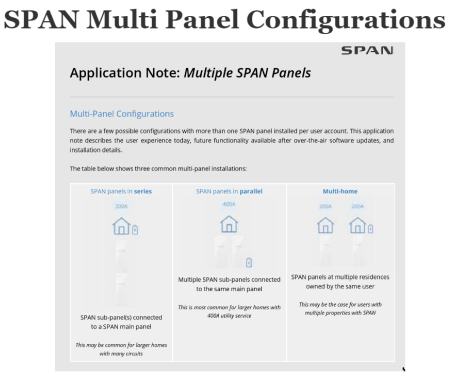
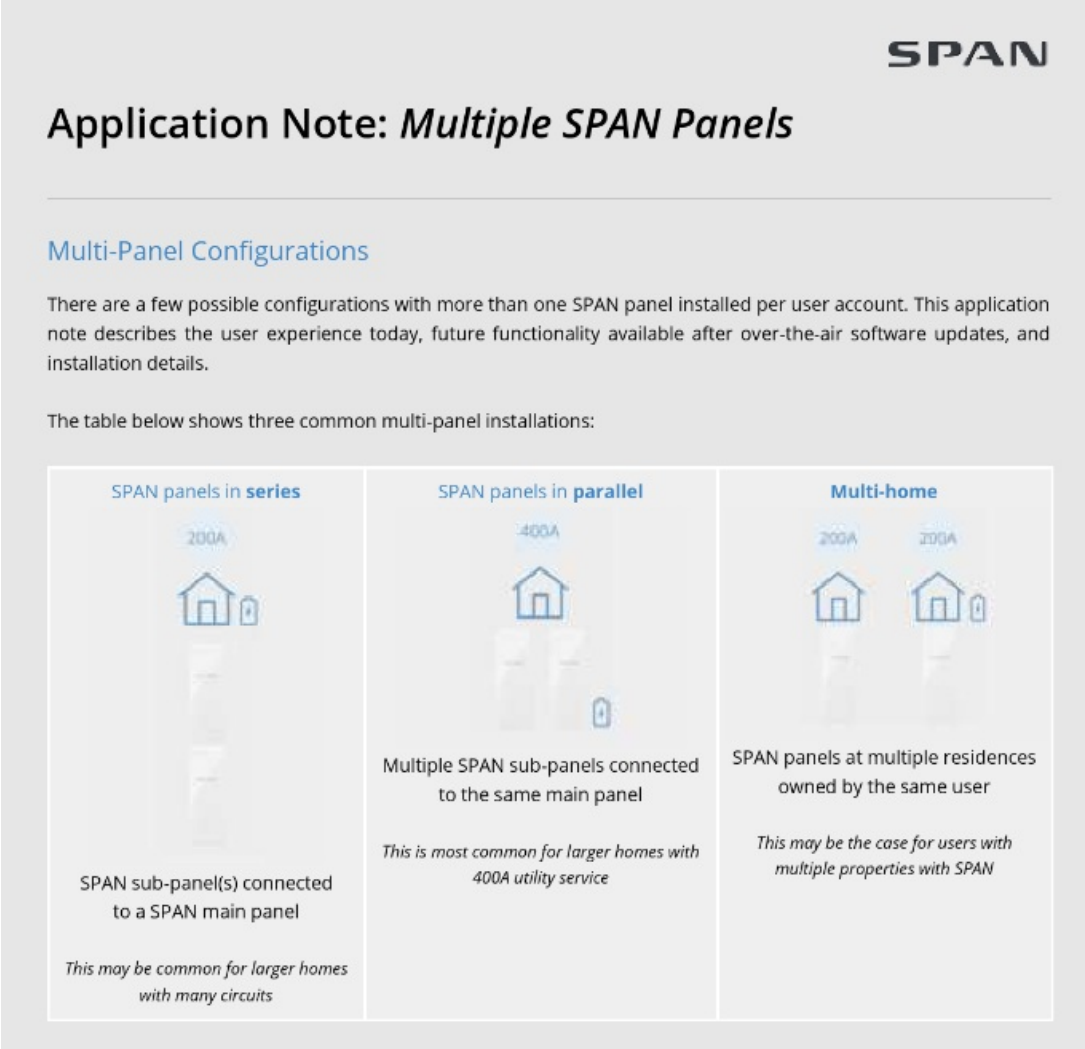


SPAN Multi Panel Configurations User Guide

Contents

SPAN Multi Panel Configurations



Product Specifications

- Model: SPAN Panels
- Utility Service: 400A
- Software Version: rev 2023-07-11
- Application: Home Energy Monitoring and Control

Product Usage Instructions

Multi-Panel Configurations

There are different configurations for multiple SPAN Panels:

- SPAN Panels in series
- SPAN Panels in parallel
- Multi-home setups

Linking Homeowner's Account to Multi-Panels

1. Homeowners must complete the onboarding process for the first Panel.
2. A prompt will guide users to set up a second Panel via their dashboard.
3. All linked SPAN Panels can be accessed through the dashboard drop-down menu.

4. To grant access to other home members, each linked Panel needs to be shared individually.

Series Panels

Monitoring

- Main SPAN Panel represents all sub-Panels as a single Space in the Home App.
- Power flows for Grid, Solar, and Battery are reported correctly only for the main Panel.

Control:

- Automatic Load Shed features are available for circuits in the main Panel only.
- Amazon Alexa setup is limited to one Panel; contact support for assistance.

Parallel Panels

Monitoring Control:

- Power flows for Grid, Solar, and Battery are reported independently for each Panel.
- Total power and energy for the site are the sum of each Panel's reporting.

Off-grid Mode Multi-home:

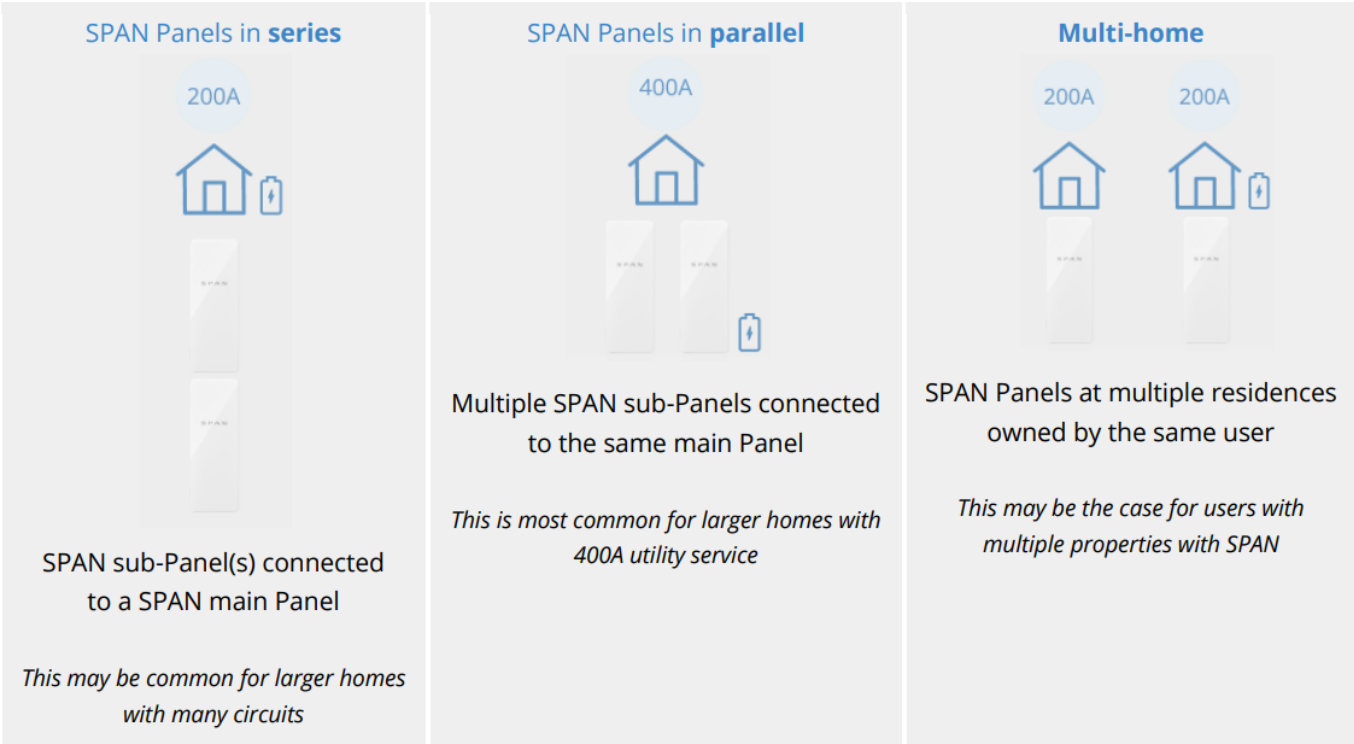
- Automatic Load Shed features are not available for preventing upgrades to 400A services.
- Amazon Alexa setup is limited to one Panel; contact support for assistance.
- Panels act as separate 'microgrids' when paired with battery backup.

