Port Trigger Rule for %d:%d:%d:%d:%d | DEBUG |
| Adding %s keyword to trusted domain. | DEBUG | Disabling Port Trigger Rule for %d:%d:%d:%d:%d | DEBUG |
| Enabling Management Access from | DEBUG | Enabling Port Trigger Rule for | DEBUG |

| | | | |
|---|---|---|---|
| Internet on port %d | | %d:%d:%d:%d:%d | |
| Enabling remote access management for IP address range" | DEBUG | Disabling Port Trigger Rule for %d:%d:%d:%d:%d | DEBUG |
| Enabling remote access management to only this PC. | DEBUG | Adding Port Trigger Rule for %d:%d:%d:%d:%d | DEBUG |
| Disabling Management Access from Internet on port %d | DEBUG | Enabling Content Filter | DEBUG |
| Disabling remote access management for IP address range" | DEBUG | Disabling Content Filter | DEBUG |
| Disabling remote access management only to this PC. | DEBUG | Enabling Content Filter | DEBUG |
| MAC Filtering %sabled for BLOCK and PERMIT REST. | DEBUG | Setting NAT mode for pLogicalIfName = %s | DEBUG |
| MAC Filtering %sabled for PERMIT and BLOCK REST. | DEBUG | Enabling DROP for INPUT | DEBUG |
| Enabling Content Filtering. | DEBUG | Enabling DROP for FORWARD | DEBUG |
| Disabling Content Filtering. | DEBUG | Enabling NAT based Firewall Rules | DEBUG |
| Deleting rule, port triggering for protocol TCP. | DEBUG | Setting transparent mode for pLogicalIfName \ | DEBUG |
| Deleting rule, port triggering for protocol UDP. | DEBUG | Enabling Accept for INPUT | DEBUG |
| Deleting rule, port triggering for protocol TCP. | DEBUG | Enabling Accept for FORWARD | DEBUG |
| Deleting rule, port triggering for protocol UDP. | DEBUG | Setting Routing mode for pLogicalIfName \ | DEBUG |
| Enabling rule, port triggering for protocol TCP. | DEBUG | Enabling DROP for INPUT | DEBUG |
| Enabling rule, port triggering for protocol UDP. | DEBUG | Enabling DROP for FORWARD | DEBUG |
| Enabling rule, port triggering for protocol TCP. | DEBUG | Disabling NAT based Firewall Rules | DEBUG |
| Enabling rule, port triggering for protocol UDP. | DEBUG | Enabling Firewall Rules for URL Filtering & " | DEBUG |
| Enabling DNS proxy. | DEBUG | Adding Firewall Rule for RIP Protocol | DEBUG |
| Restarting DNS proxy. | DEBUG | Restarting Schedule Based Firewall Rules | DEBUG |
| checking DNS proxy for Secure zone. | DEBUG | enabling IPS checks between %s and %s zones. | DEBUG |
| checking DNS proxy for Public zone. | DEBUG | disabling IPS checks between %s and %s zones. | DEBUG |
| Enabling Block traffic from %s zone. | DEBUG | Stopping IPS...%s | DEBUG |
| Configuring firewall session settings for " | DEBUG | IPS started. | DEBUG |
| Disabling DMZ | DEBUG | Route already exists | DEBUG |
| Disabling WAN-DMZ rules . | DEBUG | Route addition failed: Network Unreachable | DEBUG |
| Enabling WAN DMZ rules . | DEBUG | Route addition failed: Network is down | DEBUG |
| Restarting DMZ rule having %s address with %s address. | DEBUG | Route addition failed | DEBUG |
| Enabling LAN DHCP relay. | DEBUG | Failed to add rule in iptables | DEBUG |
| OneToOneNat configured successfully | DEBUG | Failed to delete rule from iptables | DEBUG |
| OneToOneNat configuration failed | DEBUG | fwLBSpillOverConfigure: Something going wrong here | ERROR |
| Deleting scheduled IPv6 rules. | DEBUG | fwLBSpillOverConfigure: unable to get interfaceName | ERROR |
| delete from FirewallRules6 where ScheduleName = '%s'. | DEBUG | fwLBSpillOverConfigure: Could not set PREROUTING rules | ERROR |

| | | | |
|---|---|---|---|
| Update FirewallRules6 where ScheduleName = '%s' to New '' | DEBUG | fwLBSpillOverConfigure: Could not set POSTROUTING rules | ERROR |
| Dns proxy Restart failed | DEBUG | fwLBSpillOverConfigure: Something going wrong Here | ERROR |
| deleting interface to ifgroup failed | DEBUG | fwL2TPGenericRules.c: unable to open the database file '' | ERROR |
| adding interface to ifgroup failed | DEBUG | fwL2TPGenericRules.c: inet_aton failed | ERROR |
| deleting interface pVirtIface %s from ifgroup %d'' | DEBUG | fwPPTPGenericRules.c: unable to open the database file '' | ERROR |
| adding interface pVirtIface %s to ifgroup %d failed | DEBUG | fwPPTPGenericRules.c: inet_aton failed | ERROR |
| Deleting IP address %s. | DEBUG | DNS proxy firewall rule add failed for %s | ERROR |
| Adding new IP address %s. | DEBUG | deleting interface %s from ifgroup %d failed | ERROR |
| Updating old IP address %s to new IP address %s. | DEBUG | adding interface %s to ifgroup %d failed | ERROR |
| Restarting Firewall For %s Address Update from %s:%s | DEBUG | nimfBridgeTblHandler: unable to get interfaceName | ERROR |
| Disabling Firewall Rule for MSS packet marking | DEBUG | nimfBridgeTblHandler: \ | ERROR |
| Enabling Firewall Rule for MSS packet marking | DEBUG | nimfBridgeTblHandler: unable to get \ | ERROR |
| Enabling packet marking rule for %s IDLE timer | DEBUG | Failed to %s traffic from %s to %s to IPS. | ERROR |
| Deleted firewall rule %s for service %s with action %s | DEBUG | Failed to %s traffic from %s to %s to IPS. | ERROR |
| %s firewall rule %s for service %s with action %s | DEBUG | failed to start IPS service. | ERROR |
| Added firewall rule %s for service %s with action %s | DEBUG | Timeout in waiting for IPS service to start. | ERROR |
| Deleting inbound(WAN-LAN) firewall rule. | DEBUG | Usage:%s <DBFile> <opType> <tblName> <rowId> '' | ERROR |
| Deleting inbound(WAN-DMZ) firewall rule. | DEBUG | xlr8NatConfig: illegal invocation of (%s) | ERROR |
| RIPng disabled. | DEBUG | Illegal invocation of [%s] | ERROR |
| RIPng enabled. | DEBUG | xlr8NatMgmtTblHandler: failed query: %s | ERROR |
| Disable IPv6 firewall rule. | DEBUG | Could not open file: %s | ERROR |
| Enable IPv6 firewall rule. | DEBUG | Rip Error Command Too Long | ERROR |
| Deleting IGMP proxy rule. | DEBUG | No authentication for Ripv1 | ERROR |
| Enable IGMP proxy rule. | DEBUG | Invalid Rip Direction | ERROR |
| Restarting IGMP rule. | DEBUG | Invalid Rip Version | ERROR |
| Traffic meter enabled with no limit type. | DEBUG | Invalid Password for 1st Key | ERROR |
| Traffic meter enabled for only download. | DEBUG | Invalid Time for 1st Key | ERROR |
| Traffic meter enabled for both directions. | DEBUG | Invalid Password for 2nd Key | ERROR |
| Deleted firewall rule %s for service %s with action %s | DEBUG | Invalid Time for 2nd Key | ERROR |
| %s firewall rule %s for service %s with action %s | DEBUG | Invalid First KeyId | ERROR |
| Added firewall rule %s for service %s with action %s | DEBUG | Invalid Second KeyId | ERROR |
| Enabling Inter VLAN routing. | DEBUG | Invalid Authentication Type | ERROR |
| Updating inter VLAN routing status. | DEBUG | ripDisable failed | ERROR |
| Deleting inter VLAN routing. | DEBUG | ripEnable failed | ERROR |

### Facility: Local0 (Wireless)

| Log Message | Severity | Log Message | Severity |
|---|---|---|---|
| (node=%s) setting %s to val = %d | DEBUG | sqlite3QueryResGet failed | ERROR |
| Custom wireless event: '%s' | DEBUG | sqlite3QueryResGet failed | ERROR |
| Wireless event: cmd=0x%x len=%d | DEBUG | VAP(%s) set beacon interval failed | ERROR |
| New Rogue AP (%02x:%02x:%02x:%02x:%02x:%02x) detected | DEBUG | VAP(%s) set DTIM interval failed | ERROR |
| WPS session in progress, ignoring enrolle assoc request | DEBUG | VAP(%s) set RTS Threshold failed | ERROR |
| ran query %s | DEBUG | VAP(%s) set Fragmentation Threshold failed | ERROR |
| DBUpdate event: Table: %s opCode:%d rowId:%d | DEBUG | VAP(%s) set Protection Mode failed | ERROR |
| %sing VAPs using profile %s | DEBUG | VAP(%s) set Tx Power failed | ERROR |
| %sing VAP %s | DEBUG | WDS Profile %s not found | ERROR |
| ran query %s | DEBUG | Failed to initalize WPS on %s | ERROR |
| %sing VAP instance %s | DEBUG | failed to get profile %s | ERROR |
| VAP(%s) set Short Preamble failed | DEBUG | could not initialize MGMT framework | ERROR |
| VAP(%s) set Short Retry failed | DEBUG | could not initialize MGMT framework | ERROR |
| VAP(%s) set Long Retry failed | DEBUG | dot11VapBssidUpdt SQL error: %s | ERROR |
| Decrypting context with key %s | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| Unknown IAPP command %d received. | DEBUG | KDOT11_GET_PARAM(IEEE80211_IOC_CHANNEL) failed | ERROR |
| unexpected reply from %d cmd=%d ! | DEBUG | Failed to get the channel setting for %s | ERROR |
| unexpected reply from %d cmd=%d ! | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| Recvied DOT11_EAPOL_KEYMSG | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| shutting down AP:%s | DEBUG | profile %s not found | ERROR |
| APCtx Found | DEBUG | sqlite3QueryResGet failed.Query:%s | ERROR |
| APCtx Not-Found | DEBUG | Interface name and policy must be specified | ERROR |
| node not found *:*:*:%x:%x:%x | DEBUG | Interface name and policy must be specified | ERROR |
| error installing unicast key for %s | DEBUG | invalid ACL type %d | ERROR |
| cmd =%d i_type =%d i_val=%d | DEBUG | interface name not specified | ERROR |
| join event for new node %s | DEBUG | interface name not specified | ERROR |
| wpa/rsn IE id %d/%d not supported | DEBUG | Invalid interface - %s specified | ERROR |
| wpa IE id %d not supported | DEBUG | buffer length not specified | ERROR |
| leave event for node %s | DEBUG | Invalid length(%d) specified | ERROR |
| NodeFree request for node : %s | DEBUG | failed created iappdLock | ERROR |
| installing key to index %d | DEBUG | failed to create cipher contexts. | ERROR |
| iReq.i_val : %d | DEBUG | unable to register to UMI | ERROR |
| pIfName : %s | DEBUG | iappSockInit() failed | ERROR |
| iReq.i_val : %d | DEBUG | iappInit got error, unregistering it with UMI | ERROR |
| setting mode: %d | DEBUG | umiIoctl(UMI_COMP_UDOT11,%d,%d) failed | ERROR |
| Global counter wrapped, re-generating... | DEBUG | umiIoctl(UMI_COMP_KDOT11,%d,%d) failed | ERROR |

| | | | |
|---|---|---|---|
| Got PNAC_EVENT_PREAUTH_SUCCESS event for : %s | DEBUG | UDP failed, received Length is %d | ERROR |
| event for non-existent node %s | DEBUG | umiIoctl(UMI_COMP_KDOT11, | ERROR |
| PNAC_EVENT_EAPOL_START event received | DEBUG | umiIoctl(UMI_COMP_UDOT11,%d,%d ) \ | ERROR |
| PNAC_EVENT_EAPOL_LOGOFF event received | DEBUG | umiIoctl(UMI_COMP_KDOT11,%d,%d ) \ | ERROR |
| PNAC_EVENT_REAUTH event received | DEBUG | No IAPP Node found for req id %d | ERROR |
| PNAC_EVENT_AUTH_SUCCESS event received | DEBUG | umiIoctl(UMI_COMP_UDOT11,%d,%d ) \ | ERROR |
| PNAC_EVENT_PORT_STATUS_CHANGED event received | DEBUG | umiIoctl(UMI_COMP_KDOT11,%d,%d ) \ | ERROR |
| unsupported event %d from PNAC | DEBUG | umiIoctl(UMI_COMP_UDOT11,%d,%d ) failed | ERROR |
| event for non-existent node %s. Create new node. | DEBUG | UDP socket is not created | ERROR |
| Add new node to DOT11 Node list | DEBUG | UDP send failed | ERROR |
| Update dot11STA database | DEBUG | IAPP: socket (SOCK_STREAM) failed. | ERROR |
| Add PMKSA to the list | DEBUG | IAPP: TCP connect failed to %s. | ERROR |
| eapolRecvAuthKeyMsg: received key message | DEBUG | cmd %d not supported.sender=%d | ERROR |
| node not found | DEBUG | umiIoctl(UMI_COMP_KDOT11,%d,%d ) failed | ERROR |
| eapolRecvKeyMsg: replay counter not incremented | DEBUG | IAPP-CACHE-NOTIFY-REQUEST send to | ERROR |
| eapolRecvKeyMsg: replay counter is not same | DEBUG | ./src/dot11/iapp/iappLib.c:1314: ADP_ERROR ( | ERROR |
| processing pairwise key message 2 | DEBUG | BSSID value passed is NULL | ERROR |
| RSN IE matching: OK | DEBUG | reserved requestId is passed | ERROR |
| processing pairwise key message 4 | DEBUG | interface name is NULL | ERROR |
| processing group key message 2 | DEBUG | IP address value passed is NULL | ERROR |
| processing key request message from client | DEBUG | opening receive UDP socket failed | ERROR |
| WPA version %2x %2x not supported | DEBUG | enabling broadcast for UDP socket failed | ERROR |
| (%s) group cipher %2x doesn't match | DEBUG | opening receive TCP socket for new AP failed | ERROR |
| (%s)Pairwise cipher %s not supported | DEBUG | ./src/dot11/iapp/iappLib.c:1784: ADP_ERROR( | ERROR |
| (%s) authentication method %d not supported | DEBUG | ./src/dot11/iapp/iappLib.c:1794: ADP_ERROR( | ERROR |
| %s:Auth method=%s pairwise cipher=%s IE size=%d | DEBUG | ./src/dot11/iapp/iappLib.c:1803: ADP_ERROR( | ERROR |
| WPA version %2x %2x not supported | DEBUG | failed created dot11dLock. | ERROR |
| Unable to obtain IE of type %d | DEBUG | failed initialize profile library. | ERROR |
| PTK state changed from %s to %s | DEBUG | failed to create cipher contexts. | ERROR |
| using PMKSA from cache | DEBUG | unable to register to UMI | ERROR |
| PTK GK state changed from %s to %s | DEBUG | could not create MIB tree | ERROR |
| GK state changed from %s to %s | DEBUG | unable to register to PNAC | ERROR |
| Sending PTK Msg1 | DEBUG | Max registration attempts by DOT11 to PNAC exceeded | ERROR |
| Sending PTK Msg3 | DEBUG | Creation of EAP WPS Profile Failed | ERROR |
| Sending GTK Msg1 | DEBUG | umiIoctl(UMI_COMP_IAPP,%d ) failed | ERROR |

