Lanner

Network Appliance Platforms

Hardware Platforms for Network Computing

LWR-X8460
User Manual

About this Document

This manual describes the overview of the various functionalities of this product, and the information you need to get it ready for operation. It is intended for those who are:
- responsible for installing, administering and troubleshooting this system or Information Technology professionals.
- assumed to be qualified in the servicing of computer equipment, such as professional system integrators, or service personnel and technicians.

The latest version of this document can be found on Lanner's official website, available either through the product page or through the Lanner Download Center page with a login account and password.

Conventions & Icons

This document utilizes different icons in order to make selected text more transparent and explicable to users.

Icon Descriptions

Icon	Usage
Note or Information	This mark indicates that there is something you should pay special attention to while using the product.
Warning or Important	This mark indicates that there is a caution or warning and it is something that could damage your property or product.

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To obtain additional documentation resources and software updates for your system, please visit the Lanner Download Center. As certain categories of documents are only available to users who are logged in, please be registered for a Lanner Account at http://www.lannerinc.com/ to access published documents and downloadable resources.

For troubleshooting the issues with your system, please check the Lanner Q&A page for a diagnostic procedure and troubleshooting steps.

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Calling Us

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Toll-free customer service number: **+1 855-852-6637**

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Operating Safety

▶ Electrical equipment generates heat. Ambient air temperature may not be adequate to cool equipment to acceptable operating temperatures without adequate circulation. Be sure that the room in which you choose to operate your system has adequate air circulation.

▶ Ensure that the chassis cover is secure. The chassis design allows cooling air to circulate effectively. An open chassis permits air leaks, which may interrupt and redirect the flow of cooling air from internal components.

▶ Electrostatic discharge (ESD) can damage equipment and impair electrical circuitry. ESD damage occurs when electronic components are improperly handled and can result in complete or intermittent failures. Be sure to follow ESD-prevention procedures when removing and replacing components to avoid these problems.

▶ Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. If no wrist strap is available, ground yourself by touching the metal part of the chassis.

▶ Periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms (Mohms).

Sécurité de fonctionnement

▶ L'équipement électrique génère de la chaleur. La température ambiante peut ne pas être adéquate pour refroidir l'équipement à une température de fonctionnement acceptable sans circulation adaptée. Vérifiez que votre site propose une circulation d'air adéquate.

▶ Vérifiez que le couvercle du châssis est bien fixé. La conception du châssis permet à l'air de refroidissement de bien circuler. Un châssis ouvert laisse l'air s'échapper, ce qui peut interrompre et rediriger le flux d'air frais destiné aux composants internes.

▶ Les décharges électrostatiques (ESD) peuvent endommager l'équipement et gêner les circuits électriques. Des dégâts d'ESD surviennent lorsque des composants électroniques sont mal manipulés et peuvent causer des pannes totales ou intermittentes. Suivez les procédures de prévention d'ESD lors du retrait et du remplacement de composants.

▶ Portez un bracelet anti-ESD et veillez à ce qu'il soit bien au contact de la peau. Si aucun bracelet n'est disponible, reliez votre corps à la terre en touchant la partie métallique du châssis.

▶ Vérifiez régulièrement la valeur de résistance du bracelet antistatique, qui doit être comprise entre 1 et 10 mégohms (Mohms).

CAUTION: TO DISCONNECT POWER, REMOVE ALL POWER CORDS FROM UNIT.
注意：要断开电源，请将所有电源线从本机上拔下。
WARNUNG: Wenn Sie das Gerät zwecks Wartungsarbeiten vom Netz trennen müssen, müssen Sie beide Netzteile abnehmen.
ATTENTION: DÉBRANCHER LES TOUT CORDONS D'ALIMENTATION POUR DÉCONNECTER L'UNITÉ DU SECTEUR.

Table of Contents

Chapter 1: Product Overview

LWR-X8460, a 12-stream Wi-Fi 6E (802.11ax) access point network solution, designed for the growing demands of increasingly crowded and dense Wi-Fi environments. With 4x4 MU-MIMO in 2.4 GHz, 5 GHz, and 6 GHz Tri-Band, and comply with IEEE 802.11a/b/g/n/ac/ax standards, the LWR-X8460 offer fast and secure Wi-Fi connectivity.

Package Content

Your package contains the following items:

▶ 1x LWR-X8460 Wi-Fi 6E Access Point

▶ 1x LAN Cable Cat6A

▶ 1x AC Power Adapter / Power Cord

Ordering Information

SKU No.	Main Features
LWR-X8460B	High-Capacity Wi-Fi 6E Tri-Band Access Point with Qualcomm Hawkeye2, 2x 10GbE (PoE++ PD), 4x 1GbE RJ45 ports, supports wall mount.

Optional Accessories

Model	Description
Wall Mount Kit	Wall Mount Kit

System Specifications

Form Factor		Fanless Desktop
Platform	Processor	Qualcomm® IPQ8076A Hawkeye2 @ 2.2 GHz
	CPU Cores	4
	Security Acceleration	Hardware-based acceleration for IPsec VPN
System Memory	Flash NOR	8MB
	Flash NAND	256MB
	DDR4	1GB
Wi-Fi	Standard	IEEE 802.11 a/b/g/n/ac/ax
	Peak PHY Rates	2.4 GHz: 1147 Mbps 5 GHz: 2401 Mbps 6 GHz: 4803 Mbps
	Antenna	2.4 GHz: Peak gain 4.25dBi, Internal 4x4, Omnidirectional 5 GHz: Peak gain 5.4dBi, Internal 4x4, Omnidirectional 6 GHz: Peak gain 4.8dBi, Internal 4x4, Omnidirectional
	Frequency Bands	2.400 to 2.4835 GHz (ISM) 5.150 to 5.250 GHz (U-NII-1) 5.250 to 5.350 GHz (U-NII-2A) 5.470 to 5.725 GHz (U-NII-2C) 5.725 to 5.850 GHz (U-NII-3) 5.925 to 7.125 GHz (U-NII-5/6/7/8)
	Client Capacity	Up to 512 clients per band
	SSID	Multiple SSID: Up to 8 BSSID per band Hidden SSID
	Security (Personal)	Enhance Open WPA2-PSK WPA3-SAE WPA/WPA2-PSK mixed mode WPA2/WPA3-PSK/SAE mixed mode
	Security (Enterprise)	802.1X Authenticator & Supplicant - WPA2-PSK - WPA/WPA2-PSK mixed mode
	Advanced	IEEE802.11 k/v/r WMM
Bluetooth	Standards	BLE 5.1
	Tx Power	4dBm (class 2)
	Rx Sensitivity	-89dBm
	Antenna	2.4 GHz: Peak gain 3.24dBi, Internal, Omnidirectional