Frequently Asked Questions (FAQ)

- **Q: Can I connect multiple SPAN Panels to different properties owned by the same user?**
  A: Yes, you can connect SPAN Panels at multiple residences owned by the same user. This is common for users with multiple properties using SPAN.
- **Q: How do I manage power flows for each Panel in parallel configurations?**
  A: Power flows for Grid, Solar, and Battery are reported independently for each Panel in parallel setups. The total power and energy for the site is calculated based on each Panel's reporting.

Application Note: Multiple SPAN Panels

Multi-Panel Configurations
There are a few possible configurations with more than one SPAN Panel installed per user account. This application note describes the user experience today, future functionality available after over-the-air software updates, and installation details.
The table below shows three common multi-Panel installations:



Multi-Panel Homeowner Experience

Linking homeowner's account to multi-Panels:

1. Homeowners will go through the onboarding process for their first Panel.
2. After onboarding, there will be a prompt to set up a second Panel via banner on their dashboard.
3. All linked SPAN Panels can be accessed via the drop-down menu at the top of the dashboard.
4. If other home members want access to the multi-Panel on their own Home app, each linked Panel needs to be shared to that home member.

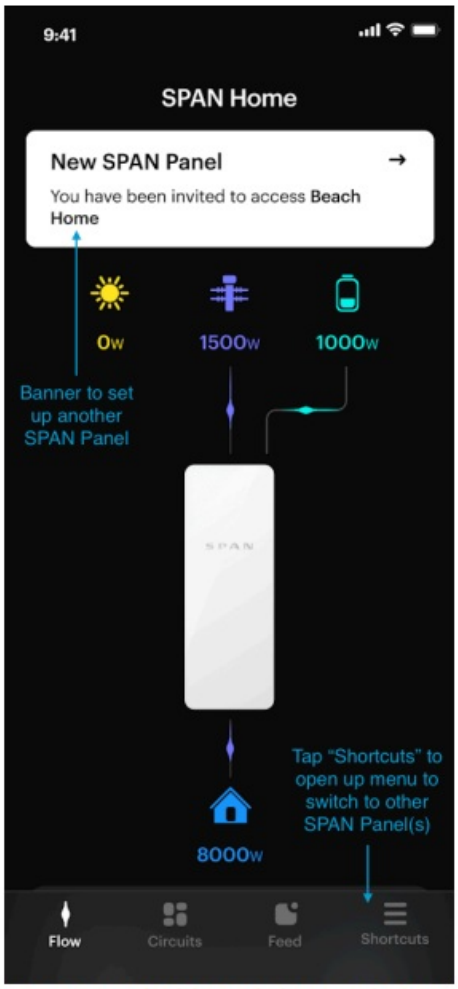


Figure 1. SPAN dashboard showing banner and "Shortcuts" menu

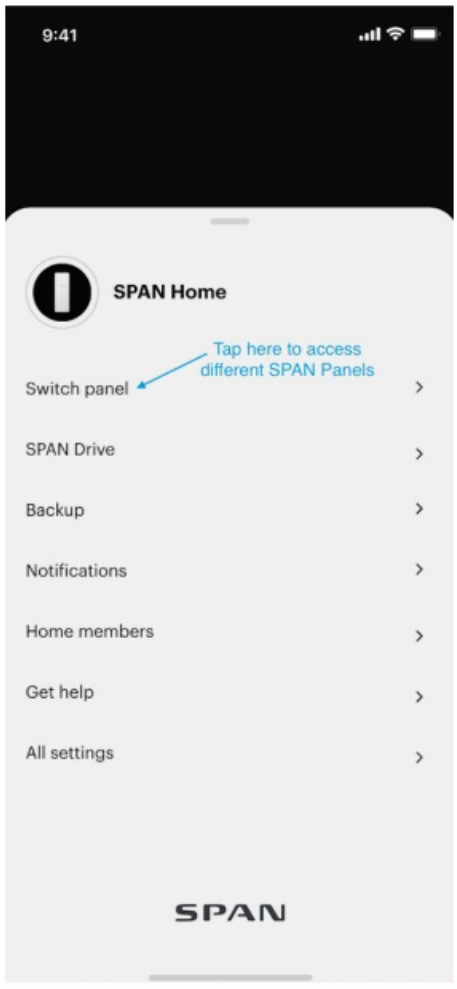


Figure 2. "Shortcuts" menu expanded to see how to access other SPAN Panels

Series Panels

Monitoring	• Panels are represented independently in the Home App via the main SPAN Panel, sub-Panels will be visible as a single *Space*. • Power flows for Grid, Solar, and Battery only report correctly for the main SPAN Panel.
Control • *SPAN Automatic Load Shed* features for service upgrade prevention are only available for circuits installed in the main Panel. • Amazon Alexa can only be set up for one Panel. Contact **support@SPAN.io** if you need help connecting Alexa to a certain SPAN Panel.	
Off-grid Mode	• When paired with battery backup, the main Panel manages grid disconnection and all sub-Panels share the same battery reserve. • Battery storage systems must be connected to the main SPAN Panel. • Off-grid preferences (*Must-have, Nice-to-have, Non-essential*) are only applied for the main Panel connected to the battery storage system. In an outage, sub-Panel loads must be turned off manually via the Home App.

Parallel Panels

Monitoring	Power flows for Grid, Solar, and Battery are reported independently for each Panel. The total power and energy for the site is the sum of each Panel's reporting.
Control • *SPAN Automatic Load Shed* features for service upgrade prevention are not available for preventing upgrades to 400A services or larger at this time. • Amazon Alexa can only be set up for one Panel. Contact **support@SPAN.io** if you need help connecting Alexa to a certain SPAN Panel.	
Off-grid Mode	When paired with battery backup, Panels are separately isolated from the grid and act as separate 'microgrids'. They do not share solar or battery in a grid outage between one another.