| | | | |
|---|---|---|---|
| sending EAPOL pdu to PNAC... | DEBUG | DOT11_RX_EAPOL_KEYMSG: unknown ifname %s | ERROR |
| creating pnac authenticator with values %d %d - %s | DEBUG | cmd %d not supported.sender=%d | ERROR |
| Profile %s does not exist | DEBUG | inteface name passed is NULL | ERROR |
| IAPP initialized. | DEBUG | BSSID passed is NULL | ERROR |
| Encrypting context key=%s for | DEBUG | inteface name passed is NULL | ERROR |
| could not find access point context for %s | DEBUG | unable to allocate memory for DOT11_CTX | ERROR |
| join event for existing node %s | DEBUG | unable to install wme mapping on %s | ERROR |
| failed to send PNAC_FORCE_AUTHORIZED " | DEBUG | unable to get %s mac address | ERROR |
| failed to send PNAC_AUTHORIZED " | DEBUG | Failed to set %s SSID | ERROR |
| failed to send PNAC_VAR_KEY_AVAILABLE (TRUE) " | DEBUG | Failed to set SSID broadcast status | ERROR |
| failed to send PNAC_VAR_KEY_TX_EN (TRUE) " | DEBUG | Failed to set PreAuth mode | ERROR |
| failed to send PNAC_VAR_KEY_TX_EN (FALSE) " | DEBUG | unable to install key | ERROR |
| failed to send PNAC_FORCE_AUTHORIZED " | DEBUG | KDOT11_SET_PARAM:IEEE80211_IOC_AUTHMODE failed | ERROR |
| failed to send PNAC_AUTHORIZED " | DEBUG | KDOT11_SET_PARAM:IEEE80211_IOC_PRIVACY failed | ERROR |
| mic verification: OK | DEBUG | wpaInit failed | ERROR |
| pnacIfConfig: Invalid supplicant" | DEBUG | dot11InstallProfile: unable to get interface index | ERROR |
| Failed to process user request | DEBUG | adpHmacInit(%s) failed | ERROR |
| Failed to process user request - %s(%d) | DEBUG | interface %s not found | ERROR |
| pnacIfConfigUmiIoctl: umiIoctl failed | DEBUG | AP not found on %s | ERROR |
| pnacIfConfigUmiIoctl: usrPnac returned %d | DEBUG | keyLen > PNAC_KEY_MAX_SIZE | ERROR |
| pnacIfConfigUmiIoctl: usrPnac returned %d | DEBUG | Invalid profile name passed | ERROR |
| pnacIfConfigUmiIoctl: usrPnac returned %d | DEBUG | Creation of WPS EAP Profile failed | ERROR |
| pnacKernNotifier: invalid PAE configuration " | DEBUG | unsupported command %d | ERROR |
| From pnacEapDemoAuthRecv: unsupported response " | DEBUG | device %s not found | ERROR |
| From pnacEapDemoAuthRecv: invalid codes received | DEBUG | unsupported command %d | ERROR |
| From pnacRadXlateDemoRecv: received unknown " | DEBUG | dot11NodeAlloc failed | ERROR |
| From pnacRadXlateDemoRecv: invalid codes received | DEBUG | Getting WPA IE failed for %s | ERROR |
| Error from pnacRadXlateDemoRecv: malloc failed | DEBUG | Getting WPS IE failed for %s | ERROR |
| From pnacRadXlateRadPktHandle: received a non-supported" | DEBUG | Failed initialize authenticator for node %s | ERROR |
| Only md5 authentication scheme currently supported. " | DEBUG | Failed to get the system up time while adding node %s | ERROR |
| Message from authenticator: | DEBUG | error creating PNAC port for node %s | ERROR |
| from pnacPDUXmit: bufsize = %d, pktType = %d," | DEBUG | dot11NodeAlloc failed | ERROR |
| pnacPDUXmit: sending eap packet. code = %d, " | DEBUG | Invalid arguments. | ERROR |

| | | | |
|---|---|---|---|
| pnacRecvRtn: no corresponding pnac port pae found | DEBUG | umiIoctl(UMI_COMP_IAPP,%d) failed | ERROR |
| sending unicast key | DEBUG | Invalid IE. | ERROR |
| sending broadcast key | DEBUG | umiIoctl(UMI_COMP_KDOT11_VAP, %d ) failed | ERROR |
| from pnacAuthPAEDisconnected: calling pnacTxCannedFail | DEBUG | umiIoctl(UMI_COMP_KDOT11,%d ,%d) failed | ERROR |
| from pnacAuthPAEForceUnauth: calling pnacTxCannedFail | DEBUG | KDOT11_SET_PARAM:IEEE80211_IOC_WME_CWMIN failed | ERROR |
| state changed from %s to %s | DEBUG | KDOT11_SET_PARAM:IEEE80211_IOC_WME_CWMAX failed | ERROR |
| PNAC user comp id not set. dropping event %d | DEBUG | KDOT11_SET_PARAM:IEEE80211_IOC_WME_AIFS failed | ERROR |
| sending event %d to %d | DEBUG | KDOT11_SET_PARAM:80211_IOC_WME_TXOPLIMIT failed | ERROR |
| requesting keys informantion from %d | DEBUG | KDOT11_SET_PARAM:IEEE80211_IOC_WME_ACM failed | ERROR |
| pnacUmiPortPaeParamSet: error in getting port pae | DEBUG | KDOT11_SET_PARAM:IEEE80211_IOC_WME failed | ERROR |
| pnacUmiPortPaeParamSet: invalid param - %d | DEBUG | invalid group cipher %d | ERROR |
| pnacRecvASInfoMessage: Skey of length %d set | DEBUG | KDOT11_SET_PARAM:IEEE80211_IOC_MCASTCIPHER failed | ERROR |
| pnacRecvASInfoMessage: reAuthPeriod set to: %d | DEBUG | KDOT11_SET_PARAM:IEEE80211_IOC_MCASTKEYLEN failed | ERROR |
| pnacRecvASInfoMessage: suppTimeout set to: %d | DEBUG | KDOT11_SET_PARAM:IEEE80211_IOC_UCASTCIPHERS failed | ERROR |
| PORT SUCCESSFULLY DESTROYED | DEBUG | KDOT11_SET_PARAM:IEEE80211_IOC_KEYMGTALGS failed | ERROR |
| creating physical port for %s | DEBUG | KDOT11_SET_PARAM:IEEE80211_IOC_WPA failed | ERROR |
| pnacAuthInit: using defualt pnacAuthParams | DEBUG | unknow cipher type = %d | ERROR |
| pnacSuppInit: using defualt pnacSuppParams | DEBUG | umiIoctl(UMI_COMP_IAPP,%d) failed | ERROR |
| Error from pnacCombinedStMachTriggerFunc: " | DEBUG | invalid media value=%d | ERROR |
| Error from pnacCombinedStMachTriggerFunc: " | DEBUG | invalid mediaOpt value=%d | ERROR |
| Error from pnacCombinedStMachTriggerFunc: " | DEBUG | invalid mode value=%d | ERROR |
| Error from pnacCombinedStMachTriggerFunc: " | DEBUG | dot11PnacIfCreate failed | ERROR |
| Error from pnacCombinedStMachTriggerFunc: " | DEBUG | wpaPRF failed | ERROR |
| Error from pnacCombinedStMachTriggerFunc: " | DEBUG | Error generating global key counter | ERROR |
| Error from pnacCombinedStMachTriggerFunc: " | DEBUG | wpaCalcMic: unsupported key descriptor version | ERROR |
| Error from pnacCombinedStMachTriggerFunc: " | DEBUG | integrity failed. need to stop all stations " | ERROR |
| Error from pnacCombinedStMachTriggerFunc: " | DEBUG | couldn't find AP context for %s interface | ERROR |
| received a pdu on %s | DEBUG | dot11Malloc failed | ERROR |
| pnacRecvMapi: protoType: %04x pPhyPort->authToASSendRtn:%p | DEBUG | dot11Malloc failed | ERROR |
| port not found | DEBUG | eapolRecvKeyMsg: unknown descType =%d | ERROR |

| | | | |
|---|---|---|---|
| from pnacRecvMapi: pkt body len = %d, pktType = %d | DEBUG | eapolRecvKeyMsg: invalid descriptor version | ERROR |
| from pnacPDUProcess: received PNAC_EAP_PACKET | DEBUG | eapolRecvKeyMsg: incorrect descriptor version | ERROR |
| from pnacPDUProcess: currentId = %d | DEBUG | eapolRecvKeyMsg: Ack must not be set | ERROR |
| from pnacPDUProcess: code = %d, identifier = %d, '' | DEBUG | eapolRecvKeyMsg: MIC bit must be set | ERROR |
| from pnacPDUProcess: setting rxResp true | DEBUG | wpaAuthRecvPTKMsg2: unexpected packet received | ERROR |
| from pnacPDUProcess: code = %d, identifier = %d, '' | DEBUG | wpaAuthRecvPTKMsg2: mic check failed | ERROR |
| from pnacPDUProcess: received '' | DEBUG | wpaAuthRecvPTKMsg2: rsn ie mismatch | ERROR |
| from pnacPDUProcess: received '' | DEBUG | wpaAuthRecvPTKMsg4: unexpected packet received | ERROR |
| from pnacPDUProcess: received PNAC_EAPOL_KEY_PACKET | DEBUG | wpaAuthRecvPTKMsg4: keyDataLength not zero | ERROR |
| doing pnacTxCannedFail | DEBUG | wpaAuthRecvPTKMsg4: mic check failed | ERROR |
| doing pnacTxCannedSuccess | DEBUG | wpaAuthRecvGTKMsg2: unexpected packet received | ERROR |
| doing pnacTxReqId | DEBUG | secureBit not set in GTK Msg2 | ERROR |
| doing pnacTxReq | DEBUG | wpaAuthRecvGTKMsg2: keyDataLength not zero | ERROR |
| doing pnacTxStart | DEBUG | wpaAuthRecvGTKMsg2: mic check failed | ERROR |
| doing pnacTxLogoff | DEBUG | wpaAuthRecvKeyReq: unexpected packet received | ERROR |
| doing pnacTxRspId: 1st cond | DEBUG | wpaAuthRecvKeyReq: keyDataLength not zero | ERROR |
| doing pnacTxRspId: entering 2nd cond | DEBUG | wpaAuthRecvKeyReq: mic check failed | ERROR |
| from pnacTxRspId: code = %d, identifier = %d, length = %d, '' | DEBUG | invalid OUI %x %x %x | ERROR |
| doing pnacTxRspId: 2nd cond | DEBUG | (%s) invalid OUI %x %x %x | ERROR |
| doing pnacTxRspAuth: 1st cond | DEBUG | [%s:%d] Cipher in WPA IE : %x | ERROR |
| doing pnacTxRspAuth: 2nd cond | DEBUG | (%s) invalid OUI %x %x %x | ERROR |
| message for unknown port PAE | DEBUG | short WPA IE (length = %d) received | ERROR |
| from pnacACToSuppRecvRtn: calling pnacEapPktRecord | DEBUG | PTK state machine in unknown state. | ERROR |
| from pnacEapPktRecord: code = %d, identifier = %d, '' | DEBUG | dot11InstallKeys failed | ERROR |
| from pnacEapPktRecord: received success pkt | DEBUG | group state machine entered into WPA_AUTH_GTK_INIT | ERROR |
| from pnacEapPktRecord: received failure pkt | DEBUG | dot11Malloc failed | ERROR |
| from pnacEapPktRecord: received request pkt | DEBUG | dot11Malloc failed | ERROR |
| unknown EAP-code %d | DEBUG | dot11Malloc failed | ERROR |
| Authenticator[%d]: | DEBUG | aesWrap failed | ERROR |
| Auth PAE state = %s | DEBUG | unknown key descriptor version %d | ERROR |
| Auth Reauth state = %s | DEBUG | dot11Malloc failed | ERROR |
| Back auth state = %s | DEBUG | could not initialize AES128ECB | ERROR |
| Supplicant[%d]: | DEBUG | could not initialize AES-128-ECB | ERROR |
| Supp Pae state = %s | DEBUG | MD5 initialization failed | ERROR |

| | | | |
|---|---|---|---|
| from pnacBackAuthFail: calling pnacTxCannedFail | DEBUG | RC4 framework initialization failed | ERROR |
| %s returned ERROR | DEBUG | PNAC framework initialization failed | ERROR |
| pnacUmiIoctlHandler: cmd: %s(%d) | DEBUG | ERROR: option value not specified | ERROR |
| %s not configured for 802.1x | DEBUG | ERROR: -u can be used only with -s | ERROR |
| could not process PDU received from the wire | DEBUG | ERROR: user-name not specified | ERROR |
| pnacPDUForward: failed to foward the received PDU | DEBUG | failed to enable debug | ERROR |
| Creating PHY port with AUTH backend : %s SendRtn: %p RecvRtn:%p | DEBUG | [%s]: failed to convert string to MAC " | ERROR |
| pnacUmiAuthConfig: %s not configured for 802.1x | DEBUG | failed to initialize UMI | ERROR |
| pnacSuppRegisterUserInfo: not a valid AC | DEBUG | pnacPhyPortParamSet:invalid arguments | ERROR |
| pnacIfConfig: autoAuth Enabled | DEBUG | pnacPhyPortParamSet:Failed to create socket | ERROR |
| pnacSendRtn: no pnac port pae found for " | DEBUG | Error from pnacPhyPortParamSet:%s-device invalid | ERROR |
| sending portStatus: %s[%d] to dot11 | DEBUG | Error from pnacPhyPortParamSet:%s-Getting MAC address " | ERROR |
| pnacRecvASInfoMessage: Rkey of length %d set | DEBUG | pnacPhyPortParamSet:Failed to add 802.1X multicast " | ERROR |
| ASSendRtn: %p ASToAuthRecv: %p | DEBUG | pnacIsInterfaceUp: failed to create a raw socket | ERROR |
| adpRand failed:unable to generate random unicast key | WARN | pnacIsInterfaceUp: failed to get interface flags | ERROR |
| using group key as unicast key | WARN | failed to allocate buffer | ERROR |
| Integrity check failed more than once in last 60 secs. | WARN | UMI initialization failed | ERROR |
| MIC failed twice in last 60 secs, taking countermeasures | WARN | UMI initialization failed | ERROR |
| Failed to set dot11 port status | WARN | Error from pnacEapDemoAuthLibInit: malloc failed | ERROR |
| PTK state machine in NO_STATE. | WARN | Error from pnacEapDemoAuthRecv: received null EAP pkt | ERROR |
| PTK state machine in NO_STATE!! | WARN | Error from pnacEapDemoAuthRecv: send " | ERROR |
| PMKSA refcount not 1 | WARN | Error from pnacRadXlateASAdd: cannot open socket | ERROR |
| IV verification failednknown subtype> | WARN | Error from pnacRadXlateDemoRecv: received null EAP pkt | ERROR |
| pnacIfConfig: overwriting previous interface " | WARN | From pnacRadXlateDemoRecv: send " | ERROR |
| pnacIfConfig: overwriting previous " | WARN | Error from pnacRadXlateDemoRecv: radius " | ERROR |
| pnacIfConfig: overwriting previous username" | WARN | Error from pnacRadXlateDemoRecv: radius " | ERROR |
| pnacIfConfig: overwriting previous password" | WARN | Error from pnacRadXlateRadIdRespSend: send to failed | ERROR |
| %s: Failed to set port status | WARN | Error from pnacRadXlateRadNonIdRespSend: send to failed | ERROR |
| %s: Failed to notify event to dot11 | WARN | Error from pnacRadXlateRadRecvProc: recvfrom failed | ERROR |
| pnacLibDeinit: Failed to destroy the | WARN | From | ERROR |

| | | | |
|---|---|---|---|
| phyPort:%s | | pnacRadXlateRadPktIntegrityChk: no corresponding " | |
| pnacPortPaeDeconfig:kpnacPortPaeDeconfig failed | WARN | Error from pnacRadXlateRadPktIntegrityChk: no message " | ERROR |
| pnacPortPaeDeconfig:kpnacPortPaeDeconfig failed | WARN | Error from pnacRadXlateRadPktIntegrityChk: " | ERROR |
| pnacBackAuthSuccess: failed to notify the destination " | WARN | From pnacRadXlateRadChalPktHandle: no encapsulated eap " | ERROR |
| could not initialize MGMT framework | ERROR | Error from pnacRadXlateRadChalPktHandle: malloc for eap " | ERROR |
| umiInit failed | ERROR | Error from pnacEapDemoSuppUserInfoRegister: invalid " | ERROR |
| iappInit failed | ERROR | Error from pnacEapDemoSuppRecv: received null EAP pkt | ERROR |
| could not initialize IAPP MGMT. | ERROR | Error from pnacEapDemoSuppRecv: send ptr to pnac supplicant" | ERROR |
| dot11Malloc failed | ERROR | From pnacEapDemoSuppRecv: user info not entered yet | ERROR |
| buffer length not specified | ERROR | Error from pnacEapDemoSuppRecv: couldn't " | ERROR |
| Invalid length(%d) specified | ERROR | MDString: adpDigestInit for md5 failed | ERROR |
| Failed to get information about authorized AP list. | ERROR | pnacUmiInit: UMI initialization failed | ERROR |
| Recd IE data for non-existent AP %s | ERROR | could not start PNAC task | ERROR |
| Recd IE data for wrong AP %s | ERROR | invalid aruments | ERROR |
| Received Invalid IE data from WSC | ERROR | pnacIfNameToIndex failed | ERROR |
| Recd IE data for non-existent AP %s | ERROR | pnacPhyPortParamSet: device invalid %s%d | ERROR |
| Recd WSC Start command without interface name | ERROR | pnacPhyPortParamSet: EIOCGADDR ioctl failed | ERROR |
| Recd WSC start for non-existent AP %s | ERROR | pnacPhyPortParamSet: multicast addr add ioctl failed | ERROR |
| Recd WSC start for wrong AP %s | ERROR | pnacPhyPortParamUnset: multicast addr del ioctl failed | ERROR |
| Unable to send WSC_WLAN_CMD_PORT to WSC | ERROR | pnacPDUXmit: Invalid arguments | ERROR |
| Failed to get the ap context for %s | ERROR | pnacPDUXmit: failed to get M_BLK_ID | ERROR |
| WPS can only be applied to WPA/WPA2 security profiles | ERROR | from pnacIsInterfaceUp: device %s%d invalid | ERROR |
| wpsEnable: running wsccmd failed | ERROR | pnacRecvRtn: dropping received packet as port is" | ERROR |
| Failed to get the ap context for %s | ERROR | pnacSendRtn: Invalid arguments | ERROR |
| WPS conf. under non WPA/WPA2 security setting | ERROR | pnacSendRtn: no physical port corresponding to" | ERROR |
| Failed to reset the Beacon Frame IE in the driver | ERROR | pnacSendRtn: dropping packet as port" | ERROR |
| Failed to reset the Beacon Frame IE in the driver | ERROR | pnacAuthBuildRC4KeyDesc: adpEncryptInit(RC4) failed | ERROR |
| WPS method cannot be NULL | ERROR | pnacAuthBuildRC4KeyDesc: adpCipherContextCtrl" | ERROR |
| PIN value length should be a multiple of 4 !! | ERROR | pnacDot11UserSet: incorrect buffer length | ERROR |
| Failed to initiate PIN based association, PIN = %s | ERROR | PNAC user component id not set. | ERROR |