I/O	Power Input	DC Jack w/ lock
	WAN	1x 10GbE + IEEE802.3bt (PoE++)
	LAN	1x 10GbE (1/2.5/5/10GbE)
	LAN	4x 1GbE
	Console	1x RJ45 management port
	USB	1x USB2.0, Type A
	WPS	1x Button
	Reset	1x Button
	LED Indicators	Power, Status, 10G, 1G, WLAN, WPS
Networking Protocol	IP	IPv4, IPv6
	Mesh	EasyMesh Wireless Technology Self-Healing AP Steering
	VLAN	802.1Q Port-Based
	Firewall	SYN-Flood Protection Invalid Packet Filter Port Forwarding Traffic Rules Custom Rules
System Management	Time	NTP client, Timezone, Local time
	Log	System / Kernel Log, Log Levels
	Diagnostics	Ping, Traceroute, Nslookup
	Device Management	Backup / Restore Device Configuration Firmware Update Reset to Default
	Remote Management	HTTP(S) SSH
Environmental Parameters	Temperature	Operating: 0°C ~ 40°C
	Humidity (RH)	5% ~ 90% non-condensing
Mechanical Specifications	(WxDxH)	220 x 220 x 60 mm (without rubber feet)
	Weight	2.1 kg
Power	Consumption	50W (max)
	Input	48Vdc / 1.25A IEEE 802.3bt (PoE++)

Front/Top Panel

LED	COLOR	ACTION	DESCRIPTION
POWER	**Green**	Steady	System On
	OFF	N/A	System Off
STATUS	**Green**	Steady	System Ready
	Green	Flash	Firmware update, restart, initialized
	Red	Steady	System Error
	Note: Status bi-color LED controlled by GPIO		
WLAN	**Green**	Steady	Wi-Fi Ready
	OFF	N/A	No Wi-Fi
10G	**Green**	Steady	Link Successfully
	OFF	N/A	No Connection
1G	**Green**	Steady	Link Successfully
	OFF	N/A	No Connection
WPS	**Green**	Steady	5 sec, WPS Linked Successfully
	Green	Flash	WPS Session Negotiation
	OFF	N/A	No Connection

Rear Panel
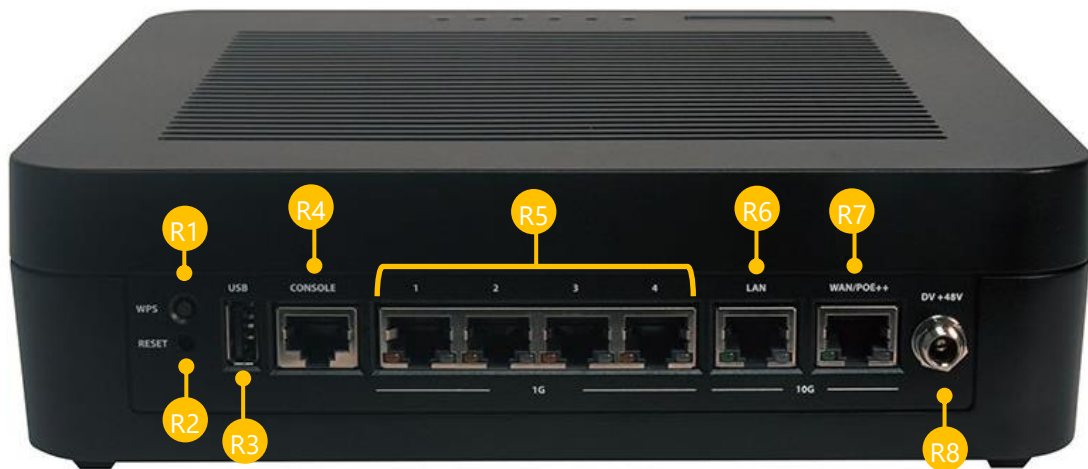
NO.		DESCRIPTION
R1	WPS	1x WPS Button
R2	Reset	1x Reset Button
R3	USB	1x USB 2.0 port
R4	Console port	1x RJ45 Console port
R5	LAN Ports	4x RJ45 1GbE
R6	LAN Port	1x 10GbE (1/2.5/5/10GbE)
R7	WAN Port	1x 10GbE (PoE++ PD)
R8	Power	1x DC Power Jack

PoE PD Port

The R7 WAN port supports PoE-in (PoE-PD) functionality, allowing LWR-X8460 access point to be powered from an 802.3bt compliant PoE power supply.

Wall Mounting (Optional)

The access point can be mounted on a flat surfaced wall. Please take the following into considerations when mounting the system onto the wall.