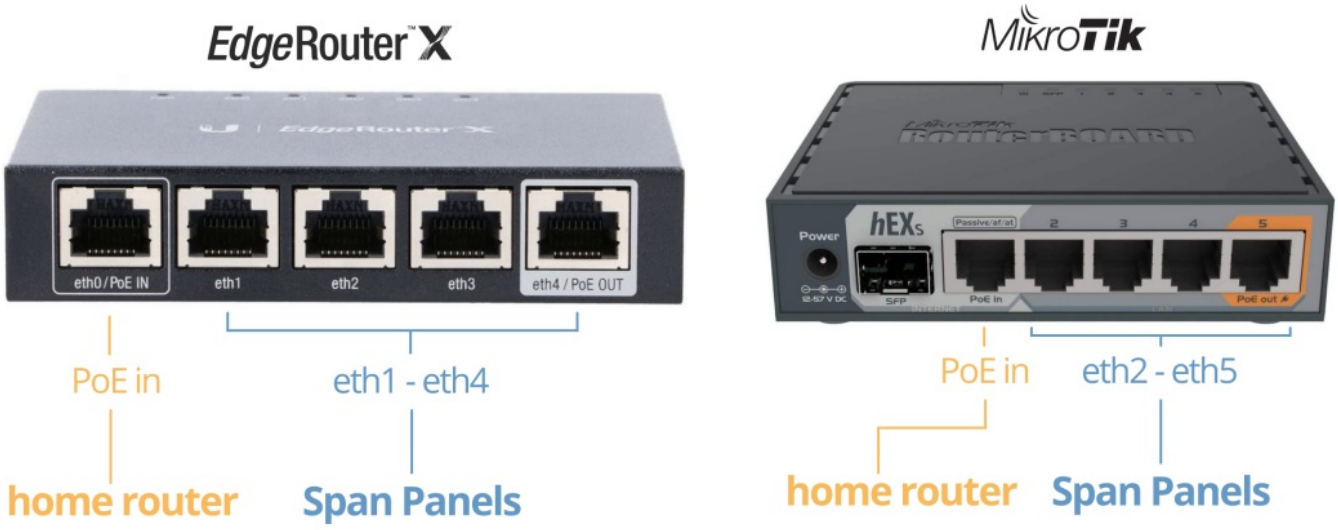
Multi-home

Monitoring	Power flows for Grid, Solar, and Battery are reported independently for each Panel.
Control	• Panels are controlled independently. • Amazon Alexa must be set up for each Panel independently.

SPAN is actively working to improve the multi-Panel homeowner experience. Keep an eye out for future updates and new features!

SPAN Networking Kit Installation
The Networking Kit (PN 1-00921-xx) is required to connect multiple SPAN Panels together

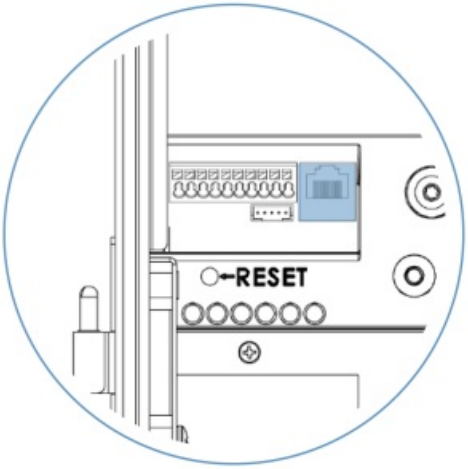
- The router has been specially configured to have an IP of 192.168.50.1
- The router leases an IP to connected devices within a certain DHCP range (192.168.50.x)
- See the SPAN Panel Installation Manual for full installation details
- Connection issues can occur when multiple Networking Kits are connected to the same home router



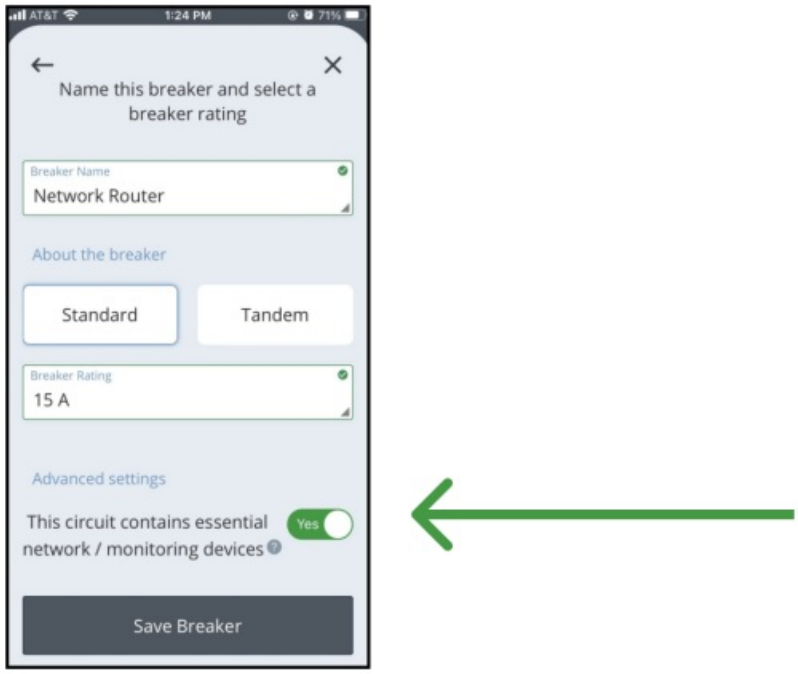
Connecting to a Networking Kit

1. Connect the Network Kit router to power with the provided 120V plug
2. Connect “PoE in” to the home internet router
3. Connect the SPAN Panels (and other devices) to any of the remaining ports

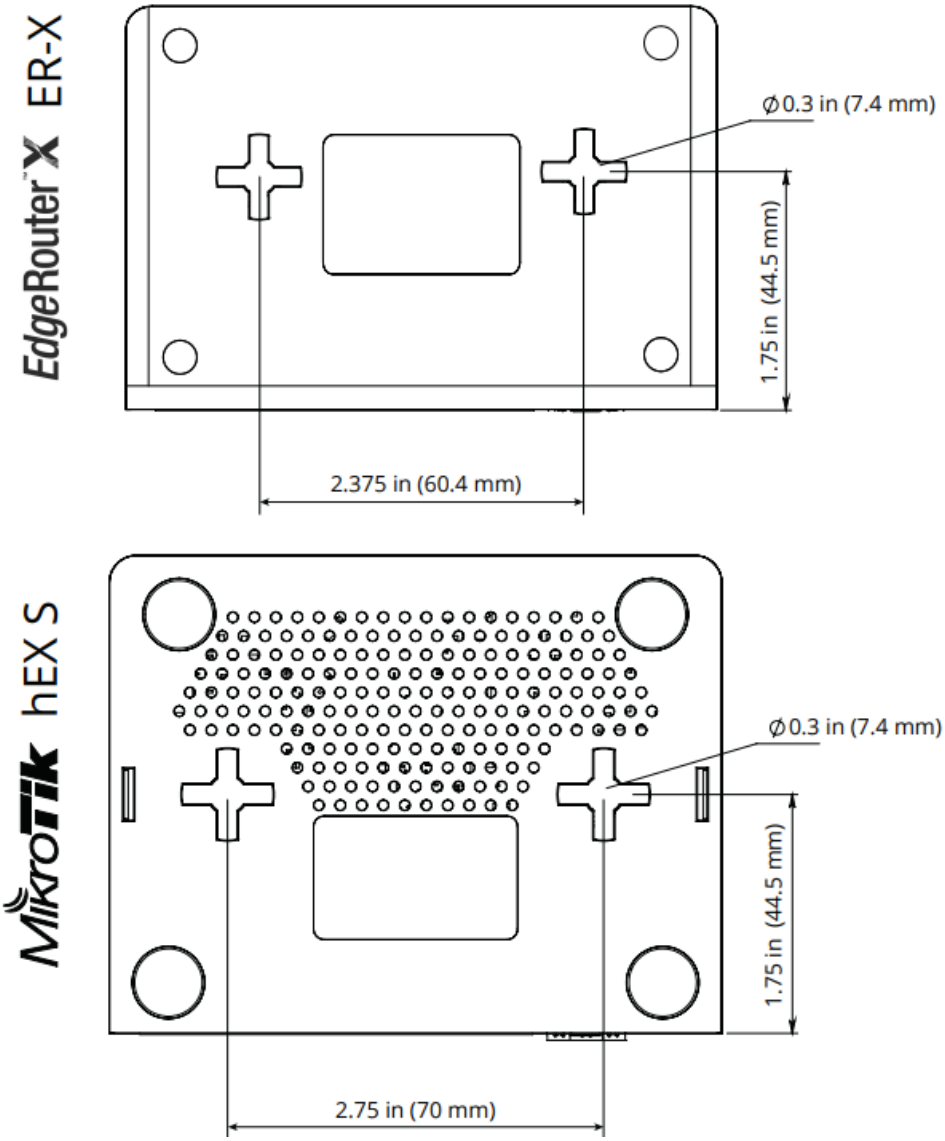
   NOTE: Functionally identical hardware may be from different brands. Follow diagram for the Networking Kit box you receive.
4. Connect to the SPAN Panel standard Ethernet port, not the Aux Comms dongle



