WeOS

Westermo Operating System

- ⊞ Future proofed solution from Westermo
  - Available on current and future platforms
  - Layer 2 and Layer 3 functionality
  - Constant validation and update releases
- ⊞ Resilient secure multimedia network solutions
  - Ethernet, Fibre, xDSL and serial support
  - Layer 2 and 3 Ring solutions for network resilience
  - Built-in firewalls
- ⊞ Simple to use
  - Easy to use web screens + CLI
  - Advanced diagnostic capability
  - Simplified cross product training
- ⊞ Industrial application solutions
  - Legacy support for serial and IP applications
  - Allows a switch to become a security device
  - Secure remote access functionality

RedFox   Lynx   Wolverine   Viper

The WeOS operating system has been developed by Westermo for its current as well as future range of Ethernet hardware products. This layer 2 and layer 3 switching solution enables Westermo to create complex multimedia ring networks and routing solutions. WeOS not only provides solutions to many challenging industrial networking issues, but also helps to protect investments by ensuring the future availability of fully compatible solutions. WeOS is the core of our latest ranges of Ethernet hardware allowing complex multimedia ring networks and routing solutions to be created.

Westermo has many years of experience developing products for industrial applications. At the heart of all Westermo networking solutions is the need for ease of use. By standardising on a single operating system for all Westermo Ethernet products this helps to simplify the installation, operation and maintenance of individual devices and complete networks. Once a user is familiar with a Westermo product, that knowledge can be readily applied to all our other devices. A web screen simplifies the configuration of many functions, whilst a command line interface allows for fine tuning.

WeOS incorporates unique functions that allow Westermo solutions to provide integration paths for legacy equipment. WeOS also enables Westermo to deliver a range of unique network security solutions, utilising elements such as stateful inspection firewalls and the IEEE 802.1X standard. Remote secure access can be provided using encrypted VPN tunnels. The WeOS Management Guide, 6101-3201, explains how many of these functions can be set up.

Protocols and Functionality

Resiliency and High Availability
Fast Reconfiguration of Network Topology (FRNT), FRNT Ring Coupling, FRNT Horseshoe Topology, Multilink dual homing, IEC 62439-2 Media Redundancy Protocol (MRP), IEEE 802.1AX/802.3ad Link Aggregation (LACP and static), IEEE 802.1D Spanning Tree Protocol (STP) and IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)

Layer 2 Switching
IEEE 802.1Q Static VLAN and VLAN Tagging, IEEE 802.3x Flow Control, IGMPv2/v3 Snooping, AVT Dynamic VLAN (Adaptive VLAN Trunking), Management VLAN (Management Interface concept), Static Multicast MAC filters, IEEE 802.1AB Link Layer Discovery Protocol (LLDP)

Layer 2 QoS
IEEE 802.1p Class of Service, Ingress/inbound rate limiting, Egress/outbound traffic shaping

Layer 2 Security
IEEE 802.1X Port Access Control, MAC Authentication, IP/MAC address conflict detection

IP Routing, Cyber Security, Firewall and VPN[1]
Static IP routing, Floating Static Routes, Dynamic IP routing (OSPFv2, RIPv1/v2, VRRP, Static Multicast Routing), Stateful Inspection Firewall, NAT, 1-1 NAT, Proxy ARP for 1-1 NAT, Port Forwarding, DSCP/TOS modification, IPsec VPN (IKEv1 certificates and PSK, ESP, VPN failover), SSL VPN (Client and Server, Local and central authentication with RADIUS, address pool and address per CN, TLS authentication, WeConnect), GRE, Multinetting

Train Protocols and Standards
IEC 61375-2-5 Train Topology Discovery Protocol (TTDP)[2], EN 50657:2017 Software on Board rolling Stock (Basic Integrity)

Serial Port Technologies[3]
Serial over IP (Serial Extender and Virtual Serial Port), Modem replacement, Modbus Gateway, Microlok II Gateway, PPP dial in/dual out[1]

Manageability
WeConfig, Web interface (HTTP and HTTPS), Command Line Interface (CLI) via console port, (SSHv2 and Telnet), Local and central user authentication (RADIUS and TACACS+), SNMPv1/v2c/v3. Secure Copy (SCP), USB configuration and backup[4], BOOTP client, flexible alarm/event handling system, Syslog (log files and remote syslog server), Digital I/O, Port Monitoring, SNTP (NTP client), NTP Server, PPPoE client[1], DHCP client (including options 60 and 61), DHCP server (including options 1, 3, 6, 12, 15, 42, 61, 66, 67 and 82), DHCP relay agent (including options 54 and 82), DDNS

SNMP MIB Support
RFC1213 MIB-2, RFC 2787 VRRPv2 MIB, RFC 2819 RMON MIB, RFC 2863 Interface MIB, RFC 3411 SNMP Framework MIB, RFC 3433 Entity Sensor MIB, RFC 3621 Power Ethernet MIB, RFC 3635 Ethernet-like MIB, RFC 4133 Entity MIB, RFC4188 Bridge MIB, RFC4318 RSTP MIB, RFC4363 Q-BRIDGE MIB, RFC4836 MAU MIB, RFC4319 HDSL2/SHDSL MIB, RFC 6527 VRRPv3 MIB, IEEE 802.1AB LLDP MIB, IEEE 802.1AX LAG MIB, IEC 61375-2-5 MIB, IEC 62439-2 MRP, UCD SNMP MIB, WESTERMO PRIVATE MIB

[1] Available in products with Layer 3 functionality
[2] Available in RFR-212
[3] Available in products with serial port
[4] Available in products with USB port