1. Fix the wall mount brackets onto the bottom of the access point by securing them with the four (4) provided screws.

2. Position the access point's mounting bracket at the desired location on the wall and use a pencil/pen to mark the four mounting holes.
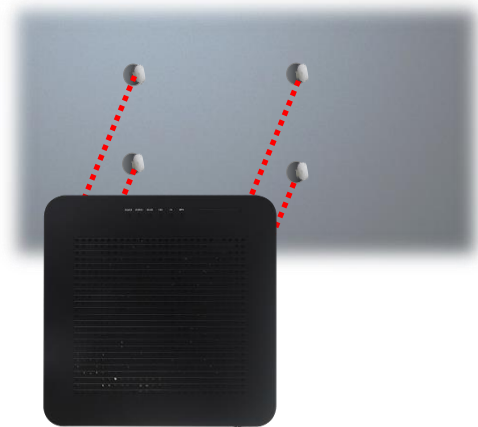
3. Drill four (4) holes, insert wall anchors, then insert screws into the wall anchors, leaving 3/16 inch (0.5 cm) of each screw exposed
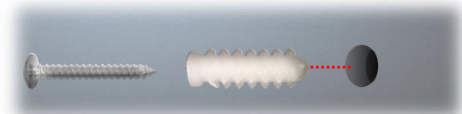
4. Align the access point's wall-mounting holes with the screws and mount your access point to the wall.

Chapter 2: Connecting the Access Point for Configuration

Before deploying and configuring the LWR-X8460, the device needs to be properly powered up and connected to the network.

Step 1: Power on the LWR-X8460 Access Point. Connect the power adapter (included) to LWR-X8460's 48VDC port and plug the power adapter into a power supply. If powering by PoE, connect the 802.3bt compliant PoE power adapter (sold separately) to LWR-X8460's WAN port and plug the power adapter into a power supply.

Step 2: Connect the LWR-X8460 LAN Port (10GbE) to a computer/laptop via Ethernet cable.

Step 3: Please wait a moment for LWR-X8460 to start up. The wireless access point is ready when the Power LED turns **Green**.

Power by DC Power Adapter

Power Adapter

Power by PoE-PD

PoE Adapter

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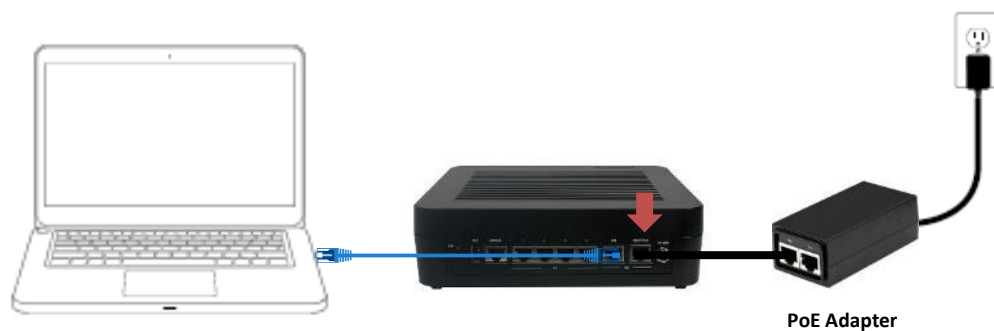
Chapter 3: Configuring Your Access Point

LWR-X8460 Wireless Access Point provides an intuitive Web GUI for easy management. This section provides step-by-step instructions on how to discover the LWR-X8460 and access its Web GUI.

Access Web UI

The LWR-X8460 embedded Web server responds to HTTPS GET/POST requests. Embedded HTML pages allow users to configure the device through a Web browser such as Microsoft IE, Mozilla Firefox, Google Chrome, and etc.

LWR-X8460 Web GUI Login Page

To access the Web GUI:

1. Make sure to device is properly powered up and a laptop/computer is directly connected to the device LAN port via an Ethernet cable.

2. Launch the Web browser on the computer and enter the default IP address of the LWR-X8460 (192.168.0.100) in the address field.

3. Enter the Username and password to access the Web Configuration Menu. The default username is "admin," and the password is "admin."

Change the Administrator's Password

Change the administrator's password for security reasons

1. Click on the **System** icon on the top menu, and select **Administration** from the pull-down menu.

2. Enter the New Password and retype it in the Confirmation field

Save and Apply Changes

After configuring or changing any options on the Web GUI pages, click **"Save & Apply"** on the bottom of the page to apply changes.

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Navigating the Web GUI Management Interface

LWR-X8460 Wireless Access Point has a Web GUI for configuration and management. This section will guide users through Web GUI's detailed settings. The following table shows all the pull-down function tabs of the Web GUI.

Status	System	Network	Statistics
Overview	System	Interfaces	Graphs
Firewall	Administration	Wireless	Setup
Routes	Backup / Flash Firmware	DHCP and DNS	
System Log	Reboot	Hostnames	
Kernel Log		Static Routes	
Processes		Diagnostics	
Realtime Graphs		Firewall	

Status

Status Overview

Status Overview provides an overview of the LWR-W8460, with system information, firmware version, memory status, network status, and wireless status.

Firewall Status

Displays current firewall status, with actions to reset Counters and restart Firewall.

Routes

Routes sections displays the rules that are currently active on the LWR-X8460.

System Log

Allows users to retrieve logs generated for troubleshoot purposes.

Kernel Log

Allows users to retrieve logs generated for troubleshoot purposes.