5. For the breaker powering the Networking Kit, in the SPAN Installer App select: This circuit contains essential network / monitoring devices



Wall Mounting Template

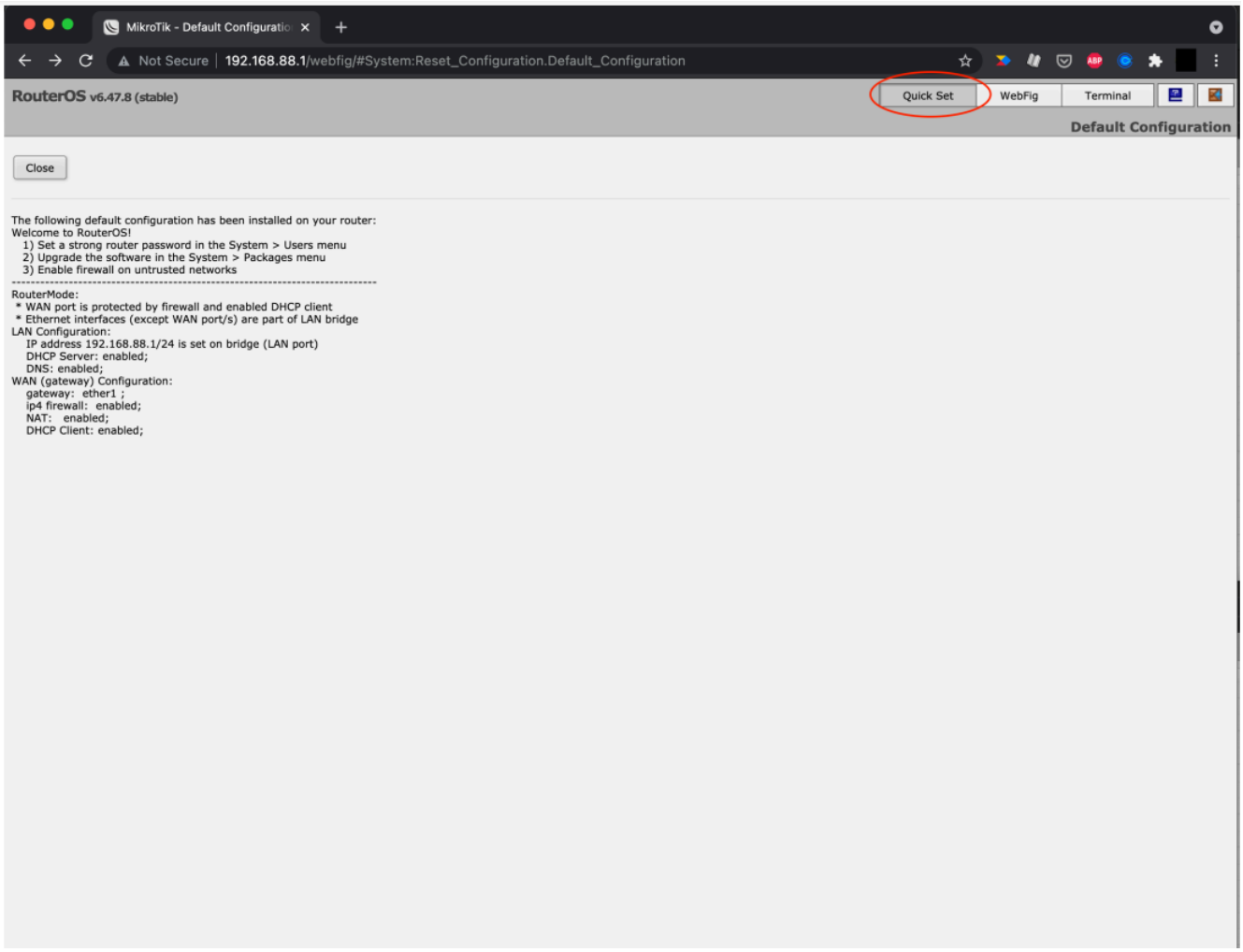


Changing IP of Networking Kit Router from 192.168.50.x to 192.168.51.x

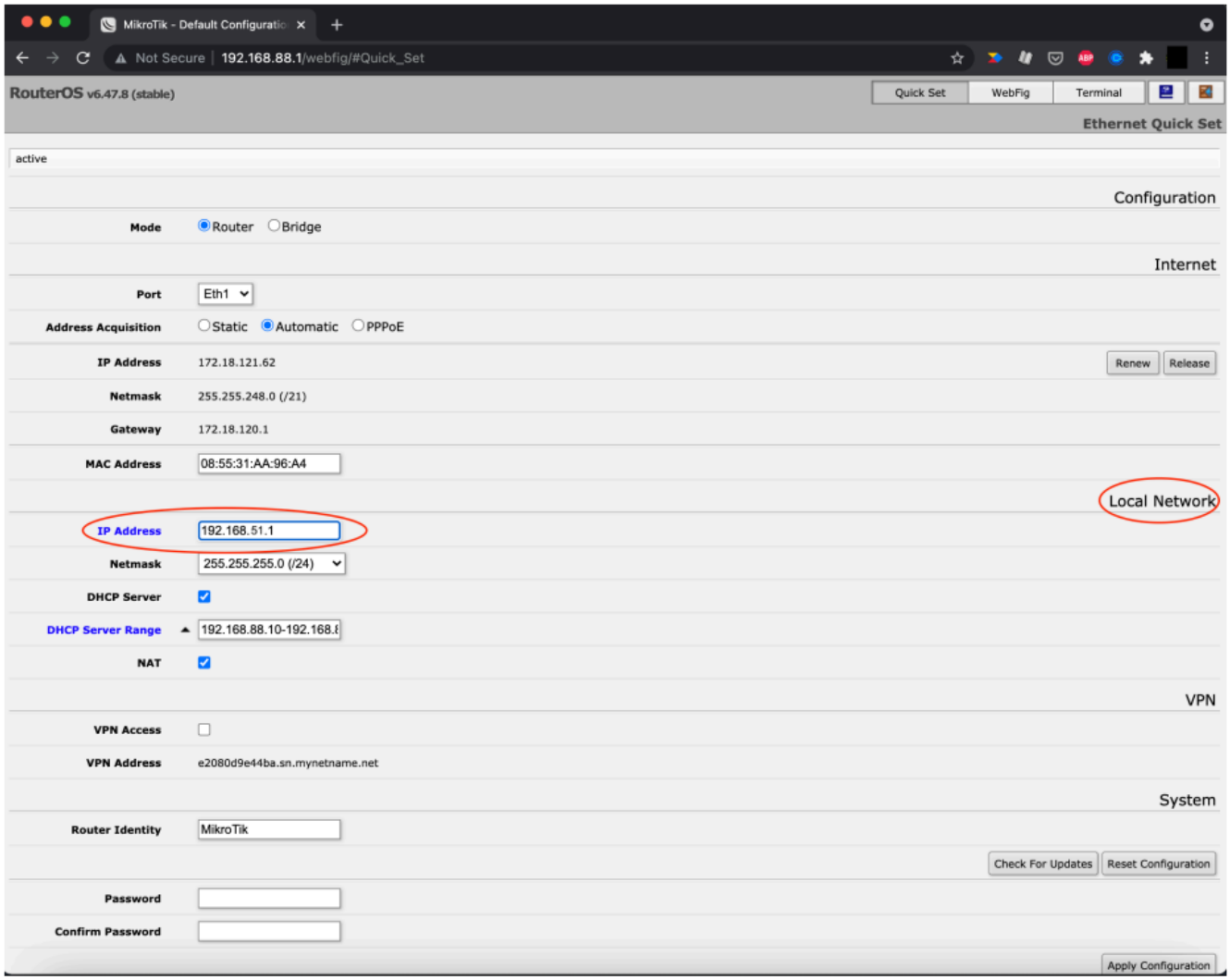
For sites with more than 4 SPAN Panels and have decided to use a second SPAN Networking Kit, one of the Networking Kits will need to be configured to a different subnet. The following instructions explain how to change the IP from the specially assigned IP of 192.168.50.1 to something else (we recommend 192.168.51.1 for easy use).

