

# Lantech OS2 PRO Management

Advanced Layer 2 management functions

Auto Feed, NAT, and Restful API



## OVERVIEW

Lantech OS2 PRO management features provides L2 management, NAT and advanced security functions for onboard network deployment. WebGUI, and complete CLI settings make configuration easy. The Restful API can greatly improve central management efficiency for various applications including fleet management and AIOT. The advanced cybersecurity mechanism can prevent hackers from hacking or attacking.

### ***ITXPT label\* for delay shut down, inventory service, standby green mode***

Lantech OS2 PRO switch supports Module inventory, Time service and MQTT broker. When the engine of the vehicle turns off, the switch is able to extend the work from 30sec to 60mins. The switch must be able to provide SRV and TXT records to back office and exports the data in xml file format. The consumption power under sleep mode meets the standard of ITxPT. (-IGN model)

### ***Auto feed configuration for swapped new switches for Seamless Network Maintenance\****

Lantech OS2 PRO switch supports auto-feed configuration features\* that revolutionize network switch setup and management. It ensures that new and replacement switches automatically receive the correct configuration without manual intervention.

### ***MQTT – Publisher & Broker***

MQTT is a publish-subscribe-based messaging protocol and works on top of the TCP/IP protocol. An MQTT system comprises one broker and several clients, where clients can either be publishers or subscribers. The publishers send data to the broker in the form of MQTT packets, which consist of a “topic” and “payload”, then the broker distributes the “payload” to the subscribers based on which “topics” they have subscribed.

### ***NAT/PAT & Firewall supported***

The switch supports Static IP address, PPPoE (V4&V6), DHCP client, NAT, PAT, OSPF and RIP routing functions, including static route, dynamic route as well as basic firewall functions with Port forwarding, DMZ, Filtering, Remote admin and DDoS protection.

### ***mDNS (Multicast DNS) feature***

mDNS (Multicast DNS) enables hosts in the LAN to discover and communicate with each other in compliance with the DNS protocol without a traditional DNS server.

### ***Support OPEN API document format for Restful API for better switch performance***

Lantech OS2 PRO switch supports OPEN API document format for Restful API that uses JSON format to access and use data for GET, PUT, POST and DELETE types to avoid traditional SNMP management occupying CPU utilization.

***Ignition PoE timer function on IGN model***

Lantech OS2 PRO switch (IGN model) has a programmed timer by port to shut down each PoE port, with variants from 30 seconds to 60 minutes, eliminating the additional relay wire to shut down PoE ports and allowing for remote configuration to change the PoE timer time anytime, anywhere.

***Certified cybersecurity development process with IEC 62443-4-1, and IEC 62443-4-2\*\* compliance with physical tamper resistance and detection for integrity and authenticity of the boot process***

Lantech OS2 PRO platform is designed with a high standard of cybersecurity to prevent threats from network attacks. To ensure the safety and reliability of communication networks, Lantech software development is certified with IEC 62443-4-1 security process standards and the switch is also compliant to IEC 62443-4-2\*\*. The switch uses roots of trust to verify the integrity and authenticity of the firmware, software, and configuration data needed for the switch's boot process.

***802.1X security by MAC address***

MAC-based port authentication is an alternative approach to 802.1x for authenticating hosts connected to a port. By authenticating based on the host's source MAC address, the host is not required to run a user for the 802.1x protocol. The RADIUS server that performs the authentication will inform the switch if this MAC can be registered in the MAC address table of the switch.

***RADIUS and TACACS+***

Lantech OS2 PRO switch supports RADIUS and TACACS+ to handle authentication, authorization, and accounting (AAA) services for network access control.

***Enhanced G.8032 ring, 8 MSTI MSTP***

Lantech OS2 PRO switch features enhanced G.8032 ring which can be self-healed in less than 20ms for single ring topology protection covering multicast packets. It also supports various ring topologies that covers enhanced ring and basic ring by easy setup than others. It supports MSTP that allows each spanning tree for each VLAN for redundant links with 8 MSTI.

***DHCP option 82 & Port based, Mac based DHCP, Option66, DHCP Snooping***

DHCP server can assign dedicated IP address by MAC or by port (Port based for single switch), it also can assign IP address by port for multiple switches with single DHCP option82 server. DHCP Snooping is supported. DHCP Option66 server can offer IP address of TFTP server to DHCP client for VOIP application.

***IGMPv3, MLD snooping, query, GMRP, static multicast forwarding and multicast Ring protection***

The unique multicast protection under enhanced G.8032 ring can offer immediate self-recovery instead of waiting for IGMP table timeout. It also supports IGMP v3 with Query mode for multimedia, GMRP, router port, MLD snooping and static multicast forwarding binding by ports for video surveillance applications.