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Processes

Processes section provides an overview on current running system processes and their status.
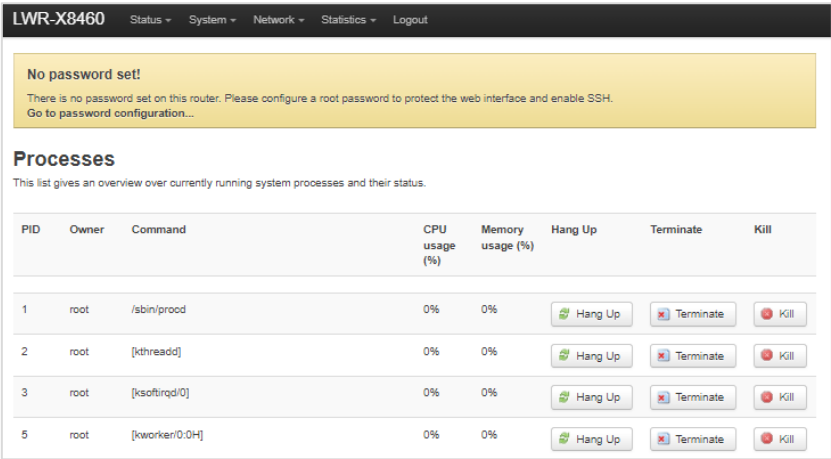
Realtime Graphs

Displays real-time graphs including real-time load, real-time traffic, real-time wireless, real-time active network connections.

19
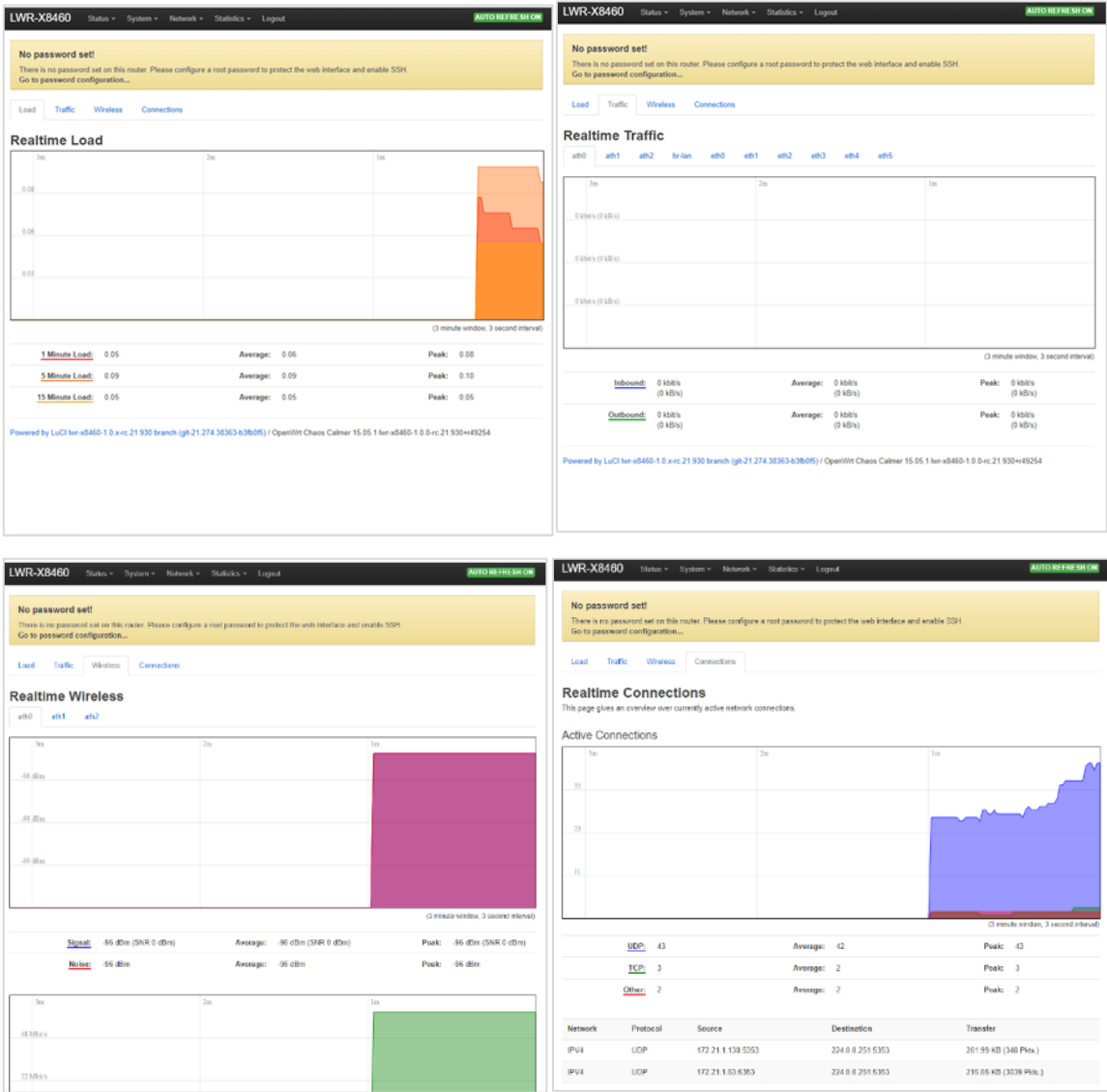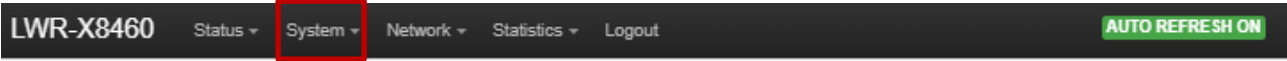
System