For the MicroTik Router

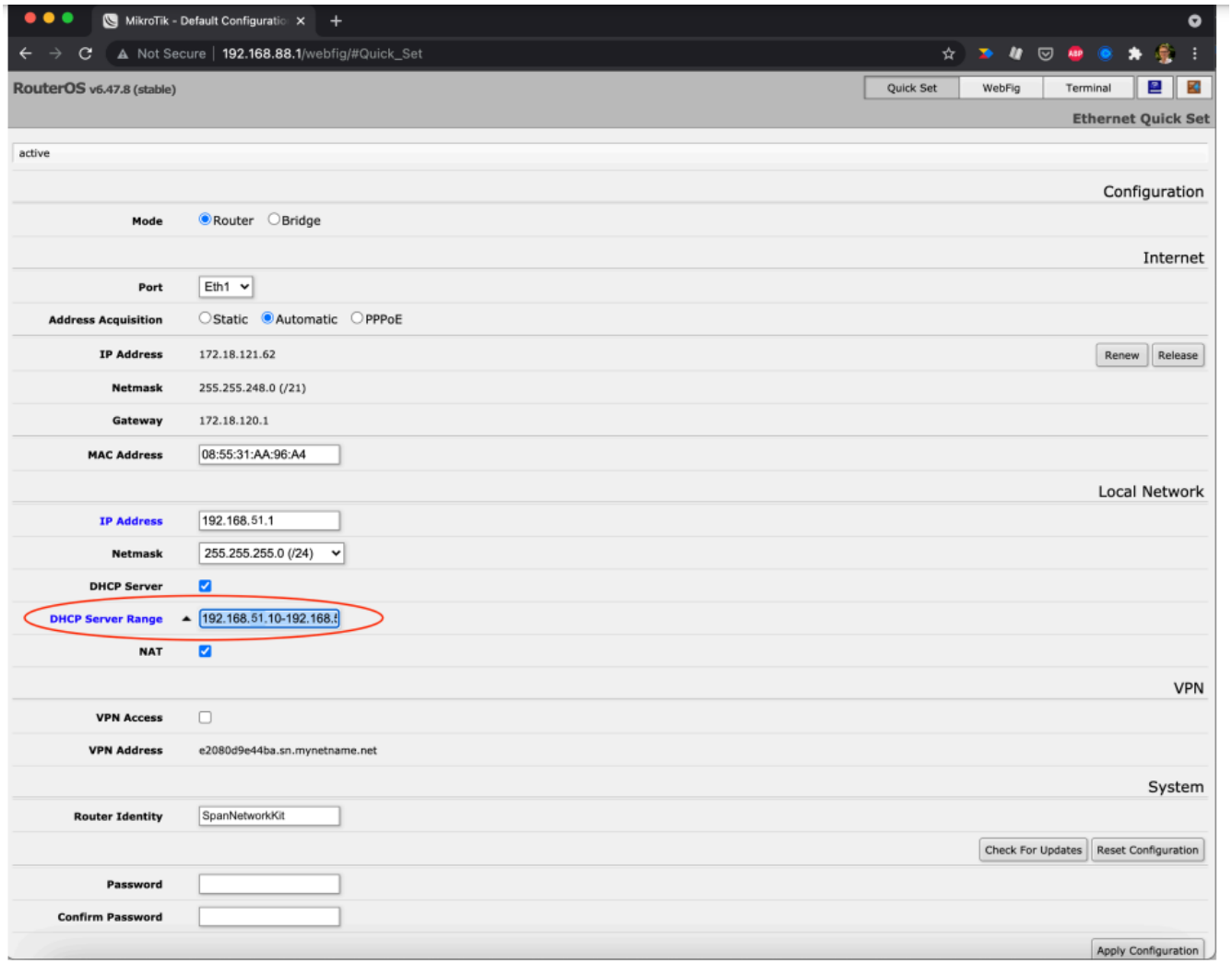
1. Connect your laptop to eth2 port.
2. Open your laptop's Network Setting and ensure your laptop's ethernet connection is configured for DHCP. After connecting, your laptop should receive an IP address of 192.168.50.x.
3. In your internet browser, type in 192.168.50.1 and click enter to navigate to this address.
4. You should see the following screen below. Click Quick Set in the upper right corner of the screen.



5. Scroll down to the Local Network setting. Change IP Address to 192.168.51.1.



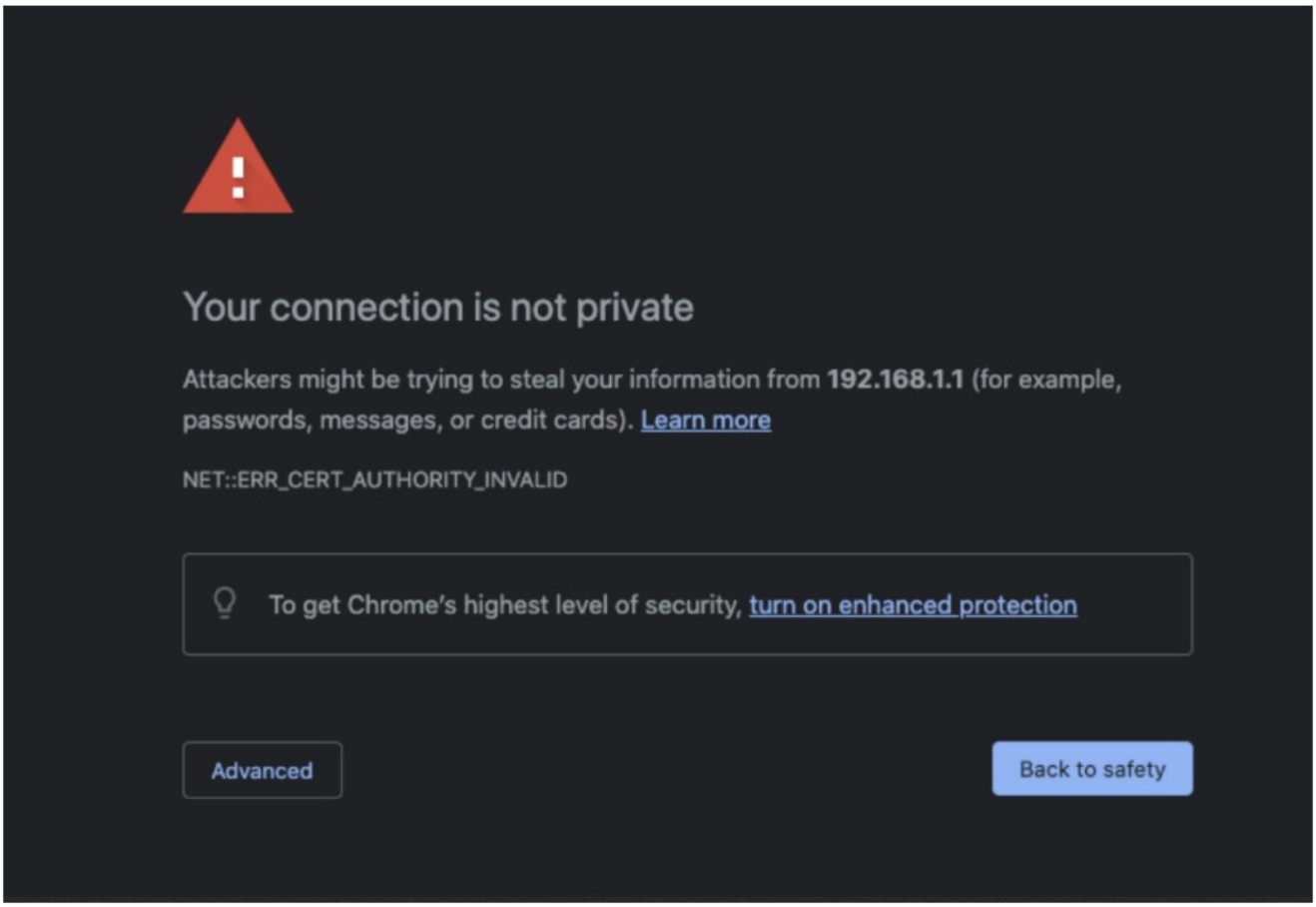
6. Change the DHCP Server Range to 192.168.51.10-192.168.51.254.