| | | | |
|---|---|---|---|
| Failed to initiate PBC based enrolle association | ERROR | pnacKeyInfoGet:failed to allocate buffer | ERROR |
| Invalid association mode. (Allowed modes : PIN/PBC) | ERROR | PNAC user comp id not set. dropping EAPOL key pkt | ERROR |
| wpsEnable: running wsccmd failed | ERROR | pnacUmiPortPaeParamSet: invalid buffer received | ERROR |
| Failed to send QUIT command to WSC from DOT11 | ERROR | Error from pnacRecvASInfoMessage: " | ERROR |
| Failed to clear off the WPS process | ERROR | pnacRecvASInfoMessage: " | ERROR |
| missing profile name | ERROR | pnacRecvASInfoMessage: Bad info length | ERROR |
| A profile exists with the same name | ERROR | Error from pnacLibInit: malloc failed | ERROR |
| Error in allocating memory for profile | ERROR | could not create phy ports lock | ERROR |
| missing profile name | ERROR | could not create nodes ports lock | ERROR |
| missing profile name | ERROR | port exists for iface - %s | ERROR |
| Profile name and interface name must be specified | ERROR | pnacPhyPortCreate failed | ERROR |
| Profile %s does not exist | ERROR | kpnacPhyPortCreate failed | ERROR |
| Could not set profile %s on the interface %s | ERROR | invalid argument | ERROR |
| missing profile name | ERROR | pnacAuthConfig: maxAuth limit reached | ERROR |
| Profile %s does not exist | ERROR | pnacAuthConfig: malloc failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacAuthConfig: pAsArg cannot be NULL | ERROR |
| SSID should not be longer than %d | ERROR | Error from pnacAuthConfig: receive routine hook " | ERROR |
| Profile %s does not exist | ERROR | pnacAuthConfig: pnacAuthInit failed | ERROR |
| Profile %s does not exist | ERROR | kpnacPortPaeConfig failed | ERROR |
| Profile %s does not exist | ERROR | Invalid arguments | ERROR |
| Profile %s does not exist | ERROR | Error from pnacSuppConfig: malloc failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacSuppConfig: receive routine hook " | ERROR |
| Profile %s does not exist | ERROR | Error from pnacSuppConfig: pnacSuppInit failed | ERROR |
| SSID not set. SSID is needed to generate password hash | ERROR | kpnacPortPaeConfig failed | ERROR |
| Password string too big | ERROR | pnacAuthDeconfig failed: pPortPae NULL | ERROR |
| dot11Malloc failed | ERROR | Error from pnacPhyPortDestroy: port not configured | ERROR |
| Profile %s does not exist | ERROR | pnacPhyPortDestroy: Failed to deconfigure port | ERROR |
| Hex string should only have %d hex chars | ERROR | pnacPhyPortParamUnset FAILED | ERROR |
| dot11Malloc failed | ERROR | Error from pnacPhyPortCreate: malloc failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacPhyPortCreate: pnacPhyPortParamSet" | ERROR |
| invalid key index %d. key index should be 0-3. | ERROR | error from pnacPhyPortCreate: malloc failed | ERROR |
| wepKey length incorrect | ERROR | Error from pnacAuthInit: pnacPortTimersInit failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacAuthInit: pnacAuthPAEInit failed | ERROR |

| | | | |
|---|---|---|---|
| Invalid Cipher type %d | ERROR | Error from pnacAuthInit: pnacAuthKeyTxInit failed | ERROR |
| Profile supports WEP stas,Group cipher must be WEP | ERROR | Error from pnacAuthInit: pnacReauthTimerInit failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacAuthInit: pnacBackAuthInit failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacAuthInit: pnacCtrlDirInit failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacAuthInit: pnacKeyRecvInit failed | ERROR |
| invalid pairwise cipher type %d | ERROR | Error from pnacSuppInit: malloc failed | ERROR |
| Cipher %s is already in the list. | ERROR | Error from pnacSuppInit: pnacPortTimersInit failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacSuppInit: pnacKeyRecvInit failed | ERROR |
| Invalid Cipher type %d | ERROR | Error from pnacSuppInit: pnacSuppKeyTxInit failed | ERROR |
| Cipher %s not found in the list. | ERROR | Error from pnacSuppInit: pnacSuppPAEInit failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacRecvRtn: invalid arguments | ERROR |
| Profile %s does not exist | ERROR | Error from pnacRecvMapi: unsupported PDU received | ERROR |
| Auth method %s is already in the list | ERROR | suppToACSendRtn returned not OK! | ERROR |
| Profile %s does not exist | ERROR | Error from pnacBasicPktCreate: malloc failed | ERROR |
| Auth method %s not found in the list. | ERROR | Error from pnacEAPPktCreate: basic pkt create failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacTxCannedFail: eap pkt create failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacTxCannedSuccess: eap pkt create failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacTxReqId: eap pkt create failed | ERROR |
| invalid type value %d. supported values are 1,2,3,4 | ERROR | Error from pnacTxReq: eap pkt create failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacSendRespToServer: malloc failed | ERROR |
| invalid type value %d. supported values are 1,2,3,4 | ERROR | Error from pnacSendRespToServer: no AS configured | ERROR |
| Profile %s does not exist | ERROR | Error from pnacTxStart: basic pkt create failed | ERROR |
| invalid type value %d. supported values are 1,2,3,4 | ERROR | Error from pnacTxStart: basic pkt create failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacTxRspId: eap pkt create failed | ERROR |
| invalid type value %d. supported values are 1,2,3,4 | ERROR | Error from pnacTxRspAuth: eap pkt create failed | ERROR |
| Profile %s does not exist | ERROR | Error from pnacEapPktRecord: EAP packet too" | ERROR |
| invalid type value %d. supported values are 1,2,3,4 | ERROR | Error from pnacEapPktRecord: " | ERROR |
| Profile %s does not exist | ERROR | from pnacBackAuthTimeout: calling pnacTxCannedFail | ERROR |
| ERROR: incomplete DB update information. | ERROR | hmac_md5: adpHmacContextCreate failed | ERROR |
| old values result does not contain 2 rows | ERROR | hmac_md5:adpHmacInit failed | ERROR |
| sqlite3QueryResGet failed | ERROR | pnacUmiIoctlHandler: invalid cmd: %d | ERROR |

| | | | |
|---|---|---|---|
| Error in executing DB update handler | ERROR | pnacEapRadAuthSend: Invalid arguments | ERROR |
| sqlite3QueryResGet failed | ERROR | pnacEapRadAuthSend: failed to allocate inbuffer | ERROR |
| ERROR: incomplete DB update information. | ERROR | pnacXmit : umiIoctl failed[%d] | ERROR |
| old values result does not contain 2 rows | ERROR | pnacPDUForward: Invalid input | ERROR |
| sqlite3QueryResGet failed | ERROR | pnacPDUForward: error in getting port pae information | ERROR |
| Error in executing DB update handler | ERROR | pnacPDUForward: error allocating memory | ERROR |
| sqlite3QueryResGet failed.Query:%s | ERROR | pnacUmiIfMacAddrChange: %s not configured for 802.1x | ERROR |
| sqlite3QueryResGet failed.Query:%s | ERROR | pnacUmiIfMacAddrChange: could not process PDU received" | ERROR |
| sqlite3QueryResGet failed.Query:%s | ERROR | pnacUmiPhyPortConfig: Invalid config data | ERROR |
| sqlite3QueryResGet failed.Query:%s | ERROR | pnacUmiPhyPortConfig: Invalid backend name specified | ERROR |
| startStopVap failed to stop %s | ERROR | pnacUmiPhyPortConfig: could not create PNAC physical" | ERROR |
| Invalid SQLITE operation code - %d | ERROR | pnacUmiAuthConfig: Invalid config data | ERROR |
| ./src/dot11/mgmt/dot11Mgmt.c:1177: ADP_ERROR ( | ERROR | pnacUmiAuthConfig: Invalid backend name specified | ERROR |
| only delete event expected on dot11RogueAP. | ERROR | unable to create new EAP context. | ERROR |
| sqlite3QueryResGet failed | ERROR | unable to apply %s profile on the EAP context. | ERROR |
| unhandled database operation %d | ERROR | pnacUmiAuthConfig: could not configure PNAC PAE " | ERROR |
| sqlite3QueryResGet failed | ERROR | pnacUmiSuppConfig: Invalid config data | ERROR |
| failed to configure WPS on %s | ERROR | pnacUmiSuppConfig: Invalid backend name specified | ERROR |
| sqlite3QueryResGet failed | ERROR | pnacUmiSuppConfig: %s not configured for 802.1x | ERROR |
| sqlite3QueryResGet failed | ERROR | pnacUmiSuppConfig: could not PNAC port Access" | ERROR |
| sqlite3QueryResGet failed | ERROR | pnacUmiSuppConfig: Failed to register user information | ERROR |
| sqlite3QueryResGet failed | ERROR | pnacPortByMacDeconfig: port not found | ERROR |
| sqlite3QueryResGet failed | ERROR | pnacPortByMacDeconfig: port not found | ERROR |
| no VAP rows returned. expected one | ERROR | pnacUmiIfDown: Invalid config data | ERROR |
| multiple VAP rows returned. expected one | ERROR | pnacUmiIfDown: Invalid config data | ERROR |
| sqlite3QueryResGet failed | ERROR | Error from pnacPortDeconfig: port not configured | ERROR |
| invalid query result. ncols=%d nrows=%d | ERROR | pnacUmiIfDown: could not de-configure port | ERROR |
| %s:VAP(%s) create failed | ERROR | pnacUmiPhyPortDestroy: Invalid config data | ERROR |
| sqlite3QueryResGet failed | ERROR | pnacUmiPhyPortDestroy: Invalid config data | ERROR |
| invalid query result. ncols=%d nrows=%d | ERROR | pnacUmiPhyPortDestroy: Failed to destroy the port | ERROR |

| | | | |
|---|---|---|---|
| | | Invalid config data | ERROR |

## Facility: Kernel

| Log Message | Severity | Log Message | Severity |
|---|---|---|---|
| DNAT: multiple ranges no longer supported | DEBUG | %s: %s%s:%d -> %s:%d %s, | DEBUG |
| DNAT: Target size %u wrong for %u ranges, | DEBUG | %s: %s%s:%d %s, | DEBUG |
| DNAT: wrong table %s, tablename | DEBUG | %s: Failed to add WDS MAC: %s, dev->name, | DEBUG |
| DNAT: hook mask 0x%x bad, hook_mask | DEBUG | %s: Device already has WDS mac address attached, | DEBUG |
| %s%d: resetting MPPC/MPPE compressor, | DEBUG | %s: Added WDS MAC: %s, dev->name, | DEBUG |
| %s%d: wrong offset value: %d, | DEBUG | %s: WDS MAC address %s is not known by this interface, | DEBUG |
| %s%d: wrong length of match value: %d, | DEBUG | [madwifi] %s() : Not enough space., __FUNCTION__ | DEBUG |
| %s%d: too big offset value: %d, | DEBUG | Returning to chan %d, ieeeChan | DEBUG |
| %s%d: cannot decode offset value, | DEBUG | WEP | DEBUG |
| %s%d: wrong length code: 0x%X, | DEBUG | AES | DEBUG |
| %s%d: short packet (len=%d), __FUNCTION__, | DEBUG | AES_CCM | DEBUG |
| %s%d: bad sequence number: %d, expected: %d, | DEBUG | CKIP | DEBUG |
| %s%d: bad sequence number: %d, expected: %d, | DEBUG | TKIP | DEBUG |
| PPPIOCDETACH file->f_count=%d, | DEBUG | %s: cannot map channel to mode; freq %u flags 0x%x, | DEBUG |
| PPP: outbound frame not passed | DEBUG | %s: %s, vap->iv_dev->name, buf | DEBUG |
| PPP: VJ decompression error | DEBUG | %s: [%s] %s, vap->iv_dev->name, | DEBUG |
| PPP: inbound frame not passed | DEBUG | %s: [%s] %s, vap->iv_dev->name, ether_sprintf(mac), buf | DEBUG |
| PPP: reconstructed packet | DEBUG | [%s:%s] discard %s frame, %s, vap->iv_dev->name, | DEBUG |
| PPP: no memory for | DEBUG | [%s:%s] discard frame, %s, vap->iv_dev->name, | DEBUG |
| missed pkts %u..%u, | DEBUG | [%s:%s] discard %s information element, %s, | DEBUG |
| %s%d: resetting MPPC/MPPE compressor, | DEBUG | [%s:%s] discard information element, %s, | DEBUG |
| %s%d: wrong offset value: %d, | DEBUG | [%s:%s] discard %s frame, %s, vap->iv_dev->name, | DEBUG |
| %s%d: wrong length of match value: %d, | DEBUG | [%s:%s] discard frame, %s, vap->iv_dev->name, | DEBUG |
| %s%d: too big offset value: %d, | DEBUG | ifmedia_add: null ifm | DEBUG |
| %s%d: cannot decode offset value, | DEBUG | Adding entry for | DEBUG |
| %s%d: wrong length code: 0x%X, | DEBUG | ifmedia_set: no match for 0x%x/0x%x, | DEBUG |
| %s%d: short packet (len=%d), __FUNCTION__, | DEBUG | ifmedia_set: target | DEBUG |
| %s%d: bad sequence number: %d, expected: %d, | DEBUG | ifmedia_set: setting to | DEBUG |

| | | | |
|---|---|---|---|
| %s%d: bad sequence number: %d, expected: %d, | DEBUG | ifmedia_ioctl: no media found for 0x%x, | DEBUG |
| PPPIOCDETACH file->f_count=%d, | DEBUG | ifmedia_ioctl: switching %s to , dev->name | DEBUG |
| PPP: outbound frame not passed | DEBUG | ifmedia_match: multiple match for | DEBUG |
| PPP: VJ decompression error | DEBUG | <unknown type> | DEBUG |
| PPP: inbound frame not passed | DEBUG | desc->ifmt_string | DEBUG |
| PPP: reconstructed packet | DEBUG | mode %s, desc->ifmt_string | DEBUG |
| PPP: no memory for | DEBUG | <unknown subtype> | DEBUG |
| missed pkts %u..%u, | DEBUG | %s, desc->ifmt_string | DEBUG |
| %s: INC_USE_COUNT, now %d, __FUNCTION__, mod_use_count \ | DEBUG | %s%s, seen_option++ ? , : , | DEBUG |
| %s: DEC_USE_COUNT, now %d, __FUNCTION__, mod_use_count \ | DEBUG | %s%s, seen_option++ ? , : , | DEBUG |
| PPPOL2TP %s: _fmt, | DEBUG | %s, seen_option ? > : | DEBUG |
| PPPOL2TP: --> %s, __FUNCTION__) | DEBUG | %s: %s, dev->name, buf | DEBUG |
| PPPOL2TP: <-- %s, __FUNCTION__) | DEBUG | %s: no memory for sysctl table!, __func__ | DEBUG |
| %s: recv: , tunnel->name | DEBUG | %s: no memory for VAP name!, __func__ | DEBUG |
| %s: xmit:, session->name | DEBUG | %s: failed to register sysctls!, vap->iv_dev->name | DEBUG |
| %s: xmit:, session->name | DEBUG | %s: no memory for new proc entry (%s)!, __func__, | DEBUG |
| %s: module use_count is %d, __FUNCTION__, mod_use_count | DEBUG | %s: 0x%p len %u, tag, p, len | DEBUG |
| PPPOL2TP %s: _fmt, | DEBUG | %03d:, i | DEBUG |
| PPPOL2TP: --> %s, __FUNCTION__) | DEBUG | %02x, ((u_int8_t *)p)[i] | DEBUG |
| PPPOL2TP: <-- %s, __FUNCTION__) | DEBUG | first difference at byte %u, i | DEBUG |
| %s: recv: , tunnel->name | DEBUG | %s: , t->name | DEBUG |
| %s: xmit:, session->name | DEBUG | FAIL: ieee80211_crypto_newkey failed | DEBUG |
| %s: xmit:, session->name | DEBUG | FAIL: ieee80211_crypto_setkey failed | DEBUG |
| PPPOL2TP %s: _fmt, | DEBUG | FAIL: unable to allocate skbuff | DEBUG |
| PPPOL2TP: --> %s, __FUNCTION__) | DEBUG | FAIL: wep decap failed | DEBUG |
| PPPOL2TP: <-- %s, __FUNCTION__) | DEBUG | FAIL: decap botch; length mismatch | DEBUG |
| %s: recv: , tunnel->name | DEBUG | FAIL: decap botch; data does not compare | DEBUG |
| %s: xmit:, session->name | DEBUG | FAIL: wep encap failed | DEBUG |
| %s: xmit:, session->name | DEBUG | FAIL: encap data length mismatch | DEBUG |
| IRQ 31 is triggered | DEBUG | FAIL: encrypt data does not compare | DEBUG |
| [%s:%d] , __func__, __LINE__\ | DEBUG | PASS | DEBUG |
| \t[R%s %#0x %#0x 0x%08x%08x], (status == ERROR ? # : ), page, addr, (uint32_t)(*pValue >> 32), (uint32_t)(*pValue & 0xffffffff) | DEBUG | %u of %u 802.11i WEP test vectors passed, pass, total | DEBUG |
| \t[W%s %#0x %#0x 0x%08x%08x], (status == ERROR ? # : ), page, addr, (uint32_t)(value >> 32), (uint32_t)(value & 0xffffffff) | DEBUG | %s: 0x%p len %u, tag, p, len | DEBUG |
| %s: mac_add %02X:%02X:%02X:%02X:%02X:%02X, dev->name, addr[0], addr[1], addr[2], addr[3], addr[4], addr[5] | DEBUG | %03d:, i | DEBUG |