System

System allows users to configure the basic aspects of the device, like its hostname or the time zone.
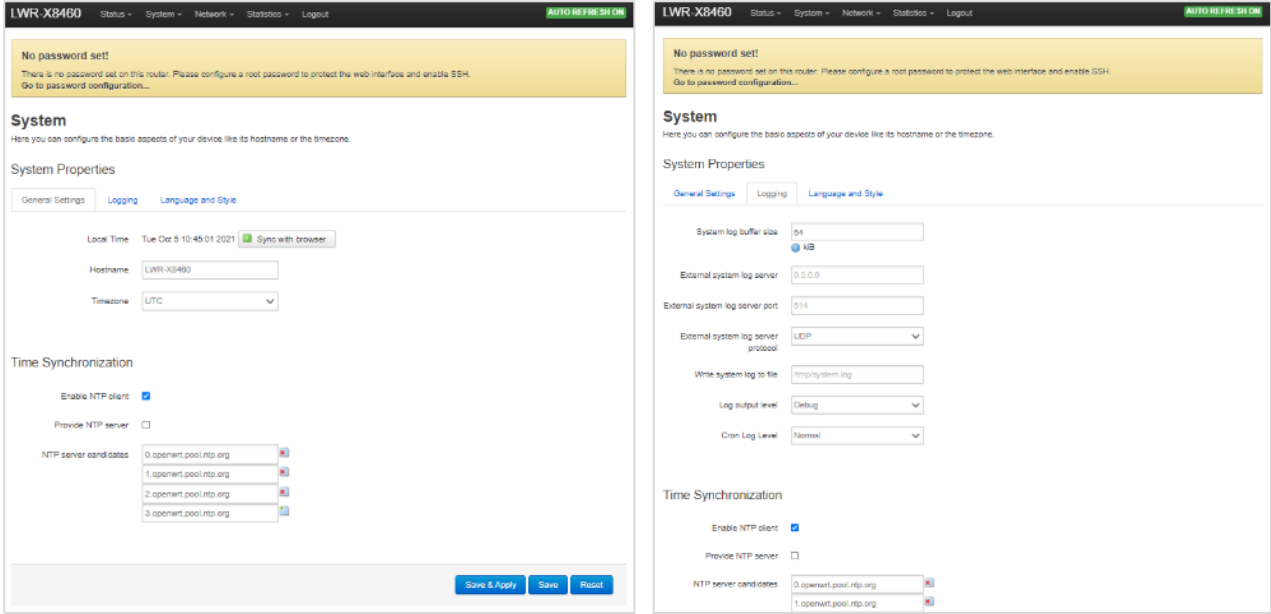
Features	Description
General Settings	Local time, Hostname, Timezone
Logging	System Log Buffer size, External system log server, External system log server port, External system log server protocol, Write system log to file, Log output level, Cron log level
Language and Style	Language, Design
Time Synchronization	Enable/Disable NTP client, Provide NTP server, NTP server candidates

Administration

Users can change the router password and SSH access on this page. Dropbear instance offers SSH network shell access and an integrated SCP server.

Feature	Description
SSH-Key	Users can paste public SSH-Keys (one per line) for SSH public-key authentication.

Backup / Flash Firmware

Feature	Description
Flash Operation - Actions	
Backup / Restore	Click "Generate archive" to download a tar archive of the current configuration files. To reset the firmware to its initial state, click "Perform reset." To restore configuration files, you can upload a previously generated backup archive here.
Flash New Firmware Image	Upload a sysupgrade-compatible image to replace the running firmware. Check "Keep settings" to retain the current configuration.
Backup file List – Configuration	
This is a list of shell glob patterns for matching files and directories to include during system upgrade. Modified files in /etc/config/ and certain other configurations are automatically preserved.	

Reboot

Reboots the operating system of your device.

Network
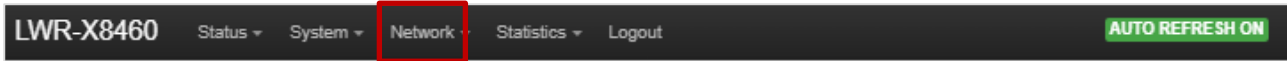
Interfaces

Interface overview displays the current active networks, status, and users can take actions to add new interfaces, connect, stop, edit, delete.
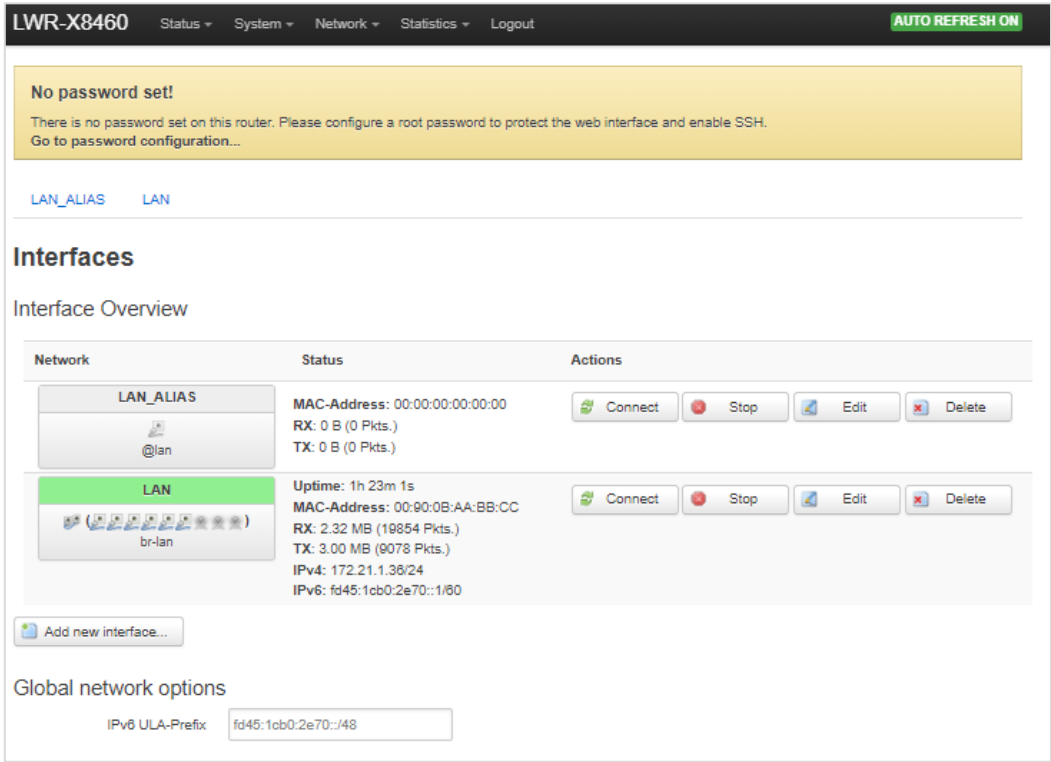
Wireless

Wireless overview displays all the current active wireless connections and users can scan, add, disable, edit or remove.

