

## Technical Specifications

### Interfaces

- Ethernet WAN (single or multiple)
- xDSL / Cable / WWAN ISP Corporate LAN compatible
- Wireless WAN (GPRS / EVDO / 3G / LTE / WiMAX)
- Dialup WAN
- Ethernet LAN port or switch (managed / unmanaged)
- Wi-Fi LAN Access Point or client (e.g. Muni Wi-Fi or travel router)

### Protocol Support

- IP routing (IPv4 and IPv6)
- TCP/IP, UDP, ICMP
- STP, RSTP, MSTP
- PPPoE, PPTP, L2TP client, including multi-instance capability
- DHCP (with option 60 VCI support)
- DNS/DNSsec Server / Proxy
- NTP, NTPv4
- RIPv1, RIPv2 and RIPng
- IPsec (ESP, AH), IKE, IKEv2
- IEEE 802.11 standards
- SIP, FTP and other common ALGs
- Bonjour (zeroconfig), LLDP and other common discovery protocols

### Networking Capabilities

- Static Routing, Dynamic Routing
- Unlimited users per port
- Static IP address assignment
- Multi-instance DHCP server on LAN
- DHCP client on WAN
- PPPoE client support: Static and dynamic
- Outbound protocol binding
- PPTP (e.g. Austria DSL) client support for login
- Telestra BigPond (Australia) authentication support
- DHCP address reservation
- IGMP snooping and direct multicast
- Dynamic DNS clients (DynDNS, Iego, PeanutHull, DDNS 3322, others)
- NAT or classical routing
- Transparent bridging
- VLAN (static/dynamic, QoS, subnets)
- Port-Triggering
- UPNP
- Configurable MTU, PMTU discovery
- Multiple LAN sub-nets
- MTA (client and server)
- Network device on USB (NAS for sharing, printer, 3G etc)

### IPv6 Features

- IPv6Ready forum Certified software
- IPv4 / IPv6 Dual-stack
- Tunnelling mechanisms (6-to-4, 6-in-

- 4, GRE, ISATAP, IPv6RD, Teredo, etc)
- IPv6 enabled web-based device management (HTTP / HTTPS)
- OSPFv3, RIPng, RADVD, MLD proxy
- DHCPv6 Server / Relay
- Multiple IPv6 LAN networks
- Multiple IPv6 enabled WAN ports
- Full featured IPv6 firewall and DMZ
- IPsec and SSL VPN over IPv6
- PPPoE client for IPv6
- IPv6-to-IPv6 NAT
- SNMP, TR-069 over IPv6

### Wireless Features

- 802.11 a/b/g/n radio support
- Customizable SSID
- WEP / WPA / WPA2 / WPS
- Personal mode and Enterprise mode
- MAC Access List
- Disable SSID broadcast
- Auto Channel detect
- Rogue AP detection
- QoS (WMM)
- WDS (Wireless Distribution System)
- Multi-radio, Multi-Virtual AP
- Client Isolation on same AP
- ToD (Time of Day) active AP
- SSID based VLANs

### Security Features

- SPI Firewall
- DoS Attack Resistance
- Packet-filtering Firewall
- Intrusion Detection/Prevention System
- WIPS (Wireless Intrusion Prevention)
- GAV (Gateway Anti-Virus)
- WCF (Web Content Filtering)
- Java / URL / ActiveX blocking
- DNSsec
- E-mail alerts
- Pre-set security levels in Firewall
- Flexibility to restrict number of VPNs
- Port / service blocking
- 10,000+ tested VPN tunnels
- Manual key and IKE SAs
- Preshared keys and RSA signatures IKE authentication.
- Choice of advanced encryption and integrity algorithms
- AH / AH-ESP support
- Diffie-Hellman and PFS support
- Main, Aggressive, Quick IKE modes
- FQDN based VPN connections.
- Key and IKE lifetime settings
- Replay attack prevention
- Remote access VPN (client-to-site)
- Site-to-site VPN: Hub & spoke, mesh
- DHCP / DNS / L2TP over IPsec
- InstantTunnel OmniSSL (OpenVPN

- compatible SSL VPN suite)
- InstantTunnel ExpreSSL (Clientless SSL VPN Suite)
- Microsoft MS-CHAP
- IPsec NAT traversal (RFC 3947/3948)
- PNAC (Port Network Access Control)
- Kerberos Authentication Agent
- Firewall multiple zones
- VPN redundancy and backup
- One to one and many to one NAT
- XAUTH and External RADIUS server authentication
- Internal local user database
- VPN ModeConfig Support
- IKE keep-alive
- Multiple schedules in firewall

### Cryptography

- MD5
- SHA-1/ SHA-256/384/512
- DES/3DES
- AES 128/192/256
- RC-4
- Blowfish
- RSA/DSA
- DH Groups 1,2,5,14
- X.509 v.3 certificates

### Management and Administration

- Intuitive, easily brandable browser based GUI
- Login with two factor authentication
- Multiple profiles and rights
- SNMP v2.c and v3 (control / monitor)
- TR-069 family of protocols for remote access & provisioning
- FTP/SFTP, Telnet/SSH, RCP/SCP
- Serial (RS232 / USB) CLI support
- SSL (HTTPS) based remote mgmt with IP address restrictions
- Display usage-reports & router status
- Localization and Internationalization
- Save/Restore configuration settings
- USB thumb-drive booting and configuration/firmware backup
- GUI based firmware upgrade
- Captive Portal
- SYSLOG, email logs, alerts
- SMTP authentication for emails
- Traffic Metering
- ToD (Time of Day) policies
- Admin inactivity timeout
- Configuration upload in ASCII
- Restore factory defaults, last known good configuration
- Comprehensive logging
- Diagnostics ping, DNS lookup, trace-route, web-based packet capture
- Support for manufacturing tests access for ODMs