| | | | |
|---|---|---|---|
| %s: mac_del %02X:%02X:%02X:%02X:%02X:%02X, dev->name, addr[0], addr[1], addr[2], addr[3], addr[4], addr[5] | DEBUG | %02x, ((u_int8_t *)p)[i] | DEBUG |
| %s: mac_kick %02X:%02X:%02X:%02X:%02X:%02X, dev->name, addr[0], addr[1], addr[2], addr[3], addr[4], addr[5] | DEBUG | first difference at byte %u, i | DEBUG |
| %s: mac_undefined %02X:%02X:%02X:%02X:%02X:%02X, dev->name, addr[0], addr[1], addr[2], addr[3], addr[4], addr[5] | DEBUG | %s: , t->name | DEBUG |
| %s: addr_add %02X:%02X:%02X:%02X:%02X:%02X, dev->name, addr[0], addr[1], addr[2], addr[3], addr[4], addr[5] | DEBUG | FAIL: ieee80211_crypto_newkey failed | DEBUG |
| %s: addr_del %02X:%02X:%02X:%02X:%02X:%02X, dev->name, addr[0], addr[1], addr[2], addr[3], addr[4], addr[5] | DEBUG | FAIL: ieee80211_crypto_setkey failed | DEBUG |
| %s: mac_undefined %02X:%02X:%02X:%02X:%02X:%02X, dev->name, addr[0], addr[1], addr[2], addr[3], addr[4], addr[5] | DEBUG | FAIL: unable to allocate skbuff | DEBUG |
| %s: set_float %d;%d, | DEBUG | FAIL: ccmp encap failed | DEBUG |
| IRQ 32 is triggered | DEBUG | FAIL: encap data length mismatch | DEBUG |
| ip_finish_output2: No header cache and no neighbour! | DEBUG | FAIL: encrypt data does not compare | DEBUG |
| a guy asks for address mask. Who is it? | DEBUG | FAIL: ccmp decap failed | DEBUG |
| icmp v4 hw csum failure) | DEBUG | FAIL: decap botch; length mismatch | DEBUG |
| expire>> %u %d %d %d, expire, | DEBUG | FAIL: decap botch; data does not compare | DEBUG |
| expire++ %u %d %d %d, expire, | DEBUG | PASS | DEBUG |
| rt_cache @%02x: %u.%u.%u.%u, hash, | DEBUG | %u of %u 802.11i AES-CCMP test vectors passed, pass, total | DEBUG |
| rt_bind_peer(0) @%p, NET_CALLER(iph) | DEBUG | %s: 0x%p len %u, tag, p, len | DEBUG |
| ip_rt_advice: redirect to | DEBUG | %03d:, i | DEBUG |
| ip_rt_bug: %u.%u.%u.%u -> %u.%u.%u.%u, %s, | DEBUG | %02x, ((u_int8_t *)p)[i] | DEBUG |
| udp cork app bug 2) | DEBUG | first difference at byte %u, i | DEBUG |
| udp cork app bug 3) | DEBUG | ieee80211_crypto_newkey failed | DEBUG |
| udp v4 hw csum failure.) | DEBUG | ieee80211_crypto_setkey failed | DEBUG |
| UDP: short packet: From %u.%u.%u.%u:%u %d/%d to %u.%u.%u.%u:%u, | DEBUG | unable to allocate skbuff | DEBUG |
| UDP: bad checksum. From %d.%d.%d.%d:%d to %d.%d.%d.%d:%d ulen %d, | DEBUG | tkip enmic failed | DEBUG |
| %s: lookup policy [list] found=%s, | DEBUG | enmic botch; length mismatch | DEBUG |
| %s: called: [output START], __FUNCTION__ | DEBUG | enmic botch | DEBUG |
| %s: flow dst=%s, __FUNCTION__, XFRMSTRADDR(fl->fl4_dst, family) | DEBUG | tkip encap failed | DEBUG |
| %s: flow src=%s, __FUNCTION__, XFRMSTRADDR(fl->fl4_src, family) | DEBUG | encrypt phase1 botch | DEBUG |

| | | | |
|---|---|---|---|
| %s: flow dst=%s, __FUNCTION__, XFRMSTRADDR(fl->fl6_dst, family) | DEBUG | encrypt data length mismatch | DEBUG |
| %s: flow src=%s, __FUNCTION__, XFRMSTRADDR(fl->fl6_src, family) | DEBUG | encrypt data does not compare | DEBUG |
| a guy asks for address mask. Who is it? | DEBUG | tkip decap failed | DEBUG |
| icmp v4 hw csum failure) | DEBUG | decrypt phase1 botch | DEBUG |
| expire>> %u %d %d %d, expire, | DEBUG | decrypt data does not compare | DEBUG |
| expire++ %u %d %d %d, expire, | DEBUG | decap botch; length mismatch | DEBUG |
| rt_cache @%02x: %u.%u.%u.%u, hash, | DEBUG | decap botch; data does not compare | DEBUG |
| rt_bind_peer(0) @%p, NET_CALLER(iph) | DEBUG | tkip demic failed | DEBUG |
| ip_rt_advice: redirect to | DEBUG | 802.11i TKIP test vectors passed | DEBUG |
| ip_rt_bug: %u.%u.%u.%u -> %u.%u.%u.%u, %s, | DEBUG | %s, buf | DEBUG |
| UDP: short packet: From %u.%u.%u.%u:%u %d/%d to %u.%u.%u.%u:%u, | DEBUG | Atheros HAL assertion failure: %s: line %u: %s, | DEBUG |
| UDP: bad checksum. From %d.%d.%d.%d:%d to %d.%d.%d.%d:%d ulen %d, | DEBUG | ath_hal: logging to %s %s, ath_hal_logfile, | DEBUG |
| a guy asks for address mask. Who is it? | DEBUG | ath_hal: logging disabled | DEBUG |
| fib_add_ifaddr: bug: prim == NULL | DEBUG | %s%s, sep, ath_hal_buildopts[i] | DEBUG |
| fib_del_ifaddr: bug: prim == NULL | DEBUG | ath_pci: No devices found, driver not installed. | DEBUG |
| expire>> %u %d %d %d, expire, | DEBUG | _fmt, __VA_ARGS__ | DEBUG |
| expire++ %u %d %d %d, expire, | DEBUG | %s: Warning, using only %u entries in %u key cache, | DEBUG |
| rt_cache @%02x: %u.%u.%u.%u, hash, | DEBUG | %s: TX99 support enabled, dev->name | DEBUG |
| rt_bind_peer(0) @%p, | DEBUG | %s:grppoll Buf allocation failed ,__func__ | DEBUG |
| ip_rt_advice: redirect to | DEBUG | %s: %s: unable to start recv logic, | DEBUG |
| ip_rt_bug: %u.%u.%u.%u -> %u.%u.%u.%u, %s, | DEBUG | %s: %s: unable to start recv logic, | DEBUG |
| %s: lookup policy [list] found=%s, | DEBUG | %s: no skbuff, __func__ | DEBUG |
| %s: called: [output START], __FUNCTION__ | DEBUG | %s: hardware error; resetting, dev->name | DEBUG |
| %s: flow dst=%s, __FUNCTION__, XFRMSTRADDR(fl->fl4_dst, family) | DEBUG | %s: rx FIFO overrun; resetting, dev->name | DEBUG |
| %s: flow src=%s, __FUNCTION__, XFRMSTRADDR(fl->fl4_src, family) | DEBUG | %s: unable to reset hardware: '%s' (HAL status %u) | DEBUG |
| %s: flow dst=%s, __FUNCTION__, XFRMSTRADDR(fl->fl6_dst, family) | DEBUG | %s: unable to start recv logic, dev->name | DEBUG |
| %s: flow src=%s, __FUNCTION__, XFRMSTRADDR(fl->fl6_src, family) | DEBUG | %s: %s: unable to reset hardware: '%s' (HAL status %u), | DEBUG |
| a guy asks for address mask. Who is it? | DEBUG | %s: %s: unable to start recv logic, | DEBUG |
| icmp v4 hw csum failure) | DEBUG | ath_mgtstart: discard, no xmit buf | DEBUG |
| expire>> %u %d %d %d, expire, | DEBUG | %s: [%02u] %-7s , tag, ix, ciphers[hk->kv_type] | DEBUG |
| expire++ %u %d %d %d, expire, | DEBUG | %02x, hk->kv_val[i] | DEBUG |
| rt_cache @%02x: %u.%u.%u.%u, hash, | DEBUG | mac %s, ether_sprintf(mac) | DEBUG |
| rt_bind_peer(0) @%p, NET_CALLER(iph) | DEBUG | %s , sc->sc_splitmic ? mic : rxmic | DEBUG |
| ip_rt_advice: redirect to | DEBUG | %02x, hk->kv_mic[i] | DEBUG |

| | | | |
|---|---|---|---|
| ip_rt_bug: %u.%u.%u.%u -> %u.%u.%u.%u, %s, | DEBUG | txmic | DEBUG |
| UDP: short packet: From %u.%u.%u.%u:%u %d/%d to %u.%u.%u.%u:%u, | DEBUG | %02x, hk->kv_txmic[i] | DEBUG |
| UDP: bad checksum. From %d.%d.%d.%d:%d to %d.%d.%d.%d:%d ulen %d, | DEBUG | %s: unable to update h/w beacon queue parameters, | DEBUG |
| REJECT: ECHOREPLY no longer supported. | DEBUG | %s: stuck beacon; resetting (bmiss count %u), | DEBUG |
| ipt_rpc: only valid for PRE_ROUTING, FORWARD, POST_ROUTING, LOCAL_IN and/or LOCAL_OUT targets. | DEBUG | move data from NORMAL to XR | DEBUG |
| ip_nat_init: can't setup rules. | DEBUG | moved %d buffers from NORMAL to XR, index | DEBUG |
| ip_nat_init: can't register in hook. | DEBUG | move buffers from XR to NORMAL | DEBUG |
| ip_nat_init: can't register out hook. | DEBUG | moved %d buffers from XR to NORMAL, count | DEBUG |
| ip_nat_init: can't register adjust in hook. | DEBUG | %s:%d %s, __FILE__, __LINE__, __func__ | DEBUG |
| ip_nat_init: can't register adjust out hook. | DEBUG | %s:%d %s, __FILE__, __LINE__, __func__ | DEBUG |
| ip_nat_init: can't register local out hook. | DEBUG | %s: no buffer (%s), dev->name, __func__ | DEBUG |
| ip_nat_init: can't register local in hook. | DEBUG | %s: no skbuff (%s), dev->name, __func__ | DEBUG |
| ipt_hook: happy cracking. | DEBUG | %s: HAL qnum %u out of range, max %u!, | DEBUG |
| ip_conntrack: can't register pre-routing defrag hook. | DEBUG | grppoll_start: grppoll Buf allocation failed | DEBUG |
| ip_conntrack: can't register local_out defrag hook. | DEBUG | %s: HAL qnum %u out of range, max %u!, | DEBUG |
| ip_conntrack: can't register pre-routing hook. | DEBUG | %s: AC %u out of range, max %u!, | DEBUG |
| ip_conntrack: can't register local out hook. | DEBUG | %s: unable to update hardware queue | DEBUG |
| ip_conntrack: can't register local in helper hook. | DEBUG | %s: bogus frame type 0x%x (%s), dev->name, | DEBUG |
| ip_conntrack: can't register postrouting helper hook. | DEBUG | ath_stoprecv: rx queue 0x%x, link %p, | DEBUG |
| ip_conntrack: can't register post-routing hook. | DEBUG | %s: %s: unable to reset channel %u (%u MHz) | DEBUG |
| ip_conntrack: can't register local in hook. | DEBUG | %s: %s: unable to restart recv logic, | DEBUG |
| ip_conntrack: can't register to sysctl. | DEBUG | %s: unable to allocate channel table, dev->name | DEBUG |
| ip_conntrack_rtsp v IP_NF_RTSP_VERSION loading | DEBUG | %s: unable to allocate channel table, dev->name | DEBUG |
| ip_conntrack_rtsp: max_outstanding must be a positive integer | DEBUG | %s: unable to collect channel list from HAL; | DEBUG |
| ip_conntrack_rtsp: setup_timeout must be a positive integer | DEBUG | R (%p %llx) %08x %08x %08x %08x %08x %08x %c, | DEBUG |
| ip_conntrack_rtsp: ERROR registering port %d, ports[i] | DEBUG | T (%p %llx) %08x %08x %08x %08x %08x %08x %08x %08x %c, | DEBUG |
| ip_nat_rtsp v IP_NF_RTSP_VERSION loading | DEBUG | %s: no memory for sysctl table!, __func__ | DEBUG |
| %s: Sorry! Cannot find this match option., __FILE__ | DEBUG | %s: no memory for device name storage!, __func__ | DEBUG |

| | | | |
|---|---|---|---|
| ipt_time loading | DEBUG | %s: failed to register sysctls!, sc->sc_dev->name | DEBUG |
| ipt_time unloaded | DEBUG | %s: mac %d.%d phy %d.%d, dev->name, | DEBUG |
| ip_conntrack_irc: max_dcc_channels must be a positive integer | DEBUG | 5 GHz radio %d.%d 2 GHz radio %d.%d, | DEBUG |
| ip_conntrack_irc: ERROR registering port %d, | DEBUG | radio %d.%d, ah->ah_analog5GhzRev >> 4, | DEBUG |
| ip_nat_h323: ip_nat_mangle_tcp_packet | DEBUG | radio %d.%d, ah->ah_analog5GhzRev >> 4, | DEBUG |
| ip_nat_h323: ip_nat_mangle_udp_packet | DEBUG | %s: Use hw queue %u for %s traffic, | DEBUG |
| ip_nat_h323: out of expectations | DEBUG | %s: Use hw queue %u for CAB traffic, dev->name, | DEBUG |
| ip_nat_h323: out of RTP ports | DEBUG | %s: Use hw queue %u for beacons, dev->name, | DEBUG |
| ip_nat_h323: out of TCP ports | DEBUG | Could not find Board Configuration Data | DEBUG |
| ip_nat_q931: out of TCP ports | DEBUG | Could not find Radio Configuration data | DEBUG |
| ip_nat_ras: out of TCP ports | DEBUG | ath_ahb: No devices found, driver not installed. | DEBUG |
| ip_nat_q931: out of TCP ports | DEBUG | _fmt, __VA_ARGS__ | DEBUG |
| ip_conntrack_core: Frag of proto %u., | DEBUG | _fmt, __VA_ARGS__ | DEBUG |
| Broadcast packet! | DEBUG | xlr8NatIpFinishOutput: Err.. skb2 == NULL ! | DEBUG |
| Should bcast: %u.%u.%u.%u->%u.%u.%u.%u (sk=%p, ptype=%u), | DEBUG | xlr8NatSoftCtxEnqueue: Calling xlr8NatIpFinishOutput () .., status | DEBUG |
| ip_conntrack version %s (%u buckets, %d max) | DEBUG | xlr8NatSoftCtxEnqueue: xlr8NatIpFinishOutput () returned [%d], status | DEBUG |
| ERROR registering port %d, | DEBUG | icmpExceptionHandler: Exception! | DEBUG |
| netfilter PSD loaded - (c) astaro AG | DEBUG | fragExceptionHandler: Exception! | DEBUG |
| netfilter PSD unloaded - (c) astaro AG | DEBUG | algExceptionHandler: Exception! | DEBUG |
| %s , SELF | DEBUG | dnsExceptionHandler: Exception! | DEBUG |
| %s , LAN | DEBUG | IPsecExceptionHandler: Exception! | DEBUG |
| %s , WAN | DEBUG | ESP Packet Src:%x Dest:%x Sport:%d dport:%d secure:%d spi:%d isr:%p, | DEBUG |
| TRUNCATED | DEBUG | xlr8NatConntrackPreHook: We found the valid context, | DEBUG |
| SRC=%u.%u.%u.%u DST=%u.%u.%u.%u , | DEBUG | xlr8NatConntrackPreHook: Not a secured packet. | DEBUG |
| LEN=%u TOS=0x%02X PREC=0x%02X TTL=%u ID=%u , | DEBUG | xlr8NatConntrackPreHook: isr=[%p], pIsr | DEBUG |
| FRAG:%u , ntohs(ih->frag_off) & IP_OFFSET | DEBUG | xlr8NatConntrackPreHook: secure=[%d], secure | DEBUG |
| TRUNCATED | DEBUG | Context found for ESP %p,pFlowEntry->post.pIsr[0] | DEBUG |
| PROTO=TCP | DEBUG | xlr8NatConntrackPreHook: New connection. | DEBUG |
| INCOMPLETE [%u bytes] , | DEBUG | xlr8NatConntrackPostHook: postSecure=[%d] postIsr=[%p %p], | DEBUG |
| SPT=%u DPT=%u , | DEBUG | proto %d spi %d <-------> proto %d spi %d,pPktInfo->proto,pPktInfo->spi, | DEBUG |
| SEQ=%u ACK=%u , | DEBUG | IPSEC_INF Clock skew detected | DEBUG |