23
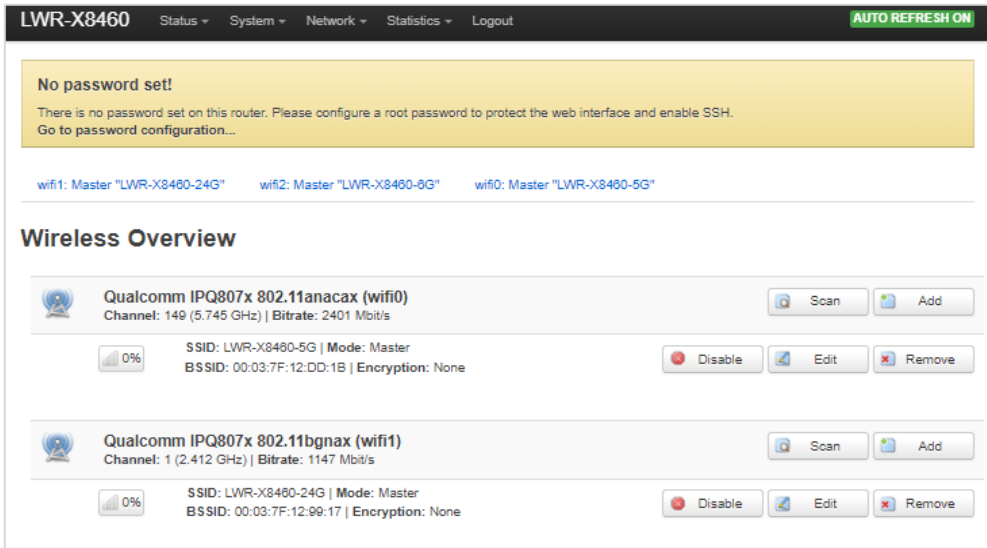
DHCP and DNS

Dnsmasq is a combined DHCP-Server and DNS-Forwarder for NAT firewalls.

Functions	Description
General Settings	forward DNS-Requests, local network authorization, local domain specifications, local domain suffix, log querie settings, rebind protection, allow localhost, domain whitelist, local service only, non-wildcard and add static leases.
Resolv and Hosts Files	Read, Ignore, Add Hosts files
TFTP Settings	Enable/disable TFTP server
Advanced Settings	suppress logging, allocate IP sequentially, filter private, filter useless, localize queries, expand hosts, cache negative replies, add server file

Hostnames

Users can add host entries in this section.

Static Routes – Routes

Routes specify over which interface and gateway a certain host or network can be reached. Users can add new Static Routes.

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Diagnostics – Network Utilities

Users can use diagnostic tools including Ping utility, Traceroute tool, Nslookup in this section.
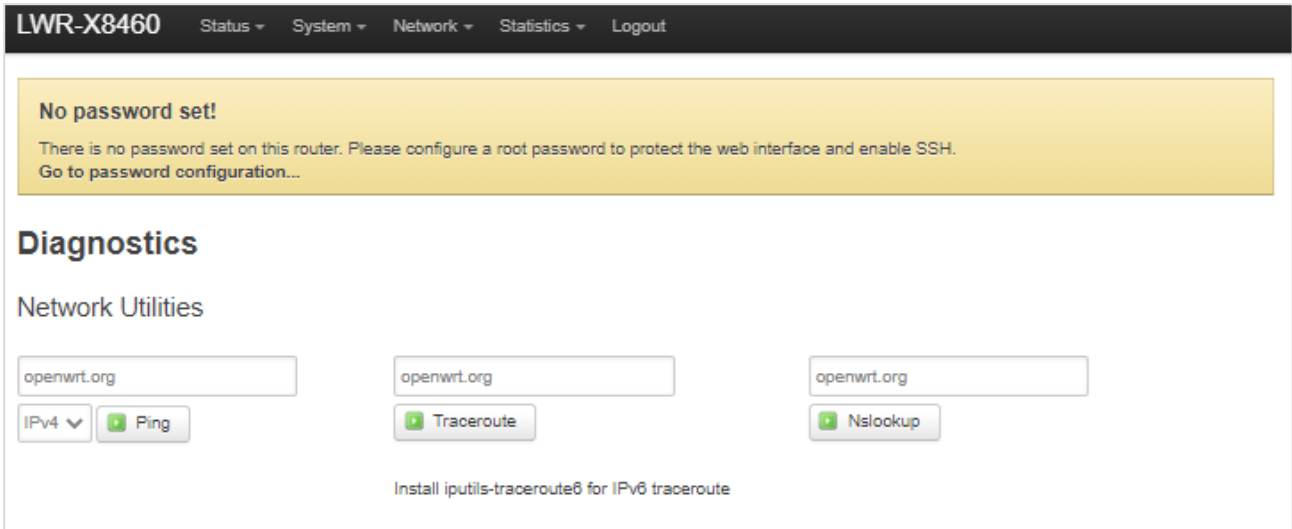
Functions	Description
Ping	Use ping utility to check Internet connectivity for troubleshooting
Traceroute	Use traceroute utility to display the route (path) and measuring transit delays of packets across an Internet Protocol (IP) network.
Nslookup	Use nslookup to query the Domain Name System (DNS) to obtain domain name or IP address mapping, or other DNS records.

