

LINC 360

Controller Web Interface

User Manual

6002, Rev. 1.3.0, 2026-Nov-05

ADB SAFEGATE

A.0 Disclaimer / Standard Warranty

CE certification

The equipment listed as CE certified means that the product complies with the essential requirements concerning safety and hygiene. The European directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

ETL certification

The equipment listed as ETL certified means that the product complies with the essential requirements concerning safety and C22.2 No.180:13 (R2018) regulations. The CSA directives that have been taken into consideration in the design are available on written request to ADB SAFEGATE.

All Products Guarantee

ADB SAFEGATE will correct by repair or replacement per the applicable guarantee below, at its option, equipment or parts which fail because of mechanical, electrical or physical defects, provided that the goods have been properly handled and stored prior to installation, properly installed and properly operated after installation, and provided further that Buyer gives ADB SAFEGATE written notice of such defects after delivery of the goods to Buyer. Refer to the Safety section for more information on Material Handling Precautions and Storage precautions that must be followed.

ADB SAFEGATE reserves the right to examine goods upon which a claim is made. Said goods must be presented in the same condition as when the defect therein was discovered. ADB SAFEGATE furthers reserves the right to require the return of such goods to establish any claim.

ADB SAFEGATE's obligation under this guarantee is limited to making repair or replacement within a reasonable time after receipt of such written notice and does not include any other costs such as the cost of removal of defective part, installation of repaired product, labor or consequential damages of any kind, the exclusive remedy being to require such new parts to be furnished.

ADB SAFEGATE's liability under no circumstances will exceed the contract price of goods claimed to be defective. Any returns under this guarantee are to be on a transportation charges prepaid basis. For products not manufactured by, but sold by ADB SAFEGATE, warranty is limited to that extended by the original manufacturer. This is ADB SAFEGATE's sole guarantee and warranty with respect to the goods; there are no express warranties or warranties of fitness for any particular purpose or any implied warranties of fitness for any particular purpose or any implied warranties other than those made expressly herein. All such warranties being expressly disclaimed.

Standard Products Guarantee

Products manufactured by ADB SAFEGATE are guaranteed against mechanical, electrical, and physical defects (excluding lamps) which may occur during proper and normal use for a period of two years from the date of ex-works delivery, and are guaranteed to be merchantable and fit for the ordinary purposes for which such products are made.

Note

See your applicable sales agreement for a complete warranty description.

Replaced or repaired equipment under warranty falls into the warranty of the original delivery. No new warranty period is started for these replaced or repaired products.

FAA Certified products manufactured by ADB SAFEGATE

ADB SAFEGATE L858 Airfield Guidance Signs are warranted against mechanical and physical defects in design or manufacture for a period of 2 years from date of installation, per FAA AC 150/5345-44 (applicable edition).

ADB SAFEGATE LED products (with the exception of obstruction lighting) are warranted against electrical defects in design or manufacture of the LED or LED specific circuitry for a period of 4 years from date of installation, per FAA EB67 (applicable edition). These FAA certified constant current (series) powered LED products must be installed, interfaced and powered with and through products certified under the FAA Airfield Lighting Equipment Program (ALECP) to be included in this 4 (four) year warranty. This includes, but is not limited to, interface with products such as Base Cans, Isolation Transformers, Connectors, Wiring, and Constant Current Regulators.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Note

See your sales order contract for a complete warranty description.

Replaced or repaired equipment under warranty falls into the warranty of the original delivery. No new warranty period is started for these replaced or repaired products.

Liability

WARNING

Use of the equipment in ways other than described in the catalog leaflet and the manual may result in personal injury, death, or property and equipment damage. Use this equipment only as described in the manual.

ADB SAFEGATE cannot be held responsible for injuries or damages resulting from non-standard, unintended uses of its equipment. The equipment is designed and intended only for the purpose described in the manual. Uses not described in the manual are considered unintended uses and may result in serious personal injury, death or property damage.