| | | | |
|---|---|---|---|
| WINDOW=%u , ntohs(th->window) | DEBUG | IPSEC_ERR [%s:%d]: Max (%d) No of SA Limit reached, | DEBUG |
| RES=0x%02x , (u8)(ntohl(tcp_flag_word(th) & TCP_RESERVED_BITS) >> 22) | DEBUG | IPSEC_ERR [%s:%d]: Max (%d) No of SA Limit reached, | DEBUG |
| URGP=%u , ntohs(th->urg_ptr) | DEBUG | IPSEC_ERR [%s:%d]: time(secs): %u | DEBUG |
| TRUNCATED | DEBUG | ERROR: Failed to add entry to IPsec sa table | DEBUG |
| %02X, op[i] | DEBUG | ERROR: Failed to add entry to IPsec sa table | DEBUG |
| PROTO=UDP | DEBUG | ERROR: Failed to add entry to IPsec sa table | DEBUG |
| INCOMPLETE [%u bytes] , | DEBUG | ERROR: Failed to add entry to IPsec sa table | DEBUG |
| SPT=%u DPT=%u LEN=%u , | DEBUG | ERROR: Failed to add entry to IPsec sa table | DEBUG |
| SPT=%u DPT=%u LEN=%u , | DEBUG | ERROR: Failed to add entry to IPsec sa table | DEBUG |
| PROTO=ICMP | DEBUG | unknown oid '%s', varName | DEBUG |
| INCOMPLETE [%u bytes] , | DEBUG | could not find oid pointer for '%s', varName | DEBUG |
| TYPE=%u CODE=%u , ich->type, ich->code | DEBUG | unRegistering IPsecMib ..... | DEBUG |
| INCOMPLETE [%u bytes] , | DEBUG | ERROR: Failed to add entry to IPsec sa table | DEBUG |
| ID=%u SEQ=%u , | DEBUG | ERROR: Failed to add entry to IPsec sa table | DEBUG |
| PARAMETER=%u , | DEBUG | ERROR: Failed to add entry to IPsec sa table | DEBUG |
| GATEWAY=%u.%u.%u.%u , | DEBUG | ERROR: Failed to add entry to IPsec sa table | DEBUG |
| MTU=%u , ntohs(ich->un.frag.mtu) | DEBUG | ERROR: Failed to add entry to IPsec sa table | DEBUG |
| PROTO=AH | DEBUG | ERROR: Failed to add entry to IPsec sa table | DEBUG |
| INCOMPLETE [%u bytes] , | DEBUG | unknown oid '%s', varName | DEBUG |
| SPI=0x%x , ntohl(ah->spi) | DEBUG | could not find oid pointer for '%s', varName | DEBUG |
| PROTO=ESP | DEBUG | unRegistering IPsecMib ..... | DEBUG |
| INCOMPLETE [%u bytes] , | DEBUG | . %u.%u.%u.%u, NIPQUAD(trt->rt_dst) | DEBUG |
| SPI=0x%x , ntohl(eh->spi) | DEBUG | %02x, *p | DEBUG |
| PROTO=%u , ih->protocol | DEBUG | . %u.%u.%u.%u, NIPQUAD(trt->rt_dst) | DEBUG |
| UID=%u , skb->sk->sk_socket->file->f_uid | DEBUG | %02x, *p | DEBUG |
| <%d>%sIN=%s OUT=%s , loginfo->u.log.level, | DEBUG | . %u.%u.%u.%u, NIPQUAD(trt->rt_dst) | DEBUG |
| level_string | DEBUG | %02x, *p | DEBUG |
| %sIN=%s OUT=%s , | DEBUG | . %u.%u.%u.%u, NIPQUAD(trt->rt_dst) | DEBUG |
| %s , prefix == NULL ? loginfo->prefix : prefix | DEBUG | %02x, *p | DEBUG |
| IN= | DEBUG | unable to register vIPsec kernel comp to UMI | DEBUG |
| OUT= | DEBUG | unregistering VIPSECK from UMI .... | DEBUG |
| PHYSIN=%s , physindev->name | DEBUG | in vIPsecKIoctlHandler cmd - %d, cmd | DEBUG |

| | | | |
|---|---|---|---|
| PHYSOUT=%s , physoutdev->name | DEBUG | %s: Error. DST Refcount value less than 1 (%d), | DEBUG |
| MAC= | DEBUG | for %s DEVICE refcnt: %d ,pDst->dev->name, | DEBUG |
| %02x%c, *p, | DEBUG | %s: Got Null m:%p *m:%p sa:%p *sa:%p,__func__,ppBufMgr, | DEBUG |
| NAT: no longer support implicit source local NAT | DEBUG | %s Got Deleted SA:%p state:%d,__func__,pIPsecInfo,pIPsecInfo->state | DEBUG |
| NAT: packet src %u.%u.%u.%u -> dst %u.%u.%u.%u, | DEBUG | %s: %s: fmt, __FILE__, __FUNCTION__ , ## args) | INFO |
| SNAT: multiple ranges no longer supported | DEBUG | %s: %s: fmt, __FILE__, __FUNCTION__ , ## args) | INFO |
| format,##args) | DEBUG | ipt_TIME: format, ## args) | INFO |
| version | DEBUG | IPT_ACCOUNT_NAME : checkentry() wrong parameters (not equals existing table parameters). | INFO |
| offset_before=%d, offset_after=%d, correction_pos=%u, x->offset_before, x->offset_after, x->correction_pos | DEBUG | IPT_ACCOUNT_NAME : checkentry() too big netmask. | INFO |
| ip_ct_h323: | DEBUG | IPT_ACCOUNT_NAME : checkentry() failed to allocate %zu for new table %s., sizeof(struct t_ipt_account_table), info->name | INFO |
| ip_ct_h323: incomplete TPKT (fragmented?) | DEBUG | IPT_ACCOUNT_NAME : checkentry() wrong network/netmask. | INFO |
| ip_ct_h245: decoding error: %s, | DEBUG | account: Wrong netmask given by netmask parameter (%i). Valid is 32 to 0., netmask | INFO |
| ip_ct_h245: packet dropped | DEBUG | IPT_ACCOUNT_NAME : checkentry() failed to create procfs entry. | INFO |
| ip_ct_q931: decoding error: %s, | DEBUG | IPT_ACCOUNT_NAME : checkentry() failed to register match. | INFO |
| ip_ct_q931: packet dropped | DEBUG | failed to create procfs entry . | INFO |
| ip_ct_ras: decoding error: %s, | DEBUG | MPPE/MPPC encryption/compression module registered | INFO |
| ip_ct_ras: packet dropped | DEBUG | MPPE/MPPC encryption/compression module unregistered | INFO |
| ERROR registering port %d, | DEBUG | PPP generic driver version PPP_VERSION | INFO |
| ERROR registering port %d, | DEBUG | MPPE/MPPC encryption/compression module registered | INFO |
| ipt_connlimit [%d]: src=%u.%u.%u.%u:%d dst=%u.%u.%u.%u:%d %s, | DEBUG | MPPE/MPPC encryption/compression module unregistered | INFO |
| ipt_connlimit [%d]: src=%u.%u.%u.%u:%d dst=%u.%u.%u.%u:%d new, | DEBUG | PPP generic driver version PPP_VERSION | INFO |
| ipt_connlimit: Oops: invalid ct state ? | DEBUG | PPPoL2TP kernel driver, %s, | INFO |
| ipt_connlimit: Hmm, kmalloc failed :-( | DEBUG | PPPoL2TP kernel driver, %s, | INFO |
| ipt_connlimit: src=%u.%u.%u.%u mask=%u.%u.%u.%u | DEBUG | PPPoL2TP kernel driver, %s, | INFO |
| _lvl PPPOL2TP: _fmt, ##args | DEBUG | failed to create procfs entry . | INFO |
| %02X, ptr[length] | DEBUG | proc dir not created .. | INFO |
| %02X, ((unsigned char *) m- | DEBUG | Initialzing Product Data modules | INFO |

| | | | |
|---|---|---|---|
| >msg_iov[i].iov_base)[j] | | | |
| %02X, skb->data[i] | DEBUG | De initializing by \ | INFO |
| _lvl PPPOL2TP: _fmt, ##args | DEBUG | kernel UMI module loaded | INFO |
| %02X, ptr[length] | DEBUG | kernel UMI module unloaded | INFO |
| %02X, ((unsigned char *) m->msg_iov[i].iov_base)[j] | DEBUG | Loading bridge module | INFO |
| %02X, skb->data[i] | DEBUG | Unloading bridge module | INFO |
| _lvl PPPOL2TP: _fmt, ##args | DEBUG | unsupported command %d, cmd | INFO |
| %02X, ptr[length] | DEBUG | Loading ifDev module | INFO |
| %02X, ((unsigned char *) m->msg_iov[i].iov_base)[j] | DEBUG | Unloading ifDev module | INFO |
| %02X, skb->data[i] | DEBUG | ERROR#%d in alloc_chrdev_region, result | INFO |
| KERN_EMERG THE value read is %d,value*/ | DEBUG | ERROR#%d in cdev_add, result | INFO |
| KERN_EMERG Factory Reset button is pressed | DEBUG | using bcm switch %s, bcmswitch | INFO |
| KERN_EMERG Returing error in INTR registration | DEBUG | privlegedID %d wanporttNo: %d, privlegedID,wanportNo | INFO |
| KERN_EMERG Initialzing Factory defaults modules | DEBUG | Loading mii | INFO |
| Failed to allocate memory for pSipListNode | DEBUG | Unloading mii | INFO |
| SIPALG: Memeory allocation failed for pSipNodeEntryTbl | DEBUG | %s: Version 0.1 | INFO |
| pkt-err %s, pktInfo.error | DEBUG | %s: driver unloaded, dev_info | INFO |
| pkt-err %s, pktInfo.error | DEBUG | wlan: %s backend registered, be->iab_name | INFO |
| pkt-err %s, pktInfo.error | DEBUG | wlan: %s backend unregistered, | INFO |
| %s Len=%d, msg, len | DEBUG | wlan: %s acl policy registered, iac->iac_name | INFO |
| %02x , ((uint8_t *) ptr)[i] | DEBUG | wlan: %s acl policy unregistered, iac->iac_name | INFO |
| End | DEBUG | %s, tmpbuf | INFO |
| CVM_MOD_EXP_BASE MISMATCH cmd=%x base=%x, cmd, | DEBUG | VLAN2 | INFO |
| op->sizeofptr = %ld, op->sizeofptr | DEBUG | VLAN3 | INFO |
| opcode cmd = %x, cmd | DEBUG | VLAN4 <%d %d>, | INFO |
| modexp opcode received | DEBUG | %s: %s, dev_info, version | INFO |
| Memory Allocation failed | DEBUG | %s: driver unloaded, dev_info | INFO |
| modexpcrt opcode received | DEBUG | %s, buf | INFO |
| kmalloc failed | DEBUG | %s: %s (, dev_info, ath_hal_version | INFO |
| kmalloc failed | DEBUG | %s: driver unloaded, dev_info | INFO |
| kmalloc failed | DEBUG | %s: %s: mem=0x%lx, irq=%d hw_base=0x%p, | INFO |
| kmalloc failed | DEBUG | %s: %s, dev_info, version | INFO |
| kmalloc Failed | DEBUG | %s: driver unloaded, dev_info | INFO |
| kmalloc failed | DEBUG | %s: %s: mem=0x%lx, irq=%d, | INFO |
| unknown cyrpto ioctl cmd received %x, cmd | DEBUG | %s: %s: mem=0x%lx, irq=%d, | INFO |
| register_chrdev returned ZERO | DEBUG | %s: %s, dev_info, version | INFO |
| const char *descr, krb5_keyblock *k) { | DEBUG | %s: driver unloaded, dev_info | INFO |
| F password, &pdata | DEBUG | %s, buf | INFO |

| | | | |
|---|---|---|---|
| test key, key | DEBUG | %s: %s (, dev_info, ath_hal_version | INFO |
| pre-hashed key, key | DEBUG | %s: driver unloaded, dev_info | INFO |
| const char *descr, krb5_keyblock *k) { | DEBUG | %s: driver unloaded, dev_info | INFO |
| AES 128-bit key, &key | DEBUG | %s: Version 2.0.0 | INFO |
| const char *descr, krb5_keyblock *k) { | DEBUG | %s: driver unloaded, dev_info | INFO |
| test key, key | DEBUG | %s: driver unloaded, dev_info | INFO |
| pre-hashed key, key | DEBUG | wlan: %s backend registered, be->iab_name | INFO |
| const char *descr, krb5_keyblock *k) { | DEBUG | wlan: %s backend unregistered, | INFO |
| 128-bit AES key,&dk | DEBUG | wlan: %s acl policy registered, iac->iac_name | INFO |
| 256-bit AES key, &dk | DEBUG | wlan: %s acl policy unregistered, iac->iac_name | INFO |
| WARNING: | DEBUG | %s: %s, dev_info, version | INFO |
| bwMonMultipathNxtHopSelect:: checking rates | DEBUG | %s: driver unloaded, dev_info | INFO |
| hop :%d dev:%s usableBwLimit = %d currBwShare = %d lastHopSelected = %d weightedHopPrefer = %d , | DEBUG | %s: %s (, dev_info, ath_hal_version | INFO |
| 1. selecting hop: %d lastHopSelected = %d , selHop, lastHopSelected | DEBUG | %s: driver unloaded, dev_info | INFO |
| 4. hop :%d dev:%s usableBwLimit = %d currBwShare = %d lastHopSelected = %d weightedHopPrefer = %d , | DEBUG | %s: %s: mem=0x%lx, irq=%d, | INFO |
| 2. selecting hop: %d lastHopSelected = %d , selHop, lastHopSelected | DEBUG | %s: %s, dev_info, version | INFO |
| 3. selecting hop: %d lastHopSelected = %d , selHop, lastHopSelected | DEBUG | %s: driver unloaded, dev_info | INFO |
| bwMonitor multipath selection enabled | DEBUG | ath_pci: switching rfkill capability %s, | INFO |
| bwMonitor multipath selection disabled | DEBUG | Unknown autocreate mode: %s, | INFO |
| weightedHopPrefer set to %d ,weightedHopPrefer | DEBUG | %s: %s: mem=0x%lx, irq=%d, | INFO |
| bwMonitor sysctl registration failed | DEBUG | %s: %s, dev_info, version | INFO |
| bwMonitor sysctl registered | DEBUG | %s: driver unloaded, dev_info | INFO |
| bwMonitor sysctl not registered | DEBUG | %s: %s, dev_info, version | INFO |
| Unregistered bwMonitor sysctl | DEBUG | %s: unloaded, dev_info | INFO |
| CONFIG_SYSCTL enabled ... | DEBUG | %s: %s, dev_info, version | INFO |
| Initialized bandwidth monitor ... | DEBUG | %s: unloaded, dev_info | INFO |
| Removed bandwidth monitor ... | DEBUG | %s: %s, dev_info, version | INFO |
| Oops.. AES_GCM_encrypt failed (keylen:%u),key->cvm_keylen | DEBUG | %s: unloaded, dev_info | INFO |
| Oops.. AES_GCM_decrypt failed (keylen:%u),key->cvm_keylen | DEBUG | failed to create procfs entry . | INFO |
| %s, msg | DEBUG | ICMP: %u.%u.%u.%u: | INFO |
| %02x%s, data[i], | DEBUG | ICMP: %u.%u.%u.%u: Source | INFO |
| Failed to set AES encrypt key | DEBUG | Wrong address mask %u.%u.%u.%u from | INFO |
| Failed to set AES encrypt key | DEBUG | Redirect from %u.%u.%u.%u on %s about | INFO |
| AES %s Encrypt Test Duration: %d:%d, hard ? Hard : Soft, | DEBUG | IP: routing cache hash table of %u buckets, %ldKbytes, | INFO |
| Failed to set AES encrypt key | DEBUG | source route option %u.%u.%u.%u -> %u.%u.%u.%u, | INFO |