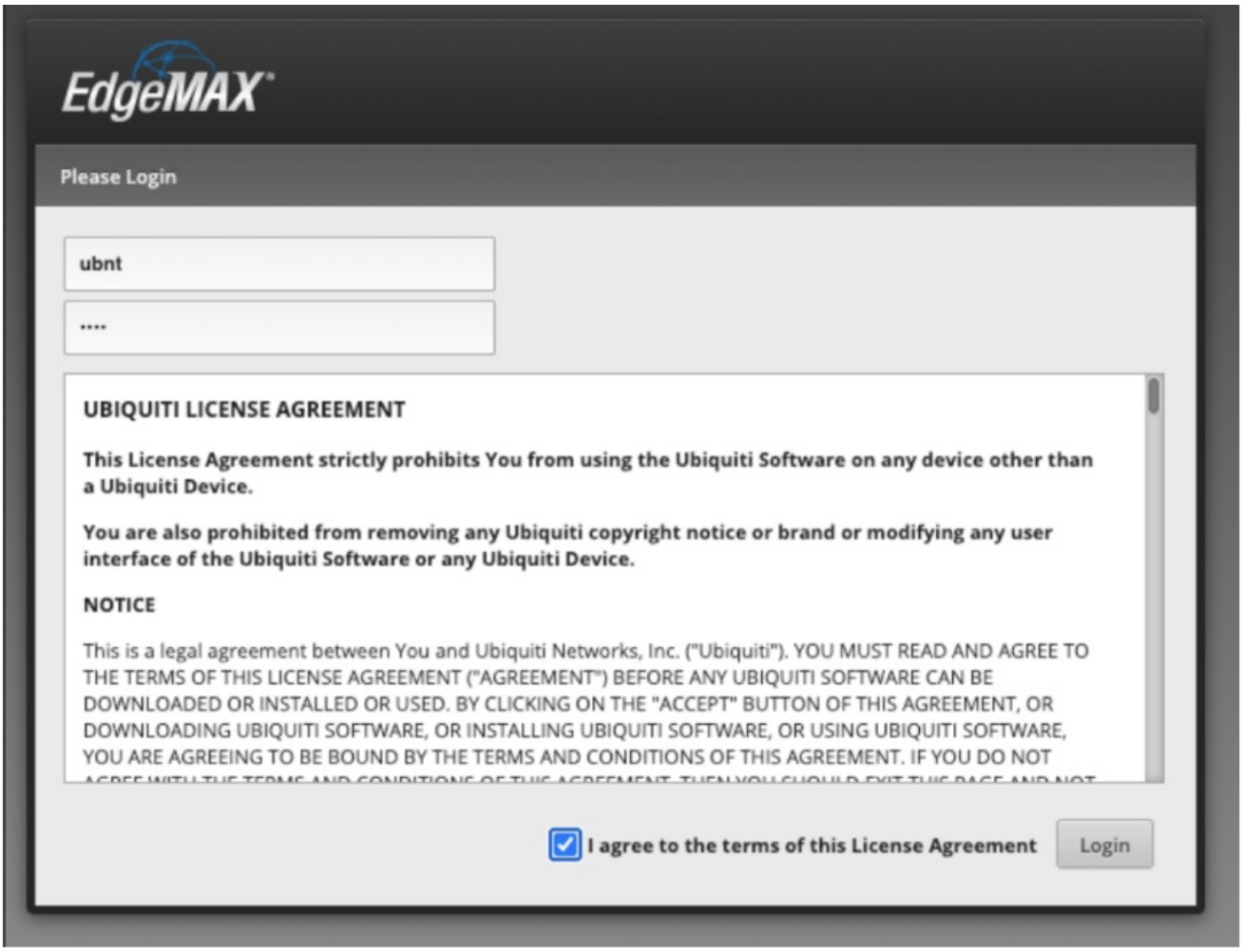
7. At the bottom of the page, enter ubnt in the Password and Confirm Password and click Apply Configuration.
8. Wait 2 minutes for the device to reboot. Do not power off the Networking Kit during this time.
9. To confirm the procedure worked, unplug your laptop from eth2 port and wait 5 seconds. Plug laptop back in to eth2 port. You should see your laptop has been assigned an IP address of 192.168.51.x.
10. Congrats, you successfully changed the IP of your Networking Kit!

For the EdgeRouter

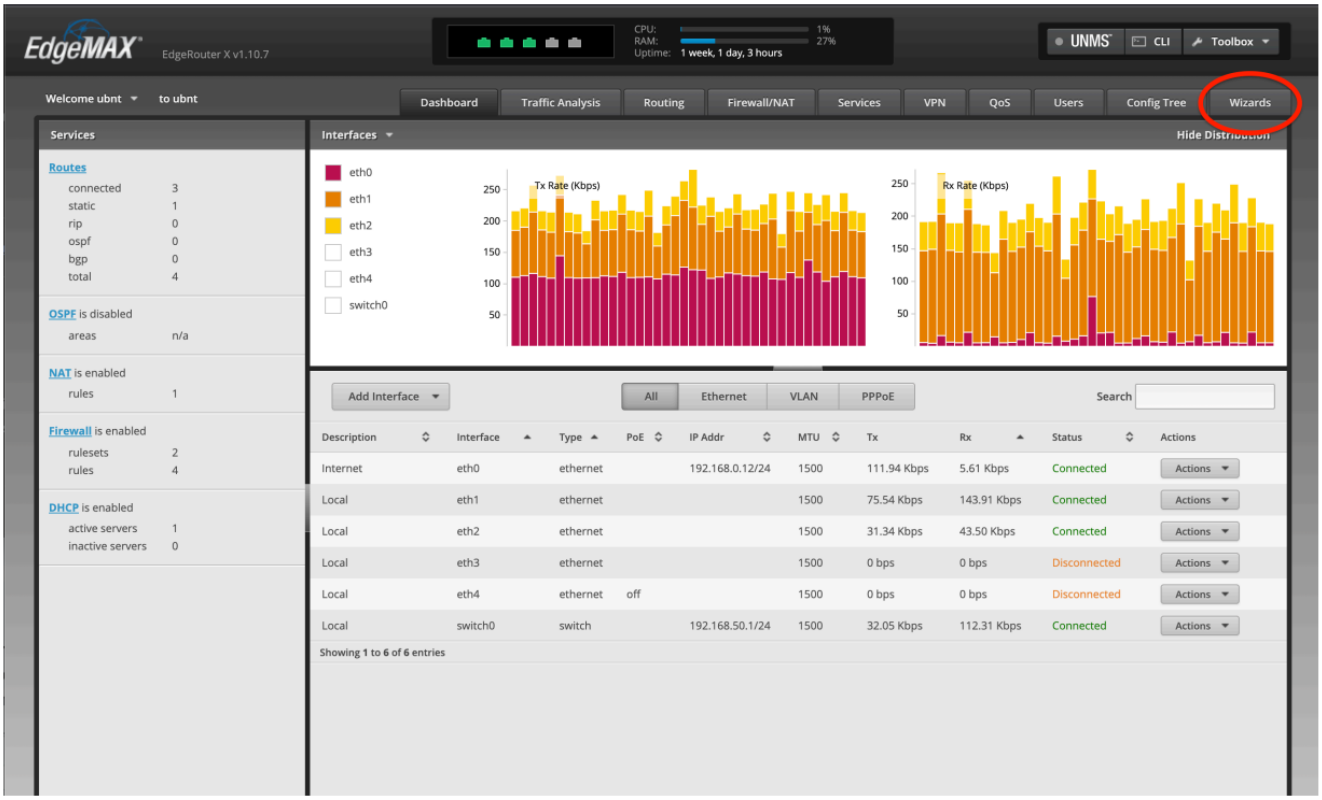
1. Connect your laptop to eth2 port.
2. Open your laptop's Network Setting and ensure your laptop's ethernet connection is configured for DHCP. After connecting, your laptop should receive an IP address of 192.168.50.x.
3. In your internet browser, type in 192.168.50.1 and click enter to navigate to this address.
4. Click Advanced and Proceed to localhost (unsafe) to continue to the set-up page.