***Support RTC (Real Time Clock) with longevity Golden Capacitor; CPU watchdog***

Our switch supports RTC which is powered by a golden capacitor, ensuring accurate real-time event logs. The built-in watchdog design can automatically reboot the switch when CPU is found dead.

***User-friendly GUI, Editable configuration text file, Auto topology drawing, Enhanced Environmental Monitoring***

The user-friendly UI, innovative auto topology drawing and topology demo makes Lantech OS2 PRO switch much easier to get hands-on. The complete CLI enables professional engineer to configure setting by command line. The configuration file of Lantech OS2 PRO switch can be exported in text file so that it can be edited and configured back to switch with ease for mass deployment. It supports enhanced environmental monitoring for actual input voltage, current, ambient temperature and total power load.

## SPECIFICATIONS

Management	SNMP v1 v2c, v3/ Web/Telnet/CLI/OPEN API document format for Restful API	Multiple Spanning Tree 8 MSTI
SNMP MIB	MIBII MIB SNMP MIB, IF MIB RMON MIB, Bridge MIB, LLDP MIB Private MIB	Quality of Service The quality of service is determined by port, Tag and IPv4 Type of service, IPv4 Differentiated Services Code Points - DSCP
Enhanced G.8032 ring	Support ITU G.8032 v2/2012 for Ring protection in less than 20ms for self-heal recovery (single ring enhanced mode) Support various ring/chain topologies Includes basic single ring and enhanced ring Enhanced G.8032 ring configuration with ease Cover multicast & data packets protection	Class of Service Support IEEE802.1p class of service, per port provides 8 priority queues
PoE Management (PoE model)	PoE Detection to check if PD is hang up then restart the PD PoE Scheduling to On/OFF PD upon routine time table	Remote Admin Supports 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruder.
Per Port PoE Status (PoE model)	On/ Off, voltage, current, watts, temperature	Login Security Supports IEEE802.1X Authentication/RADIUS/TACACS+
PoE Off/Timer on ignition standby mode** (PoE model)	System Shutdown Duration, PoE Disable Duration (-IGN model)	Port Mirror Support 3 mirroring types: "RX, TX and Both packet"
User-friendly UI	<ul style="list-style-type: none"> <li>■ Auto topology drawing</li> <li>■ Topology demo</li> <li>■ Complete CLI for professional setting</li> </ul>	Network Security Support 10 IP addresses that have permission to access the switch management and to prevent unauthorized intruders. 802.1X access control/MAC-Port binding INGRESS ACL L2/L3 SSL/ SSH v2 for Management HTTPS for secure access to the web interface
Port Trunk with LACP	LACP Port Trunk: 8 Trunk groups	IGMP Support IGMP snooping v1,v2,v3; 1024 multicast groups; IGMP router port ; IGMP query; GMRP, MLD snooping
LLDP	Supports LLDP to allow switch to advise its identification and capability on the LAN	Static MAC-Port bridge Static multicast forwarding forward reversed IGMP flow with multicast packets binding with ports for IP surveillance application
CDP	Cisco Discovery Protocol for topology mapping	L3 routing function Static route, NAT, OSPF and RIP
VLAN	Port Based VLAN IEEE 802.1Q Tag VLAN (256 entries)/ VLAN ID (Up to 4K, VLAN ID can be assigned from 1 to 4096.) GVRP	Firewall Port forwarding DMZ Filtering Remote admin DDoS protection
IPv6/4	Present	Bandwidth Control Support ingress packet filter. Ingress filter packet type combination rules are Broadcast/Multicast/Flooded Unicast packet, Broadcast/Multicast packet, Broadcast packet only and all types of packet. The packet filter rate can be set an accurate value through the
RSTP/MSTP	Supports IEEE802.1d Spanning Tree and IEEE802.1w Rapid Spanning Tree, IEEE802.1s	

	pull-down menu for the ingress packet filter.
Flow Control	Supports Flow Control for Full-duplex and Back Pressure for Half-duplex
System Log	Supports System log record and remote system log server
Protection	<ul style="list-style-type: none"> <li>■ Miss-wiring avoidance</li> <li>■ Node failure protection</li> <li>■ Loop protection</li> </ul>
SNMP Trap	Up to 10 trap stations; trap types including: <ul style="list-style-type: none"> <li>● Device cold start</li> </ul>

	<ul style="list-style-type: none"> <li>● Authorization failure</li> <li>● Port link up/link down</li> <li>● Topology change (ITU ring)</li> <li>● Power failure</li> <li>● Environmental abnormal</li> </ul>
DHCP	Provide DHCP Client/ DHCP Server/DHCP Option 82 (Server and relay)/Port-based DHCP; DHCP Snooping; DHCP option 66

\*Future release  
\*\*Optional

## ORDERING INFORMATION

- **OS2 PRO – IEC62443-4-2.....P/N: 9000-127**  
OS2 PRO software platform IEC-62443-4-2 Cybersecurity features

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