| | | | |
|---|---|---|---|
| Failed to set AES encrypt key | DEBUG | ICMP: %u.%u.%u.%u: | INFO |
| AES %s Decrypt Test Duration: %d:%d, hard ? Hard : Soft, | DEBUG | ICMP: %u.%u.%u.%u: Source | INFO |
| Failed to set AES encrypt key | DEBUG | Wrong address mask %u.%u.%u.%u from | INFO |
| Failed to set AES encrypt key | DEBUG | Redirect from %u.%u.%u.%u on %s about | INFO |
| Failed to set AES encrypt key | DEBUG | IP: routing cache hash table of %u buckets, %ldKbytes, | INFO |
| Failed to set AES encrypt key | DEBUG | source route option %u.%u.%u.%u -> %u.%u.%u.%u, | INFO |
| Failed to set DES encrypt key[%d], i | DEBUG | Wrong address mask %u.%u.%u.%u from | INFO |
| Failed to set DES decrypt key[%d], i | DEBUG | Redirect from %u.%u.%u.%u on %s about | INFO |
| Failed to set DES encrypt key[%d], i | DEBUG | source route option | INFO |
| Failed to set DES decrypt key[%d], i | DEBUG | ICMP: %u.%u.%u.%u: | INFO |
| Failed to set DES encrypt key | DEBUG | ICMP: %u.%u.%u.%u: Source | INFO |
| Failed to set DES decrypt key | DEBUG | Wrong address mask %u.%u.%u.%u from | INFO |
| Failed to set DES encrypt key | DEBUG | Redirect from %u.%u.%u.%u on %s about | INFO |
| Failed to set DES decrypt key | DEBUG | IP: routing cache hash table of %u buckets, %ldKbytes, | INFO |
| AES Software Test: | DEBUG | source route option %u.%u.%u.%u -> %u.%u.%u.%u, | INFO |
| AES Software Test %s, aesSoftTest(0) ? Failed : Passed | DEBUG | IPsec: device unregistering: %s, dev->name | INFO |
| AES Hardware Test: | DEBUG | IPsec: device down: %s, dev->name | INFO |
| AES Hardware Test %s, aesHardTest(0) ? Failed : Passed | DEBUG | mark: only supports 32bit mark | WARNING |
| 3DES Software Test: | DEBUG | ipt_time: invalid argument | WARNING |
| 3DES Software Test %s, des3SoftTest(0) ? Failed : Passed | DEBUG | ipt_time: IPT_DAY didn't matched | WARNING |
| 3DES Hardware Test: | DEBUG | ./Logs_kernel.txt:45:KERN_WARNING | WARNING |
| 3DES Hardware Test %s, des3HardTest(0) ? Failed : Passed | DEBUG | ./Logs_kernel.txt:59:KERN_WARNING | WARNING |
| DES Software Test: | DEBUG | ipt_LOG: not logging via system console | WARNING |
| DES Software Test %s, desSoftTest(0) ? Failed : Passed | DEBUG | %s: wrong options length: %u, fname, opt_len | WARNING |
| DES Hardware Test: | DEBUG | %s: options rejected: o[0]=%02x, o[1]=%02x, | WARNING |
| DES Hardware Test %s, desHardTest(0) ? Failed : Passed | DEBUG | %s: wrong options length: %u, | WARNING |
| SHA Software Test: | DEBUG | %s: options rejected: o[0]=%02x, o[1]=%02x, | WARNING |
| SHA Software Test %s, shaSoftTest(0) ? Failed : Passed | DEBUG | %s: don't know what to do: o[5]=%02x, | WARNING |
| SHA Hardware Test: | DEBUG | %s: wrong options length: %u, fname, opt_len | WARNING |
| SHA Hardware Test %s, shaHardTest(0) ? Failed : Passed | DEBUG | %s: options rejected: o[0]=%02x, o[1]=%02x, | WARNING |
| MD5 Software Test: | DEBUG | %s: wrong options length: %u, | WARNING |

| | | | |
|---|---|---|---|
| MD5 Software Test %s, md5SoftTest(0) ? Failed : Passed | DEBUG | %s: options rejected: o[0]=%02x, o[1]=%02x, | WARNING |
| MD5 Hardware Test: | DEBUG | %s: don't know what to do: o[5]=%02x, | WARNING |
| MD5 Hardware Test %s, md5HardTest(0) ? Failed : Passed | DEBUG | *** New port %d ***, ntohs(expinfo->natport) | WARNING |
| AES Software Test: %d iterations, iter | DEBUG | ** skb len %d, dlen %d,(*pskb)->len, | WARNING |
| AES Software Test Duration: %d:%d, | DEBUG | ********* Non linear skb | WARNING |
| AES Hardware Test: %d iterations, iter | DEBUG | End of sdp %p, nexthdr | WARNING |
| AES Hardware Test Duration: %d:%d, | DEBUG | %s: unknown pairwise cipher %d, | WARNING |
| 3DES Software Test: %d iterations, iter | DEBUG | %s: unknown group cipher %d, | WARNING |
| 3DES Software Test Duration: %d:%d, | DEBUG | %s: unknown SIOCSIWAUTH flag %d, | WARNING |
| 3DES Hardware Test: %d iterations, iter | DEBUG | %s: unknown SIOCGIWAUTH flag %d, | WARNING |
| 3DES Hardware Test Duration: %d:%d, | DEBUG | %s: unknown algorithm %d, | WARNING |
| DES Software Test: %d iterations, iter | DEBUG | %s: key size %d is too large, | WARNING |
| DES Software Test Duration: %d:%d, | DEBUG | try_module_get failed \ | WARNING |
| DES Hardware Test: %d iterations, iter | DEBUG | %s: request_irq failed, dev->name | WARNING |
| DES Hardware Test Duration: %d:%d, | DEBUG | try_module_get failed | WARNING |
| SHA Software Test: %d iterations, iter | DEBUG | try_module_get failed \ | WARNING |
| SHA Software Test Duration: %d:%d, | DEBUG | %s: unknown pairwise cipher %d, | WARNING |
| SHA Hardware Test: %d iterations, iter | DEBUG | %s: unknown group cipher %d, | WARNING |
| SHA Hardware Test Duration: %d:%d, | DEBUG | %s: unknown SIOCSIWAUTH flag %d, | WARNING |
| MD5 Software Test: %d iterations, iter | DEBUG | %s: unknown SIOCGIWAUTH flag %d, | WARNING |
| MD5 Software Test Duration: %d:%d, | DEBUG | %s: unknown algorithm %d, | WARNING |
| MD5 Hardware Test: %d iterations, iter | DEBUG | %s: key size %d is too large, | WARNING |
| MD5 Hardware Test Duration: %d:%d, | DEBUG | unable to load %s, scan_modnames[mode] | WARNING |
| ./pnac/src/pnac/linux/kernel/xcalibur.c:209:#define DEBUG_PRINTK printk | DEBUG | Failed to mkdir /proc/net/madwifi | WARNING |
| bcmDeviceInit: registration failed | DEBUG | try_module_get failed | WARNING |
| bcmDeviceInit: pCdev Add failed | DEBUG | %s: request_irq failed, dev->name | WARNING |
| REG Size == 8 Bit | DEBUG | too many virtual ap's (already got %d), sc->sc_nvaps | WARNING |
| Value = %x ::: At Page = %x : Addr = %x | DEBUG | %s: request_irq failed, dev->name | WARNING |
| REG Size == 16 Bit | DEBUG | rix %u (%u) bad ratekbps %u mode %u, | WARNING |

| | | | |
|---|---|---|---|
| Value = %x ::: At Page = %x : Addr = %x | DEBUG | cix %u (%u) bad ratekbps %u mode %u, | WARNING |
| REG Size == 32 Bit | DEBUG | %s: no rates for %s?, | WARNING |
| Value = %x ::: At Page = %x : Addr = %x | DEBUG | no rates yet! mode %u, sc->sc_curmode | WARNING |
| REG Size == 64 Bit | DEBUG | %u.%u.%u.%u sent an invalid ICMP | WARNING |
| REG Size is not in 8/16/32/64 | DEBUG | dst cache overflow | WARNING |
| Written Value = %x ::: At Page = %x : Addr = %x | DEBUG | Neighbour table overflow. | WARNING |
| bcm_ioctl :Unknown Ioctl Case : | DEBUG | host %u.%u.%u.%u/if%d ignores | WARNING |
| =========Register Dump for Port Number # %d=========,port | DEBUG | martian destination %u.%u.%u.%u from | WARNING |
| %s : Read Status=%s data=%#x,regName[j], | DEBUG | martian source %u.%u.%u.%u from | WARNING |
| %s : Read Status=%s data=%#x,regName[j], | DEBUG | ll header: | WARNING |
| powerDeviceInit: device registration failed | DEBUG | %u.%u.%u.%u sent an invalid ICMP | WARNING |
| powerDeviceInit: adding device failed | DEBUG | dst cache overflow | WARNING |
| %s: Error: Big jump in pn number. TID=%d, from %x %x to %x %x. | DEBUG | Neighbour table overflow. | WARNING |
| %s: The MIC is corrupted. Drop this frame., __func__ | DEBUG | host %u.%u.%u.%u/if%d ignores | WARNING |
| %s: The MIC is OK. Still use this frame and update PN., __func__ | DEBUG | martian destination %u.%u.%u.%u from | WARNING |
| ADDBA send failed: recipient is not a 11n node | DEBUG | martian source %u.%u.%u.%u from | WARNING |
| Cannot Set Rate: %x, value | DEBUG | ll header: | WARNING |
| Getting Rate Series: %x,vap->iv_fixed_rate.series | DEBUG | %u.%u.%u.%u sent an invalid ICMP | WARNING |
| Getting Retry Series: %x,vap->iv_fixed_rate.retries | DEBUG | dst cache overflow | WARNING |
| IC Name: %s,ic->ic_dev->name | DEBUG | Neighbour table overflow. | WARNING |
| usage: rtparams rt_idx <0\|1> per <0..100> probe_intval <0..100> | DEBUG | host %u.%u.%u.%u/if%d ignores | WARNING |
| usage: acparams ac <0\|3> RTS <0\|1> aggr scaling <0..4> min mbps <0..250> | DEBUG | martian source %u.%u.%u.%u from | WARNING |
| usage: hbrparams ac <2> enable <0\|1> per_low <0..50> | DEBUG | ll header: | WARNING |
| %s(): ADDBA mode is AUTO, __func__ | DEBUG | martian destination %u.%u.%u.%u from | WARNING |
| %s(): Invalid TID value, __func__ | DEBUG | %u.%u.%u.%u sent an invalid ICMP | WARNING |
| %s(): ADDBA mode is AUTO, __func__ | DEBUG | dst cache overflow | WARNING |
| %s(): Invalid TID value, __func__ | DEBUG | Neighbour table overflow. | WARNING |
| %s(): Invalid TID value, __func__ | DEBUG | host %u.%u.%u.%u/if%d ignores | WARNING |
| Addba status IDLE | DEBUG | martian destination %u.%u.%u.%u | WARNIN |

| | | | |
|---|---|---|---|
| | | from | G |
| %s(): ADDBA mode is AUTO, __func__ | DEBUG | martian source %u.%u.%u.%u from | WARNIN G |
| %s(): Invalid TID value, __func__ | DEBUG | ll header: | WARNIN G |
| Error in ADD- no node available | DEBUG | Unable to create ip_set_list | ERROR |
| %s(): Channel capabilities do not match, chan flags 0x%x, | DEBUG | Unable to create ip_set_hash | ERROR |
| %s: cannot map channel to mode; freq %u flags 0x%x, | DEBUG | ip_conntrack_in: Frag of proto %u (hook=%u), | ERROR |
| ic_get_currentCountry not initialized yet | DEBUG | Unable to register netfilter socket option | ERROR |
| Country ie is %c%c%c, | DEBUG | Unable to create ip_conntrack_hash | ERROR |
| %s: wrong state transition from %d to %d, | DEBUG | Unable to create ip_conntrack slab cache | ERROR |
| %s: wrong state transition from %d to %d, | DEBUG | Unable to create ip_expect slab cache | ERROR |
| %s: wrong state transition from %d to %d, | DEBUG | Unable to create ip_set_iptreeb slab cache | ERROR |
| %s: wrong state transition from %d to %d, | DEBUG | Unable to create ip_set_iptreed slab cache | ERROR |
| %s: wrong state transition from %d to %d, | DEBUG | %s: cannot allocate space for %scompressor, fname, | ERROR |
| %s: wrong state transition from %d to %d, | DEBUG | %s: cannot allocate space for MPPC history, | ERROR |
| ieee80211_deliver_l2uf: no buf available | DEBUG | %s: cannot allocate space for MPPC history, | ERROR |
| %s: %s, vap->iv_dev->name, buf /* NB: no */ | DEBUG | %s: cannot load ARC4 module, fname | ERROR |
| %s: [%s] %s, vap->iv_dev->name, | DEBUG | %s: cannot load SHA1 module, fname | ERROR |
| %s: [%s] %s, vap->iv_dev->name, ether_sprintf(mac), buf | DEBUG | %s: CryptoAPI SHA1 digest size too small, fname | ERROR |
| [%s:%s] discard %s frame, %s, vap->iv_dev->name, | DEBUG | %s: cannot allocate space for SHA1 digest, fname | ERROR |
| [%s:%s] discard frame, %s, vap->iv_dev->name, | DEBUG | %s%d: trying to write outside history | ERROR |
| [%s:%s] discard %s information element, %s, | DEBUG | %s%d: trying to write outside history | ERROR |
| [%s:%s] discard information element, %s, | DEBUG | %s%d: trying to write outside history | ERROR |
| [%s:%s] discard %s frame, %s, vap->iv_dev->name, | DEBUG | %s%d: too big uncompressed packet: %d, | ERROR |
| [%s:%s] discard frame, %s, vap->iv_dev->name, | DEBUG | %s%d: encryption negotiated but not an | ERROR |
| HBR list dumpNode\tAddress\t\t\tState\tTrigger\t Block | DEBUG | %s%d: error - not an MPPC or MPPE frame | ERROR |
| Nodes informationAddress\t\t\tBlock\t\tDroped VI frames | DEBUG | Kernel doesn't provide ARC4 and/or SHA1 algorithms | ERROR |
| %d\t %2.2x:%2.2x:%2.2x:%2.2x:%2.2x:%2.2 x\t%s\t%s\t%s, | DEBUG | PPP: not interface or channel?? | ERROR |
| %2.2x:%2.2x:%2.2x:%2.2x:%2.2x:%2.2 x\t%s\t\t%d, | DEBUG | PPP: no memory (VJ compressor) | ERROR |
| [%d]\tFunction\t%s, j, ni->node_trace[i].funcp | DEBUG | failed to register PPP device (%d), err | ERROR |

| | | | |
|---|---|---|---|
| [%d]\tMacAddr\t%s, j, | DEBUG | PPP: no memory (VJ comp pkt) | ERROR |
| [%d]\tDescp\t\t%s, j, ni->node_trace[i].descp | DEBUG | PPP: no memory (comp pkt) | ERROR |
| [%d]\tValue\t\t%llu(0x%llx), j, ni->node_trace[i].value, | DEBUG | ppp: compressor dropped pkt | ERROR |
| ifmedia_add: null ifm | DEBUG | PPP: no memory (fragment) | ERROR |
| Adding entry for | DEBUG | PPP: VJ uncompressed error | ERROR |
| ifmedia_set: no match for 0x%x/0x%x, | DEBUG | ppp_decompress_frame: no memory | ERROR |
| ifmedia_set: target | DEBUG | ppp_mp_reconstruct bad seq %u < %u, | ERROR |
| ifmedia_set: setting to | DEBUG | PPP: couldn't register device %s (%d), | ERROR |
| ifmedia_ioctl: switching %s to , dev->name | DEBUG | ppp: destroying ppp struct %p but dead=%d | ERROR |
| ifmedia_match: multiple match for | DEBUG | ppp: destroying undead channel %p !, | ERROR |
| <unknown type> | DEBUG | PPP: removing module but units remain! | ERROR |
| desc->ifmt_string | DEBUG | PPP: failed to unregister PPP device | ERROR |
| mode %s, desc->ifmt_string | DEBUG | %s: cannot allocate space for %scompressor, fname, | ERROR |
| <unknown subtype> | DEBUG | %s: cannot allocate space for MPPC history, | ERROR |
| %s, desc->ifmt_string | DEBUG | %s: cannot allocate space for MPPC history, | ERROR |
| %s%s, seen_option++ ? , : , | DEBUG | %s: cannot load ARC4 module, fname | ERROR |
| %s%s, seen_option++ ? , : , | DEBUG | %s: cannot load SHA1 module, fname | ERROR |
| %s, seen_option ? > : | DEBUG | %s: CryptoAPI SHA1 digest size too small, fname | ERROR |
| %s: %s, dev->name, buf | DEBUG | %s: cannot allocate space for SHA1 digest, fname | ERROR |
| %s: no memory for sysctl table!, __func__ | DEBUG | %s%d: trying to write outside history | ERROR |
| %s: failed to register sysctls!, vap->iv_dev->name | DEBUG | %s%d: trying to write outside history | ERROR |
| Atheros HAL assertion failure: %s: line %u: %s, | DEBUG | %s%d: trying to write outside history | ERROR |
| ath_hal: logging to %s %s, ath_hal_logfile, | DEBUG | %s%d: too big uncompressed packet: %d, | ERROR |
| ath_hal: logging disabled | DEBUG | %s%d: encryption negotiated but not an | ERROR |
| %s%s, sep, ath_hal_buildopts[i] | DEBUG | %s%d: error - not an MPPC or MPPE frame | ERROR |
| ath_pci: No devices found, driver not installed. | DEBUG | Kernel doesn't provide ARC4 and/or SHA1 algorithms | ERROR |
| ---:%d pri:%d qd:%u ad:%u sd:%u tot:%u amp:%d %02x:%02x:%02x, | DEBUG | PPP: not interface or channel?? | ERROR |
| SC Pushbutton Notify on %s::%s,dev->name,vap->iv_dev->name | DEBUG | PPP: no memory (VJ compressor) | ERROR |
| Could not find Board Configuration Data | DEBUG | failed to register PPP device (%d), err | ERROR |
| Could not find Radio Configuration data | DEBUG | PPP: no memory (comp pkt) | ERROR |
| %s: No device, __func__ | DEBUG | ppp: compressor dropped pkt | ERROR |
| ath_ahb: No devices found, driver not installed. | DEBUG | PPP: no memory (VJ comp pkt) | ERROR |
| PKTLOG_TAG %s:proc_dointvec failed, __FUNCTION__ | DEBUG | PPP: no memory (comp pkt) | ERROR |
| PKTLOG_TAG %s:proc_dointvec failed, | DEBUG | PPP: no memory (fragment) | ERROR |