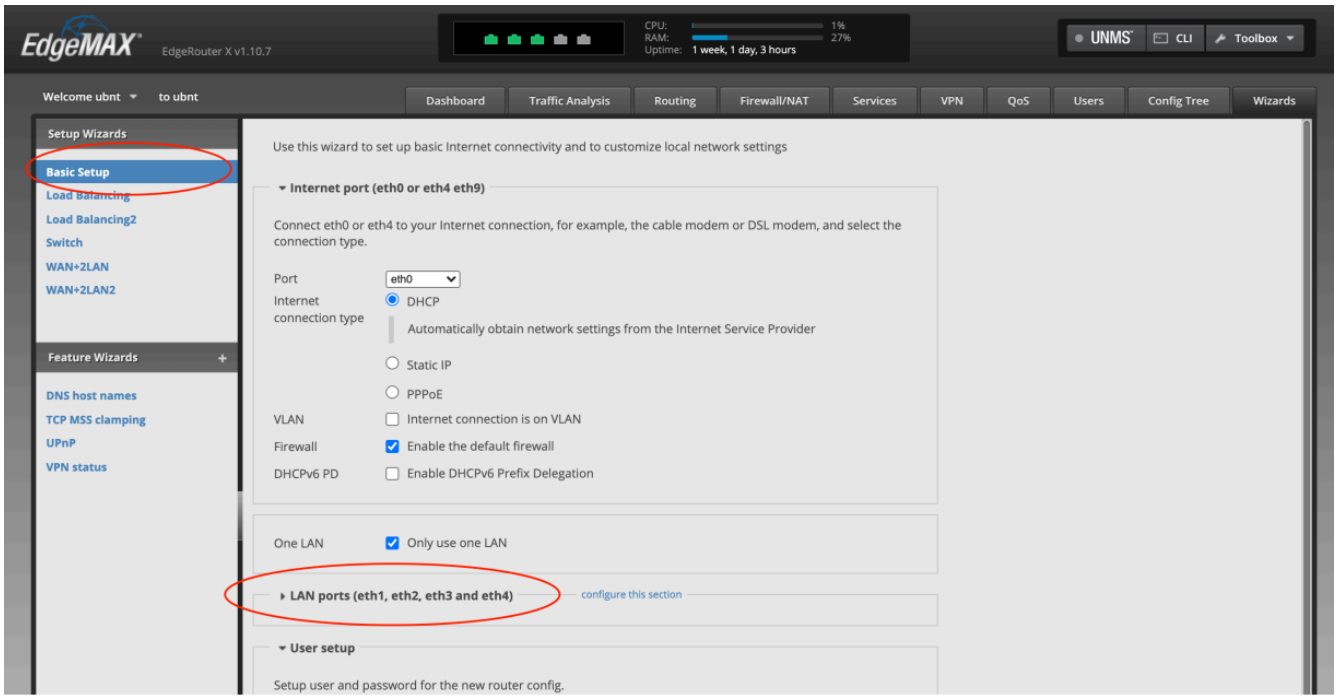
5. Log in with the credentials ubnt for both the username and password.



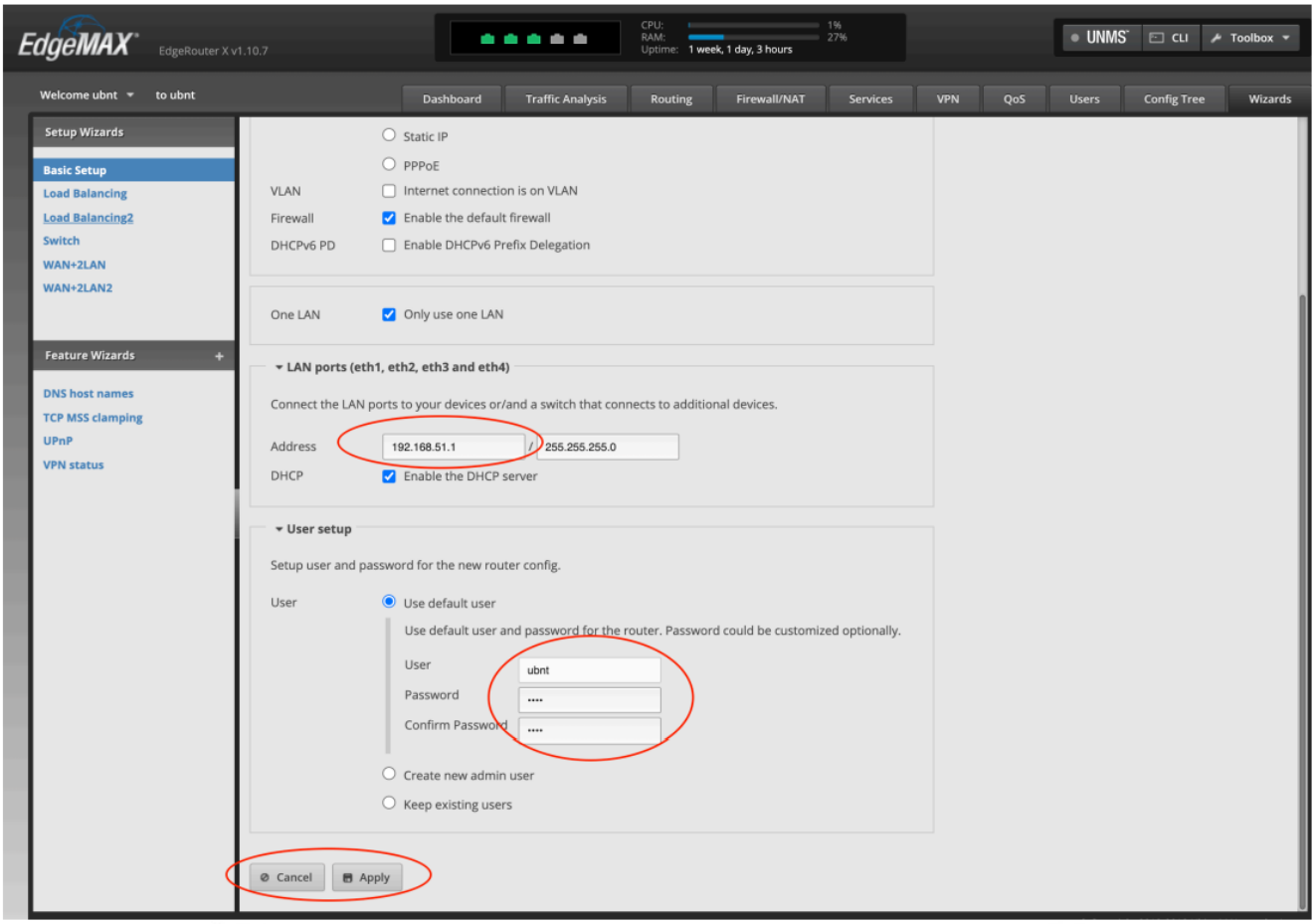
6. Once logged in, click Wizards in the top right-hand corner of the screen.