Firewall

Create Firewall custom rules, traffic rules, port forwards and general settings.
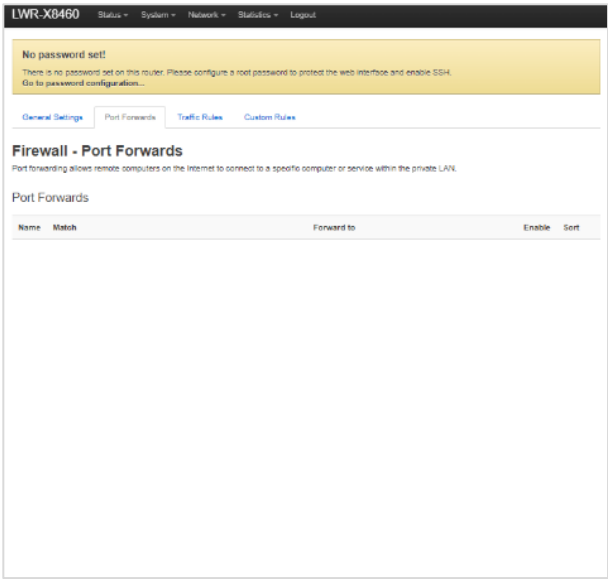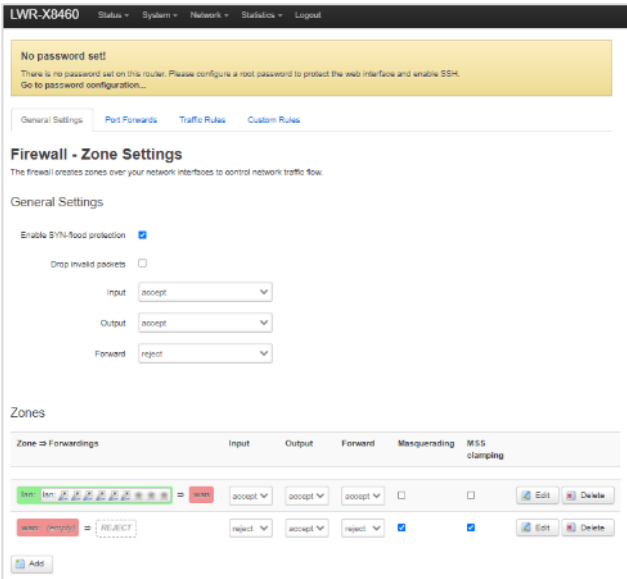
26

| Features	Description
General Settings	The firewall creates zones over your network interfaces to control network traffic flow.
Port Forwards	Port Forwarding allows remote computers on the internet to connect to a specific computer or service within the private LAN.
Traffic Rules	Traffic rules define policies for packets traveling between different zones, for example to reject traffic between certain hosts or to open WAN ports on the router.
Custom Rules	Custom rules allow you to execute arbitrary iptables commands which are not otherwise covered by the firewall framework. The commands are executed after each firewall restart, right after the default rule set has been loaded.

27
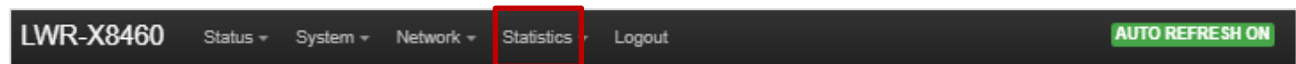
Statistics

Statistics Graphs

Display statistic graphs on processor usage, transfer, packets, signal and noise, quality, system load, and memory usage. Users can filter the graphs by display host and timespan.
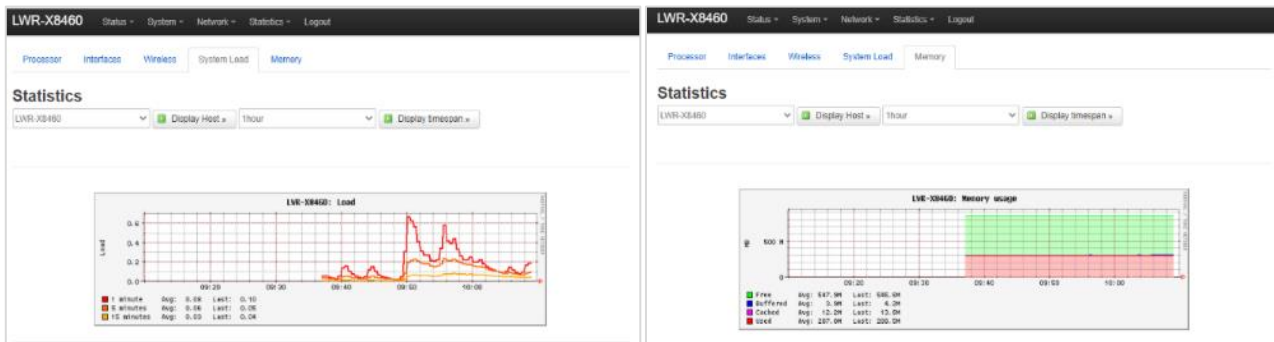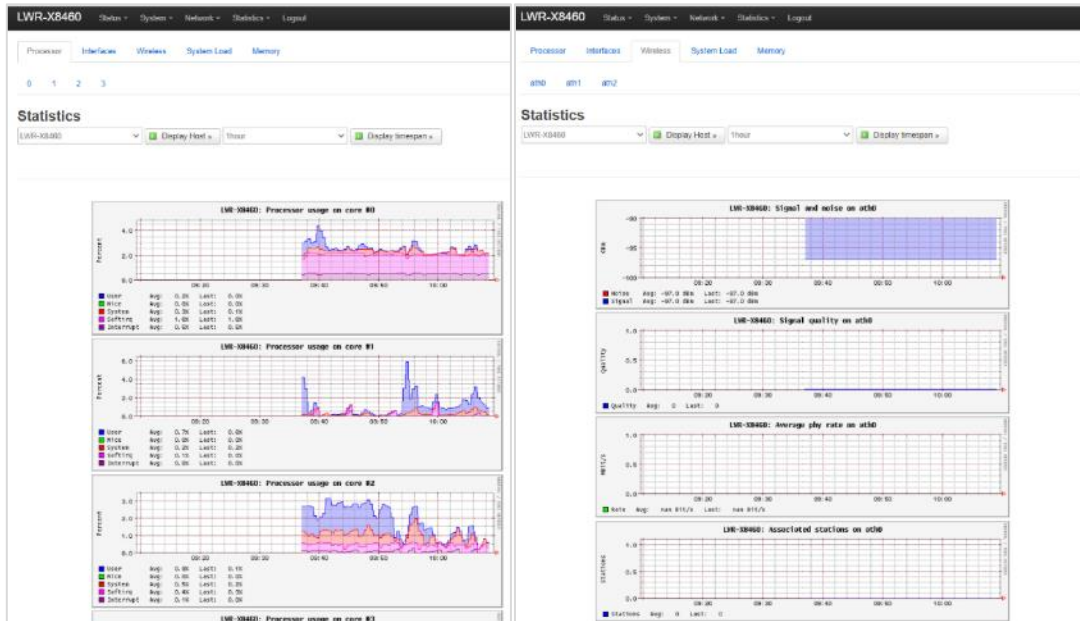
Setup