| | | | |
|---|---|---|---|
| __FUNCTION__ | | | |
| %s: failed to register sysctls!, proc_name | DEBUG | PPP: VJ uncompressed error | ERROR |
| PKTLOG_TAG %s: proc_mkdir failed, __FUNCTION__ | DEBUG | ppp_decompress_frame: no memory | ERROR |
| PKTLOG_TAG %s: pktlog_attach failed for %s, | DEBUG | ppp_mp_reconstruct bad seq %u < %u, | ERROR |
| PKTLOG_TAG %s:allocation failed for pl_info, __FUNCTION__ | DEBUG | PPP: couldn't register device %s (%d), | ERROR |
| PKTLOG_TAG %s:allocation failed for pl_info, __FUNCTION__ | DEBUG | ppp: destroying ppp struct %p but dead=%d | ERROR |
| PKTLOG_TAG %s: create_proc_entry failed for %s, | DEBUG | ppp: destroying undead channel %p !, | ERROR |
| PKTLOG_TAG %s: sysctl register failed for %s, | DEBUG | PPP: removing module but units remain! | ERROR |
| PKTLOG_TAG %s: page fault out of range, __FUNCTION__ | DEBUG | PPP: failed to unregister PPP device | ERROR |
| PKTLOG_TAG %s: page fault out of range, __FUNCTION__ | DEBUG | JBD: bad block at offset %u, | ERROR |
| PKTLOG_TAG %s: Log buffer unavailable, __FUNCTION__ | DEBUG | JBD: corrupted journal superblock | ERROR |
| PKTLOG_TAG | DEBUG | JBD: bad block at offset %u, | ERROR |
| Logging should be disabled before changing bufer size | DEBUG | JBD: Failed to read block at offset %u, | ERROR |
| %s:allocation failed for pl_info, __func__ | DEBUG | JBD: error %d scanning journal, err | ERROR |
| %s: Unable to allocate buffer, __func__ | DEBUG | JBD: IO error %d recovering block | ERROR |
| %s:allocation failed for pl_info, __func__ | DEBUG | ./Logs_kernel.txt:303:KERN_ERR | ERROR |
| %s: Unable to allocate buffer, __func__ | DEBUG | ./Logs_kernel.txt:304:KERN_ERR | ERROR |
| Atheros HAL assertion failure: %s: line %u: %s, | DEBUG | JBD: recovery pass %d ended at | ERROR |
| ath_hal: logging to %s %s, ath_hal_logfile, | DEBUG | %s: %s:%d: BAD SESSION MAGIC \ | ERROR |
| ath_hal: logging disabled | DEBUG | %s: %s:%d: BAD TUNNEL MAGIC \ | ERROR |
| %s%s, sep, ath_hal_buildopts[i] | DEBUG | msg->msg_namelen wrong, %d, msg->msg_namelen | ERROR |
| failed to allocate rx descriptors: %d, error | DEBUG | addr family wrong: %d, usin->sin_family | ERROR |
| ath_stoprecv: rx queue %p, link %p, | DEBUG | udp addr=%x/%hu, usin->sin_addr.s_addr, usin->sin_port | ERROR |
| no mpdu (%s), __func__ | DEBUG | %s: %s:%d: BAD TUNNEL MAGIC | ERROR |
| Reset rx chain mask. Do internal reset. (%s), __func__ | DEBUG | %s: %s:%d: BAD TUNNEL MAGIC | ERROR |
| OS_CANCEL_TIMER failed!! | DEBUG | socki_lookup: socket file changed! | ERROR |
| %s: unable to allocate channel table, __func__ | DEBUG | %s: %s:%d: BAD TUNNEL MAGIC | ERROR |
| %s: unable to collect channel list from hal; | DEBUG | %s: %s:%d: BAD SESSION MAGIC \ | ERROR |
| %s: cannot map channel to mode; freq %u flags 0x%x, | DEBUG | %s: %s:%d: BAD TUNNEL MAGIC \ | ERROR |
| %s: unable to reset channel %u (%uMhz) | DEBUG | msg->msg_namelen wrong, %d, msg->msg_namelen | ERROR |
| %s: unable to restart recv logic, | DEBUG | addr family wrong: %d, usin->sin_family | ERROR |
| %s: start DFS WAIT period on channel %d, __func__,sc->sc_curchan.channel | DEBUG | udp addr=%x/%hu, usin->sin_addr.s_addr, usin->sin_port | ERROR |

| | | | |
|---|---|---|---|
| %s: cancel DFS WAIT period on channel %d, __func__, sc->sc_curchan.channel | DEBUG | %s: %s:%d: BAD TUNNEL MAGIC | ERROR |
| Non-DFS channel, cancelling previous DFS wait timer channel %d, sc->sc_curchan.channel | DEBUG | %s: %s:%d: BAD TUNNEL MAGIC | ERROR |
| %s: unable to reset hardware; hal status %u | DEBUG | socki_lookup: socket file changed! | ERROR |
| %s: unable to start recv logic, __func__ | DEBUG | %s: %s:%d: BAD TUNNEL MAGIC | ERROR |
| %s: unable to start recv logic, __func__ | DEBUG | %s: %s:%d: BAD SESSION MAGIC \ | ERROR |
| %s: unable to reset hardware; hal status %u, | DEBUG | %s: %s:%d: BAD TUNNEL MAGIC \ | ERROR |
| hardware error; reseting | DEBUG | msg->msg_namelen wrong, %d, msg->msg_namelen | ERROR |
| rx FIFO overrun; reseting | DEBUG | addr family wrong: %d, usin->sin_family | ERROR |
| %s: During Wow Sleep and got BMISS, __func__ | DEBUG | udp addr=%x/%hu, usin->sin_addr.s_addr, usin->sin_port | ERROR |
| AC\tRTS \tAggr Scaling\tMin Rate(Kbps)\tHBR \tPER LOW THRESHOLD | DEBUG | %s: %s:%d: BAD TUNNEL MAGIC | ERROR |
| BE\t%s\t\t%d\t%6d\t\t%s\t%d, | DEBUG | %s: %s:%d: BAD TUNNEL MAGIC | ERROR |
| BK\t%s\t\t%d\t%6d\t\t%s\t%d, | DEBUG | socki_lookup: socket file changed! | ERROR |
| VI\t%s\t\t%d\t%6d\t\t%s\t%d, | DEBUG | %s: %s:%d: BAD TUNNEL MAGIC | ERROR |
| VO\t%s\t\t%d\t%6d\t\t%s\t%d, | DEBUG | rebootHook: null function pointer | ERROR |
| --%d,%p,%lu:0x%x 0x%x 0x%p 0x%x 0x%x 0x%x 0x%x, | DEBUG | Bad ioctl command | ERROR |
| bb state: 0x%08x 0x%08x, bbstate(sc, 4ul), bbstate(sc, 5ul) | DEBUG | fResetMod: Failed to configure gpio pin | ERROR |
| %08x %08x %08x %08x %08x %08x %08x %08x%08x %08x %08x %08x, | DEBUG | fResetMod: Failed to register interrupt handler | ERROR |
| noise floor: (%d, %d) (%d, %d) (%d, %d), | DEBUG | registering char device failed | ERROR |
| %p: %08x %08x %08x %08x %08x %08x %08x %08x %08x %08x %08x %08x, | DEBUG | unregistering char device failed | ERROR |
| --%d,%p,%lu:0x%x 0x%x 0x%p 0x%x 0x%x 0x%x 0x%x, | DEBUG | proc entry delete failed | ERROR |
| %08x %08x %08x %08x %08x %08x %08x %08x%08x %08x %08x %08x, | DEBUG | proc entry initialization failed | ERROR |
| %s: unable to allocate device object., __func__ | DEBUG | testCompHandler: received %s from %d, (char *)pInBuf, | ERROR |
| %s: unable to attach hardware; HAL status %u, | DEBUG | UMI proto registration failed %d,ret | ERROR |
| %s: HAL ABI msmatch; | DEBUG | AF_UMI registration failed %d,ret | ERROR |
| %s: Warning, using only %u entries in %u key cache, | DEBUG | umi initialization failed %d,ret | ERROR |
| unable to setup a beacon xmit queue! | DEBUG | kernel UMI registration failed! | ERROR |
| unable to setup CAB xmit queue! | DEBUG | ./Logs_kernel.txt:447:KERN_ERR | ERROR |
| unable to setup xmit queue for BE traffic! | DEBUG | ERROR msm not found properly %d, len %d, msm, | ERROR |
| %s DFS attach failed, __func__ | DEBUG | ModExp returned Error | ERROR |
| %s: Invalid interface id = %u, __func__, if_id | DEBUG | ModExp returned Error | ERROR |
| %s:grppoll Buf allocation failed | DEBUG | %s: 0x%p len %u, tag, p, (unsigned | ERROR |

| | | | |
|---|---|---|---|
| ,__func__ | | int)len | |
| %s: unable to start recv logic, | DEBUG | %03d:, i | ERROR |
| %s: Invalid interface id = %u, __func__, if_id | DEBUG | %02x, ((unsigned char *)p)[i] | ERROR |
| %s: unable to allocate channel table, __func__ | DEBUG | mic check failed | ERROR |
| %s: Tx Antenna Switch. Do internal reset., __func__ | DEBUG | %s: 0x%p len %u, tag, p, (unsigned int)len | ERROR |
| Radar found on channel %d (%d MHz), | DEBUG | %03d:, i | ERROR |
| End of DFS wait period | DEBUG | %02x, ((unsigned char *)p)[i] | ERROR |
| %s error allocating beacon, __func__ | DEBUG | mic check failed | ERROR |
| failed to allocate UAPSD QoS NULL tx descriptors: %d, error | DEBUG | [%s] Wrong parameters, __func__ | ERROR |
| failed to allocate UAPSD QoS NULL wbuf | DEBUG | [%s] Wrong Key length, __func__ | ERROR |
| %s: unable to allocate channel table, __func__ | DEBUG | [%s] Wrong parameters, __func__ | ERROR |
| %s: unable to update h/w beacon queue parameters, | DEBUG | [%s] Wrong Key length, __func__ | ERROR |
| ALREADY ACTIVATED | DEBUG | [%s] Wrong parameters, __func__ | ERROR |
| %s: missed %u consecutive beacons, | DEBUG | [%s] Wrong Key length, __func__ | ERROR |
| %s: busy times: rx_clear=%d, rx_frame=%d, tx_frame=%d, __func__, rx_clear, rx_frame, tx_frame | DEBUG | [%s] Wrong parameters, __func__ | ERROR |
| %s: unable to obtain busy times, __func__ | DEBUG | [%s] Wrong Key length, __func__ | ERROR |
| %s: beacon is officially stuck, | DEBUG | [%s]: Wrong parameters, __func__ | ERROR |
| Busy environment detected | DEBUG | [%s] Wrong Key Length %d, __func__, des_key_len | ERROR |
| Inteference detected | DEBUG | [%s] Wrong parameters %d, __func__, des_key_len | ERROR |
| rx_clear=%d, rx_frame=%d, tx_frame=%d, | DEBUG | [%s] Wrong Key Length %d, __func__, des_key_len | ERROR |
| %s: resume beacon xmit after %u misses, | DEBUG | [%s] Wrong parameters, __func__ | ERROR |
| %s: stuck beacon; resetting (bmiss count %u), | DEBUG | [%s] Wrong Key Length, __func__ | ERROR |
| EMPTY QUEUE | DEBUG | [%s] Wrong parameters, __func__ | ERROR |
| SWRInfo: seqno %d isswRetry %d retryCnt %d,wh ? (*(u_int16_t *)&wh->i_seq[0]) >> 4 : 0, bf->bf_isswretry,bf->bf_swretries | DEBUG | [%s] Wrong Key Length, __func__ | ERROR |
| Buffer #%08X --> Next#%08X Prev#%08X Last#%08X,bf, TAILQ_NEXT(bf,bf_list), | DEBUG | [%s] Wrong parameters, __func__ | ERROR |
| Stas#%08X flag#%08X Node#%08X, bf->bf_status, bf->bf_flags, bf->bf_node | DEBUG | [%s] Wrong parameters, __func__ | ERROR |
| Descr #%08X --> Next#%08X Data#%08X Ctl0#%08X Ctl1#%08X, bf->bf_daddr, ds->ds_link, ds->ds_data, ds->ds_ctl0, ds->ds_ctl1 | DEBUG | [%s] Wrong parameters, __func__ | ERROR |
| Ctl2#%08X Ctl3#%08X Sta0#%08X Sta1#%08X,ds->ds_hw[0], ds->ds_hw[1], lastds->ds_hw[2], lastds->ds_hw[3] | DEBUG | [%s] Wrong parameters, __func__ | ERROR |
| Error entering wow mode | DEBUG | device name=%s not found, pReq- | ERROR |

| | | | |
|---|---|---|---|
| | | >ifName | |
| Wakingup due to wow signal | DEBUG | unable to register KIFDEV to UMI | ERROR |
| %s, wowStatus = 0x%x, __func__, wowStatus | DEBUG | ERROR: %s: Timeout at page %#0x addr %#0x | ERROR |
| Pattern added already | DEBUG | ERROR: %s: Timeout at page %#0x addr %#0x | ERROR |
| Error : All the %d pattern are in use. Cannot add a new pattern , MAX_NUM_PATTERN | DEBUG | Invalid IOCTL %#08x, cmd | ERROR |
| Pattern added to entry %d ,i | DEBUG | %s: unable to register device, dev->name | ERROR |
| Remove wake up pattern | DEBUG | ath_pci: 32-bit DMA not available | ERROR |
| mask = %p pat = %p ,maskBytes,patternBytes | DEBUG | ath_pci: cannot reserve PCI memory region | ERROR |
| mask = %x pat = %x ,(u_int32_t)maskBytes, (u_int32_t)patternBytes | DEBUG | ath_pci: cannot remap PCI memory region) ; | ERROR |
| Pattern Removed from entry %d ,i | DEBUG | ath_pci: no memory for device state | ERROR |
| Error : Pattern not found | DEBUG | %s: unable to register device, dev->name | ERROR |
| PPM STATE ILLEGAL %x %x, forcePpmStateCur, afp->forceState | DEBUG | ath_dev_probe: no memory for device state | ERROR |
| FORCE_PPM %4d %6.6x %8.8x %8.8x %8.8x %3.3x %4.4x, | DEBUG | %s: no memory for device state, __func__ | ERROR |
| failed to allocate tx descriptors: %d, error | DEBUG | kernel MIBCTL registration failed! | ERROR |
| failed to allocate beacon descripotrs: %d, error | DEBUG | Bad ioctl command | ERROR |
| failed to allocate UAPSD descripotrs: %d, error | DEBUG | WpsMod: Failed to configure gpio pin | ERROR |
| hal qnum %u out of range, max %u!, | DEBUG | WpsMod: Failed to register interrupt handler | ERROR |
| HAL AC %u out of range, max %zu!, | DEBUG | registering char device failed | ERROR |
| HAL AC %u out of range, max %zu!, | DEBUG | unregistering char device failed | ERROR |
| %s: unable to update hardware queue %u!, | DEBUG | %s:%d - ERROR: non-NULL node pointer in %p, %p<%s>! | ERROR |
| Multicast Q: | DEBUG | %s:%d - ERROR: non-NULL node pointer in %p, %p<%s>! | ERROR |
| %p , buf | DEBUG | can't alloc name %s, name | ERROR |
| buf flags - 0x%08x --------- , buf->bf_flags | DEBUG | %s: unable to register device, dev->name | ERROR |
| buf status - 0x%08x, buf->bf_status | DEBUG | failed to automatically load module: %s; \ | ERROR |
| # frames in aggr - %d, length of aggregate - %d, length of frame - %d, sequence number - %d, tidno - %d, | DEBUG | Unable to load needed module: %s; no support for \ | ERROR |
| isdata: %d isaggr: %d isampdu: %d ht: %d isretried: %d isxretried: %d shpreamble: %d isbar: %d ispspoll: %d aggrburst: %d calcairtime: %d qosnulleosp: %d, | DEBUG | Module \%s\ is not known, buf | ERROR |
| %p: 0x%08x 0x%08x 0x%08x 0x%08x 0x%08x 0x%08x 0x%08x 0x%08x 0x%08x 0x%08x, | DEBUG | Error loading module \%s\, buf | ERROR |
| 0x%08x 0x%08x 0x%08x 0x%08x 0x%08x 0x%08x 0x%08x 0x%08x 0x%08x | DEBUG | Module \%s\ failed to initialize, buf | ERROR |