Unintended uses, includes the following actions:

- Making changes to equipment that have not been recommended or described in this manual or using parts that are not genuine ADB SAFEGATE replacement parts or accessories.
- Failing to make sure that auxiliary equipment complies with approval agency requirements, local codes, and all applicable safety standards if not in contradiction with the general rules.
- Using materials or auxiliary equipment that are inappropriate or incompatible with your ADB SAFEGATE equipment.
- Allowing unskilled personnel to perform any task on or with the equipment.

Copyright Statement

This manual or parts thereof may not be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, nor otherwise, without the author's prior written consent.

This manual could contain technical inaccuracies or typographical errors. The author reserves the right to revise this manual from time to time in the contents thereof without obligation of the author to notify any person of such revision or change. Details and values given in this manual are average values and have been compiled with care. They are not binding, however, and the author disclaims any liability for damages or detriments suffered as a result of reliance on the information given herein or the use of products, processes or equipment to which this manual refers. No warranty is made that the use of the information or of the products, processes or equipment to which this manual refers will not infringe any third party's patents or rights. The information given does not release the buyer from making their own experiments and tests.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Table of Contents

1.0 Safety 1
1.1 Safety Messages 1
1.1.1 Introduction to Safety 2
1.1.2 Intended Use 2
1.1.3 Operation Safety 3
1.1.4 Maintenance Safety 3
1.1.5 Material Handling Precautions, ESD 4
1.1.6 Arc Flash and Electric Shock Hazard 4
2.0 Introduction 5
3.0 Initiate Graphical User Interface (GUI) 7
4.0 Navigation Pane 9
4.1 Status Page 11
4.2 Blocks Page 14
4.3 Remotes Page 16
4.4 Lamps Page 18
4.5 Outputs Page 20
4.6 Community Page 21
4.7 Configuration Page 23
4.8 Firmware Page 25
4.9 Statistics Page 27
4.10 Events Page 28
4.11 Controllers Page 29
4.12 Settings Page 29
4.13 Messages Page 30
5.0 Maintenance and Service 33
5.1 Remote Maintenance 33
5.1.1 Replace a Remote 33
5.1.2 Restore a Remote to Factory Settings (Log-off) 36
5.1.3 Remote Firmware Check 37
5.1.4 Remote Firmware Update 41
5.2 Controller Maintenance 49
5.2.1 Controller Firmware Update 50
5.2.2 Controller Modem Firmware Update 60
6.0 Controller Configuration 69
7.0 Troubleshooting 73
A.0 Support 75
A.1 ADB SAFEGATE Website 76
A.2 Recycling 77
A.2.1 Local Authority Recycling 77
A.2.2 ADB SAFEGATE Recycling 77

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

List of Figures

Figure 1: Typical image of the GUI after successfully logging in 7
Figure 2: Controller View 7
Figure 3: User Role Selection 8
Figure 4: Example of a Navigation Item 9
Figure 5: Left: Graphical selected - Right: Table selected 9
Figure 6: Table View More Options/Settings Panel Button 10
Figure 7: Table View Settings Panel 11
Figure 8: Status Page 12
Figure 9: Controller State Selection 12
Figure 10: Blocks Page (Graphical View) 14
Figure 11: Left: Mode OFF - Middle: Mode ON - Right: Play to execute 14
Figure 12: Blocks Page (Table View) 15
Figure 13: Remotes Page 16
Figure 14: Remotes Page Table View Settings 17
Figure 15: Lamps Page 18
Figure 16: Lamps Page (Table View) 19
Figure 17: Outputs Page 20
Figure 18: Outputs Page (Table View) 21
Figure 19: Community Page 22
Figure 20: Configuration Page 23
Figure 21: Configuration in Progress 24
Figure 22: Configuration Waiting for User Input 24
Figure 23: Configuration Success 25
Figure 24: Top left: Firmware Page - Top right: Firmware Target - Below: Firmware Progress 26
Figure 25: Statistics Performance 27
Figure 26: Statistics Message Count 27
Figure 27: Statistics Repeater Depth 28
Figure 28: Events Page 28
Figure 29: Controllers Page 29
Figure 30: Settings Page 30
Figure 31: Messages Page 30
Figure 32: Message Page (expanded) 31
Figure 33: Select the Configuration Preset 33
Figure 34: Enter the New Remote Serial Number 34
Figure 35: Add Remotes for Replacement 35
Figure 36: Start the Remote Replacement Process 36