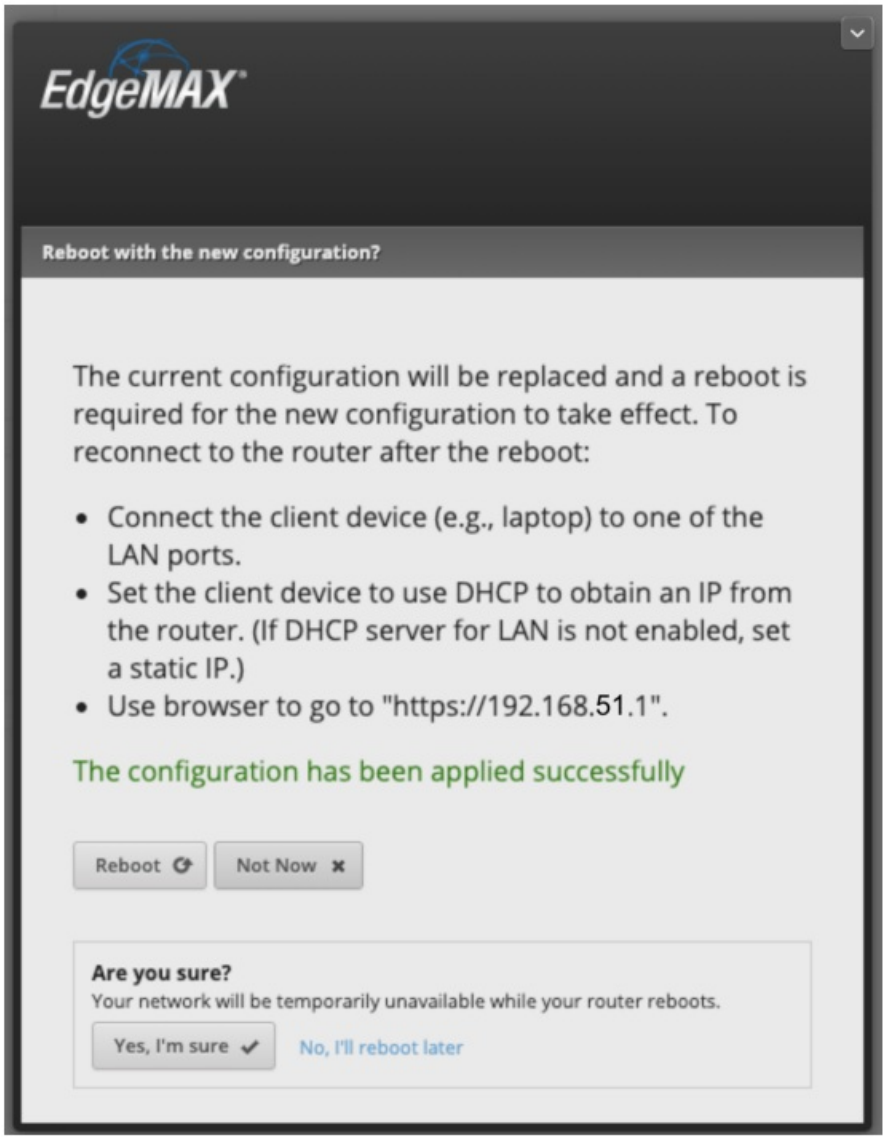


7. Click Basic Setup over on the left side menu, and click LAN ports (eth1, eth2, eth3, eth4).



8. Under the LAN ports, change the address to 192.168.51.1. Type in ubnt for the Password and Confirm Password. Click Apply to save the new changes. Reboot the Panel when it requests to do so.


EdgeMAX
EdgeRouter X v1.10.7
CPU: 1%
RAM: 27%
Uptime: 1 week, 1 day, 3 hours
UNMS
CLI
Toolbox
Welcome ubnt
to ubnt
Dashboard
Traffic Analysis
Routing
Firewall/NAT
Services
VPN
QoS
Users
Config Tree
Wizards
Setup Wizards
Basic Setup
Load Balancing
Load Balancing2
Switch
WAN+2LAN
WAN+2LAN2
Feature Wizards
DNS host names
TCP MSS clamping
UPnP
VPN status
Static IP
PPPoE
VLAN
Internet connection is on VLAN
Firewall
Enable the default firewall
DHCPv6 PD
Enable DHCPv6 Prefix Delegation
One LAN
Only use one LAN
LAN ports (eth1, eth2, eth3 and eth4)
Connect the LAN ports to your devices or/and a switch that connects to additional devices.
Address
192.168.51.1
255.255.255.0
DHCP
Enable the DHCP server
User setup
Setup user and password for the new router config.
User
Use default user
Use default user and password for the router. Password could be customized optionally.
User
ubnt
Password
Confirm Password
Create new admin user
Keep existing users
Cancel
Apply


EdgeMAX
Reboot with the new configuration?
The current configuration will be replaced and a reboot is required for the new configuration to take effect. To reconnect to the router after the reboot:
Connect the client device (e.g., laptop) to one of the LAN ports.
Set the client device to use DHCP to obtain an IP from the router. (If DHCP server for LAN is not enabled, set a static IP.)
Use browser to go to "https://192.168.51.1".
The configuration has been applied successfully
Reboot
Not Now
Are you sure?
Your network will be temporarily unavailable while your router reboots.
Yes, I'm sure
No, I'll reboot later

9. Wait 2 minutes for the device to reboot. Do not power off the Networking Kit during this time. To confirm the procedure worked, unplug your laptop from eth2 port and wait 5 seconds. Plug laptop back in to eth2 port. You should see your laptop has been assigned an IP address of 192.168.51.x.
10. Congrats, you successfully changed the IP of your Networking Kit!

Revision	Note
2021-02-01	Original release
2021-03-08	Included guidance on installing a SPAN Networking Kit
2021-03-31	• Included homeowner and installer experience for multi-Panel set up under one us er account • Changed Power Assist terminology to Automatic Load Shed • Removed caption stating users must log into another account to access another P anel from Figure 1 • Added info regarding max number of SPAN Panels per Networking Kit
2021-04-23	Added Networking Kit requirements with Tesla Gateway
2021-07-28	Updated how homeowners switch between their different SPAN Panels
2021-12-28	• Included some more IP information about Networking Kit • Added instructions to change Networking Kit IP address
2022-01-03	Fixed Amazon Alexa compatibility for multi-SPAN sites
2021-02-14	• Added example picture of comms wiring between multi-SPAN Panel and Tesla G ateway • Updated all Gen 1 pictures with Gen 2 pictures
2023-02-13	• Merged Networking Kit App Note with this document • Migrated Comms Wiring Installation out of this document to Panel Installation and Storage Integration Manual
2023-07-11	Updated SPAN Home App screenshots to reflect latest App UI

Documents / Resources

	**SPAN Multi Panel Configurations** [pdf] User Guide Multi Panel Configurations, Multi, Panel Configurations, Configurations

References

- **SPAN® Home | Harness your power**
- **User Manual**