| | | | |
|---|---|---|---|
| 0x%08x 0x%08x, | | | |
| 0x%08x 0x%08x 0x%08x 0x%08x, | DEBUG | ath_pci: 32-bit DMA not available | ERROR |
| sc_txq[%d] : , i | DEBUG | ath_pci: cannot reserve PCI memory region | ERROR |
| tid %p pause %d : , tid, tid->paused | DEBUG | ath_pci: cannot remap PCI memory region) ; | ERROR |
| %d: %p , j, tid->tx_buf[j] | DEBUG | ath_pci: no memory for device state | ERROR |
| %p , buf | DEBUG | %s: unable to attach hardware: '%s' (HAL status %u), | ERROR |
| axq_q: | DEBUG | %s: HAL ABI mismatch; | ERROR |
| %s: unable to reset hardware; hal status %u, __func__, status | DEBUG | %s: failed to allocate descriptors: %d, | ERROR |
| ****ASSERTION HIT**** | DEBUG | %s: unable to setup a beacon xmit queue!, | ERROR |
| MacAddr=%s, | DEBUG | %s: unable to setup CAB xmit queue!, | ERROR |
| TxBufIdx=%d, i | DEBUG | %s: unable to setup xmit queue for %s traffic!, | ERROR |
| Tid=%d, tidno | DEBUG | %s: unable to register device, dev->name | ERROR |
| AthBuf=%p, tid->tx_buf[i] | DEBUG | %s: autocreation of VAP failed: %d, | ERROR |
| %s: unable to reset hardware; hal status %u, | DEBUG | ath_dev_probe: no memory for device state | ERROR |
| %s: unable to reset hardware; hal status %u, | DEBUG | kdot11RogueAPEnable called with NULL argument. | ERROR |
| %s: unable to start recv logic, | DEBUG | kdot11RogueAPEnable: can not add more interfaces | ERROR |
| _fmt, __VA_ARGS__ \ | DEBUG | kdot11RogueAPGetState called with NULL argument. | ERROR |
| sample_pri=%d is a multiple of refpri=%d, sample_pri, refpri | DEBUG | kdot11RogueAPDisable called with NULL argument. | ERROR |
| ==========ft->ft_numfilters=%u==========, ft->ft_numfilters | DEBUG | %s: SKB does not exist., __FUNCTION__ | ERROR |
| filter[%d] filterID = %d rf_numpulses=%u; rf->rf_minpri=%u; rf->rf_maxpri=%u; rf->rf_threshold=%u; rf->rf_filterlen=%u; rf->rf_mindur=%u; rf->rf_maxdur=%u,j, rf->rf_pulseid, | DEBUG | %s: recvd invalid skb | ERROR |
| NOL | DEBUG | unable to register KIFDEV to UMI | ERROR |
| WARNING!!! 10 minute CAC period as channel is a weather radar channel | DEBUG | The system is going to factory defaults.....!!! | CRITICAL |
| %s disable detects, __func__ | DEBUG | %s, msg | CRITICAL |
| %s enable detects, __func__ | DEBUG | %02x, *(data + i) | CRITICAL |
| %s disable FFT val=0x%x , __func__, val | DEBUG | Inside crypt_open in driver ###### | CRITICAL |
| %s enable FFT val=0x%x , __func__, val | DEBUG | Inside crypt_release in driver ###### | CRITICAL |
| %s debug level now = 0x%x , __func__, dfs_debug_level | DEBUG | Inside crypt_init module in driver @@@@@@@@ | CRITICAL |
| RateTable:%d, maxvalidrate:%d, ratemax:%d, pRc->rateTableSize,k,pRc->rateMaxPhy | DEBUG | Inside crypt_cleanup module in driver @@@@@@@@ | CRITICAL |
| %s: txRate value of 0x%x is bad., __FUNCTION__, txRate | DEBUG | SKB is null : %p ,skb | CRITICAL |
| Valid Rate Table:- | DEBUG | DST is null : %p ,dst | CRITICAL |

| | | | |
|---|---|---|---|
| Index:%d, value:%d, code:%x, rate:%d, flag:%x, i, (int)validRateIndex[i], | DEBUG | DEV is null %p %p ,dev,dst | CRITICAL |
| RateTable:%d, maxvalidrate:%d, ratemax:%d, pRc->rateTableSize,k,pRc->rateMaxPhy | DEBUG | Packet is Fragmented %d,pBufMgr->len | CRITICAL |
| Can't allocate memory for ath_vap. | DEBUG | Marked the packet proto:%d sip:%x dip:%x sport:%d dport:%d spi:%d,isr:%p:%p %p | CRITICAL |
| Unable to add an interface for ath_dev. | DEBUG | SAV CHECK FAILED IN DECRYPTION | CRITICAL |
| %s: [%02u] %-7s , tag, ix, ciphers[hk->kv_type] | DEBUG | FAST PATH Breaks on BUF CHECK | CRITICAL |
| %02x, hk->kv_val[i] | DEBUG | FAST PATH Breaks on DST CHECK | CRITICAL |
| mac %02x-%02x-%02x-%02x-%02x-%02x, mac[0], mac[1], mac[2], mac[3], mac[4], mac[5] | DEBUG | FAST PATH Breaks on MTU %d %d %d,bufMgrLen(pBufMgr),mtu,dst_mtu(pDst->path) | CRITICAL |
| mac 00-00-00-00-00-00 | DEBUG | FAST PATH Breaks on MAX PACKET %d %d,bufMgrLen(pBufMgr),IP_MAX_PACKET | CRITICAL |
| %02x, hk->kv_mic[i] | DEBUG | SAV CHECK FAILED IN ENCRYPTION | CRITICAL |
| txmic | DEBUG | Match Found proto %d spi %d,pPktInfo->proto,pFlowEntry->pre.spi | CRITICAL |
| %02x, hk->kv_txmic[i] | DEBUG | PRE: proto: %u srcip:%u.%u.%u.%u sport :%u dstip: %u.%u.%u.%u dport: %u, | CRITICAL |
| Cannot support setting tx and rx keys individually | DEBUG | POST: proto: %u srcip:%u.%u.%u.%u sport :%u dstip: %u.%u.%u.%u dport: %u, | CRITICAL |
| bogus frame type 0x%x (%s), | DEBUG | Clearing the ISR %p,p | CRITICAL |
| ERROR: ieee80211_encap ret NULL | DEBUG | PROTO:%d %u.%u.%u.%u--->%u.%u.%u.%u, | CRITICAL |
| ERROR: ath_amsdu_attach not called | DEBUG | ESP-DONE: %p %p,sav,m | CRITICAL |
| %s: no memory for cwm attach, __func__ | DEBUG | ESP-BAD: %p %p,sav,m | CRITICAL |
| %s: error - acw NULL. Possible attach failure, __func__ | DEBUG | Bug in ip_route_input_slow(). | CRITICAL |
| %s: unable to abort tx dma, __func__ | DEBUG | Bug in ip_route_input_slow(). | CRITICAL |
| %s: no memory for ff attach, __func__ | DEBUG | Bug in ip_route_input \ | CRITICAL |
| Failed to initiate PBC based enrolle association | DEBUG | Bug in ip_route_input_slow(). | CRITICAL |
| KERN_EMERG Returing error in INTR registration | DEBUG | AH: Assigning the secure flags for sav :%p,sav | CRITICAL |
| KERN_EMERG Initialzing Wps module | DEBUG | ESP: Assigning the secure flags for sav :%p skb:%p src:%x dst:%x,sav,skb,ip->ip_src.s_addr,ip->ip_dst.s_addr | CRITICAL |
| %s:%d %s, __FILE__, __LINE__, __func__ | DEBUG | %s Buffer %d mtu %d path mtu %d header %d trailer %d,__func__,bufMgrLen(pBufMgr),mtu,dst_mtu(pDst->path),pDst->header_len,pDst->trailer_len | CRITICAL |

# Appendix E. RJ-45 Pin-outs

| Signal | RJ-45 Cable<br>RJ-45 PIN | Adapter<br>DB-9 PIN | Signal |
|---|---|---|---|
| CTS | NC | NC | NC |
| DTR | NC | NC | NC |
| TxD | 6 | 3 | RxD |
| GND | 5 | 5 | GND |
| GND | 4 | 5 | GND |
| RxD | 3 | 2 | TxD |
| DSR | NC | NC | NC |
| RTS | NC | NC | NC |

# Appendix F. Product Statement

## 1. DSR-1000N

**Federal Communications Commission (FCC) Compliance Notice: Radio Frequency Notice**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC Radiation Exposure Statement**

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference, and
2) This device must accept any interference received, including interference that may cause undesired operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a spectrum distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

This transmitter is restricted to indoor use in the 5150MHz to 5250MHz frequency range.

**Non-modification Statement**

Use only the integral antenna supplied by the manufacturer when operating this device. Unauthorized antennas, modifications, or attachments could damage the TI Navigator access point and violate FCC regulations. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

**Canadian Department of Communications Industry Canada (IC) Notice**

This Class B digital apparatus complies with Canadian ICES-003 and RSS-210. Cet appareil numérique de la classe B est conforme à la norme NMB-003 et CNR-210 du Canada.

**ndustry Canada Statement**

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference, and
2) This device must accept any interference received, including interference that may cause undesired operation.

**IMPORTANT NOTE: Radiation Exposure Statement**

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. To maintain compliance with IC RF exposure compliance requirements, please follow operation instruction as documented in this manual.

This transmitter is restricted to indoor use in the 5150MHz to 5250MHz frequency range.

**Europe – EU Declaration of Conformity**

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- EN 60950-1: 2006+A11:2009
Safety of information technology equipment

- EN 300 328 V1.7.1 (2006-10)
Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

- EN 301 893-1 V1.5.1 (2008-12)
Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive

- EN 301 489-17 V1.3.2 (2008-04) and EN 301 489-1 V1.8.1 (2008-04)
Electromagnetic compatibility and Radio spectrum Matters (ERM); Electro Magnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries under the following conditions and/or with the following restrictions:

- In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

- This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the enduser should contact the national spectrum authority in France.

This device is a 5 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries under the following conditions and/or with the following restrictions:

- This device may only be used indoors in the frequency bands 5150 – 5250 MHz.

- In France and Luxembourg a limited implementation of the frequency bands 5150 – 5250 MHz and 5250 – 5350 MHz. In Luxermbourg it is not allowed to make use of the frequency band 5470 – 5725 MHz. End-users are encouraged to contact the national spectrum authorities in France and Luxembourg in order to obtain the latest information about any restrictions in the 5 GHz frequency band(s).

CE 0560

| | |
|---|---|
| cs Česky [Czech] | [D-Link Corporation] tímto prohlašuje, že tento [DSR-1000N] je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES. |
| da Dansk [Danish] | Undertegnede [D-Link Corporation] erklærer herved, at følgende udstyr [DSR-1000N] overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF. |
| de Deutsch [German] | Hiermit erklärt [D-Link Corporation], dass sich das Gerät [DSR-1000N] in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet. |
| et Eesti [Estonian] | Käesolevaga kinnitab [D-Link Corporation] seadme [DSR-1000N] vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele. |
| en English | Hereby, [D-Link Corporation], declares that this [DSR-1000N] is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. |
| es Español [Spanish] | Por medio de la presente [D-Link Corporation] declara que el [DSR-1000N] cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE. |
| el Ελληνική [Greek] | ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ [D-Link Corporation] ΔΗΛΩΝΕΙ ΟΤΙ [DSR-1000N] ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ. |
| fr Français [French] | Par la présente [D-Link Corporation] déclare que l'appareil [DSR-1000N] est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE. |
| it Italiano [Italian] | Con la presente [D-Link Corporation] dichiara che questo [DSR-1000N] è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE. |
| Latviski [Latvian] | Ar šo [D-Link Corporation] deklarē, ka [DSR-1000N] atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem. |
| Lietuvių [Lithuanian] | Šiuo [D-Link Corporation] deklaruoja, kad šis [DSR-1000N] atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas. |
| nl Nederlands [Dutch] | Hierbij verklaart [D-Link Corporation] dat het toestel [DSR-1000N] in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG. |
| mt Malti [Maltese] | Hawnhekk, [D-Link Corporation], jiddikjara li dan [DSR-1000N] jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC. |
| hu Magyar [Hungarian] | Alulírott, [D-Link Corporation] nyilatkozom, hogy a [DSR-1000N] megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak. |
| pl Polski [Polish] | Niniejszym [D-Link Corporation] oświadcza, że [DSR-1000N] jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC. |

| | |
|---|---|
| pt Português [Portuguese] | [D-Link Corporation] declara que este [DSR-1000N]está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE. |
| sl Slovensko [Slovenian] | [D-Link Corporation] izjavlja, da je ta [DSR-1000N] v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES. |
| Slovensky [Slovak] | [D-Link Corporation] týmto vyhlasuje, že [DSR-1000N] spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES. |
| fi Suomi [Finnish] | [D-Link Corporation] vakuuttaa täten että [DSR-1000N] tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen. |
| sv Svenska [Swedish] | Härmed intygar [D-Link Corporation] att denna [DSR-1000N] står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG. |

# 2.DSR-500N

**Federal Communications Commission (FCC) Compliance Notice: Radio Frequency Notice**
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC Radiation Exposure Statement**
This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference, and
2) This device must accept any interference received, including interference that may cause undesired operation.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a spectrum distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

This transmitter is restricted to indoor use in the 5150MHz to 5250MHz frequency range.

**Non-modification Statement**
Use only the integral antenna supplied by the manufacturer when operating this device. Unauthorized antennas, modifications, or attachments could damage the TI Navigator access point and violate FCC regulations. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

**Canadian Department of Communications Industry Canada (IC) Notice**
This Class B digital apparatus complies with Canadian ICES-003 and RSS-210. Cet appareil numérique de la classe B est conforme à la norme NMB-003 et CNR-210 du Canada.

**Industry Canada Statement**
This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

1) This device may not cause harmful interference, and
2) This device must accept any interference received, including interference that may cause undesired operation.

**IMPORTANT NOTE: Radiation Exposure Statement**
This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment.
End users must follow the specific operating instructions for satisfying RF exposure compliance.
To maintain compliance with IC RF exposure compliance requirements, please follow operation instruction as documented in this manual.

**Europe – EU Declaration of Conformity**

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the R&TTE Directive 1999/5/EC:

- EN 60950-1: 2006+A11:2009
  Safety of information technology equipment

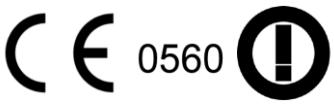
- EN 300 328 V1.7.1 (2006-10)
  Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive

- EN 301 489-17 V1.3.2 (2008-04) and EN 301 489-1 V1.8.1 (2008-04)
  Electromagnetic compatibility and Radio spectrum Matters (ERM); Electro Magnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries under the following conditions and/or with the following restrictions:

- In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

- This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the enduser should contact the national spectrum authority in France.



| | |
|---|---|
| cs Česky [Czech] | [D-Link Corporation] tímto prohlašuje, že tento [DSR-500N] je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES. |
| da Dansk [Danish] | Undertegnede [D-Link Corporation] erklærer herved, at følgende udstyr [DSR-500N] overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF. |
| de Deutsch [German] | Hiermit erklärt [D-Link Corporation], dass sich das Gerät [DSR-500N] in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet. |
| et Eesti [Estonian] | Käesolevaga kinnitab [D-Link Corporation] seadme [DSR-500N] vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele. |
| en English | Hereby, [D-Link Corporation], declares that this [DSR-500N] is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. |
| es Español [Spanish] | Por medio de la presente [D-Link Corporation] declara que el [DSR-500N] cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE. |
| el Ελληνική [Greek] | ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ [D-Link Corporation] ΔΗΛΩΝΕΙ ΟΤΙ [DSR-500N] ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ. |
| fr Français [French] | Par la présente [D-Link Corporation] déclare que l'appareil [DSR-500N] est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE. |
| it Italiano [Italian] | Con la presente [D-Link Corporation] dichiara che questo [DSR-500N] è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE. |
| Latviski [Latvian] | Ar šo [D-Link Corporation] deklarē, ka [DSR-500N] atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem. |
| Lietuvių [Lithuanian] | Šiuo [D-Link Corporation] deklaruoja, kad šis [DSR-500N] atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas. |
| nl Nederlands [Dutch] | Hierbij verklaart [D-Link Corporation] dat het toestel [DSR-500N] in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG. |
| mt Malti [Maltese] | Hawnhekk, [D-Link Corporation], jiddikjara li dan [DSR-500N] jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC. |
| hu Magyar [Hungarian] | Alulírott, [D-Link Corporation] nyilatkozom, hogy a [DSR-500N] megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak. |
| pl Polski [Polish] | Niniejszym [D-Link Corporation] oświadcza, że [DSR-500N] jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC. |

| | |
|---|---|
| pt Português [Portuguese] | [D-Link Corporation] declara que este [DSR-500N]está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE. |
| sl Slovensko [Slovenian] | [D-Link Corporation] izjavlja, da je ta [DSR-500N] v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES. |
| Slovensky [Slovak] | [D-Link Corporation] týmto vyhlasuje, že [DSR-500N] spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES. |
| fi Suomi [Finnish] | [D-Link Corporation] vakuuttaa täten että [DSR-500N] tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen. |
| sw Svenska [Swedish] | Härmed intygar [D-Link Corporation] att denna [DSR-500N] står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG. |

# 3.DSR-250N

**Federal Communication Commission Interference Statement**
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC Caution**:
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**RSS-GEN 7.1.4**:
User Manual for Transmitters with Detachable Antennas

The user manual of transmitter devices equipped with detachable antennas shall contain the following information in a conspicuous location:
This device has been designed to operate with the antennas listed below, and having a maximum gain of [1.8] dB. Antennas not included in this list or having a gain greater than [1.8] dB are strictly prohibited for use with this device. The required antenna impedance is [50] ohms.

**RSS-GEN 7.1.5**
To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en comSpromettre le fonctionnement.

CE 0984 ⓘ

Is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (2004/108/EC), Low-voltage Directive (2006/95/EC), the procedures given in European Council Directive 99/5/EC and 2004/104/EC.

The equipment was passed. The test was performed according to the following European standards:
EN 300 328 V.1.7.1
EN 301 489-1 V.1. 8.1 / EN 301 489-17 V.2.1.1
EN 62311
EN 60950-1

**Regulatory statement (R&TTE)**

European standards dictate maximum radiated transmit power of 100mW EIRP and frequency range 2.400-2.4835GHz; In France, the equipment must be restricted to the 2.4465-2.4835GHz frequency range and must be restricted to indoor use.

Operation of this device is subjected to the following National regulations and may be prohibited to use if certain restriction should be applied.

D=0.020m is the minimum safety distance between the EUT and human body when the E-Field strength is 61V/m.