Collectd Settings

Collectd is a small daemon for collecting data from various sources through different plugins. On this page you can change general settings for the collectd daemon.

General Plugins

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Features	Options	Description
Processor	Enable Disable	The cpu plugin collects basic statistics about the processor usage.
System Load	Enable Disable	The load plugin collects statistics about the general system load.
Memory	Enable Disable	The memory plugin collects statistics about the memory usage.
Sensors	Enable Disable	The sensors plugin uses the Linux Sensors framework to gather environmental statistics.
Thermal	Enable Disable	The thermal plugin will monitor temperature of the system. Data is typically read from /sys/class/thermal/"/temp.

Network Plugins - Interfaces

The interface plugin collects traffic statistics on selected interfaces.

Network Plugins - Wireless

The iwinfo plugin collects statistics about wireless signal strength, noise and quality.

30

Output Plugins - Network

The network plugin provides network-based communication between different collectd instances. Collectd can operate both in client and server mode. In client mode locally collected data is transferred to collectd server instance, in server mode the local instance receives data from other hosts. Users can add Listener interfaces and Server interfaces.

Output Plugins - RRDTool

The rrdtool plugin stores the collected data in rrd database files, the foundation of the diagrams.

APPENDIX A: LED INDICATOR EXPLANATIONS

▶ **RJ-45 LAN LED**

1Gb RJ-45 Define:

Speed	Amber (Active)	Green/Amber (Link)
10M	Blinking / Data access	OFF
100M	Blinking / Data access	ON (Green)
1G	Blinking / Data access	ON (Amber)

10Gb RJ-45 Define:

Speed	Green (Active)	Green/Amber (Link)
100M	Blinking / Data access	OFF
1G	Blinking / Data access	ON (Amber)
10G	Blinking / Data access	ON (Green)

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APPENDIX B: TERMS AND CONDITIONS

Warranty Policy

1. All products are under warranty against defects in materials and workmanship for a period of one year from the date of purchase.

2. The buyer will bear the return freight charges for goods returned for repair within the warranty period; whereas the manufacturer will bear the after-service freight charges for goods returned to the user.

3. The buyer will pay for repair (for replaced components plus service time) and transportation charges (both ways) for items after the expiration of the warranty period.

4. If the RMA Service Request Form does not meet the stated requirement as listed on "RMA Service, "RMA goods will be returned at customer's expense.

5. The following conditions are excluded from this warranty:

    ▶ Improper or inadequate maintenance by the customer

    ▶ Unauthorized modification, misuse, or reversed engineering of the product

    ▶ Operation outside of the environmental specifications for the product.

RMA Service

Requesting an RMA#

1. To obtain an RMA number, simply fill out and fax the "RMA Request Form" to your supplier.

2. The customer is required to fill out the problem code as listed. If your problem is not among the codes listed, please write the symptom description in the remarks box.

3. Ship the defective unit(s) on freight prepaid terms. Use the original packing materials when possible.

4. Mark the RMA# clearly on the box.

Note: Customer is responsible for shipping damage(s) resulting from inadequate/loose packing of the defective unit(s). All RMA# are valid for 30 days only; RMA goods received after the effective RMA# period will be rejected.

RMA Service Request Form

When requesting RMA service, please fill out the following form. Without this form enclosed, your RMA cannot be processed.

RMA No:	Reasons to Return: ☐ Repair(Please include failure details) ☐ Testing Purpose
Company:	Contact Person:
Phone No.	Purchased Date:
Fax No.:	Applied Date:

Return Shipping Address: _____
Shipping by: ☐ Air Freight ☐ Sea ☐ Express_____
☐ Others:_____

Item	Model Name	Serial Number	Configuration

Item	Problem Code	Failure Status

*Problem Code:

01:D.O.A.	07: BIOS Problem	13: SCSI	19: DIO
02: Second Time R.M.A.	08: Keyboard Controller Fail	14: LPT Port	20: Buzzer
	09: Cache RMA Problem	15: PS2	21: Shut Down
03: CMOS Data Lost	10: Memory Socket Bad	16: LAN	22: Panel Fail
04: FDC Fail	11: Hang Up Software	17: COM Port	23: CRT Fail
05: HDC Fail	12: Out Look Damage	18: Watchdog Timer	24: Others (Pls specify)
06: Bad Slot			

Request Party

_____
Authorized Signature / Date

Confirmed By Supplier

_____
Authorized Signature / Date