List of Tables

Table 1: User Roles Options 8
Table 2: Controller State Options 13

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

1.0 Safety

Introduction to Safety

This section contains general safety instructions for installing and using ADB SAFEGATE equipment. Some safety instructions may not apply to the equipment in this manual. Task- and equipment-specific warnings are included in other sections of this manual where appropriate.

1.1 Safety Messages

HAZARD Icons used in this manual

For all HAZARD symbols in use, see the Safety section. All symbols must comply with ISO and ANSI standards.

Carefully read and observe all safety instructions in this manual, which alert you to safety hazards and conditions that may result in personal injury, death or property and equipment damage and are accompanied by the symbols shown below.

	WARNING Failure to observe a warning may result in personal injury, death or equipment damage.
	DANGER – Risk of electrical shock or ARC FLASH Disconnect equipment from line voltage. Failure to observe this warning may result in personal injury, death, or equipment damage. ARC Flash may cause blindness, severe burns or death.
	WARNING – Wear personal protective equipment Failure to observe may result in serious injury.
	WARNING – Do not touch Failure to observe this warning may result in personal injury, death, or equipment damage.
	CAUTION Failure to observe a caution may result in equipment damage.
	ELECTROSTATIC SENSITIVE DEVICES This equipment may contain electrostatic devices.

Qualified Personnel

	**Important Information** The term **qualified personnel** is defined here as individuals who thoroughly understand the equipment and its safe operation, maintenance and repair. Qualified personnel are physically capable of performing the required tasks, familiar with all relevant safety rules and regulations and have been trained to safely install, operate, maintain and repair the equipment. It is the responsibility of the company operating this equipment to ensure that its personnel meet these requirements. Always use required personal protective equipment (PPE) and follow safe electrical work practice.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

1.1.1 Introduction to Safety



CAUTION

Unsafe Equipment Use

This equipment may contain electrostatic devices, hazardous voltages and sharp edges on components

- Read installation instructions in their entirety before starting installation.
- Become familiar with the general safety instructions in this section of the manual before installing, operating, maintaining or repairing this equipment.
- Read and carefully follow the instructions throughout this manual for performing specific tasks and working with specific equipment.
- Make this manual available to personnel installing, operating, maintaining or repairing this equipment.
- Follow all applicable safety procedures required by your company, industry standards and government or other regulatory agencies.
- Install all electrical connections to local code.
- Use only electrical wire of sufficient gauge and insulation to handle the rated current demand. All wiring must meet local codes.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Protect components from damage, wear, and harsh environment conditions.
- Allow ample room for maintenance, panel accessibility, and cover removal.
- Protect equipment with safety devices as specified by applicable safety regulations
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning prior to returning power to the circuit.

Failure to follow these instructions can result in serious injury, death or equipment damage

Additional Reference Materials



Important Information

- IEC – International Standards and Conformity Assessment for all electrical, electronic and related technologies.
- IEC 60364 – Electrical Installations in Buildings.
- CSA – C22.2 No.180:13 (R2018), series isolating transformers for airport lighting.
- FAA Advisory: AC 150/5340-26 (current edition), Maintenance of Airport Visual Aid Facilities.
- Maintenance personnel must refer to the maintenance procedure described in the ICAO Airport Services Manual, Part 9.
- ANSI/NFPA 79, Electrical Standards for Metalworking Machine Tools.
- National and local electrical codes and standards.

1.1.2 Intended Use



CAUTION

Use this equipment as intended by the manufacturer

This equipment is designed to perform a specific function. Do not use this equipment for other purposes

Failure to follow this instruction can result in serious injury, death and / or property and equipment damage

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

1.1.3 Operation Safety



CAUTION

Improper Operation
Do Not Operate this equipment other than as specified by the manufacturer

- Only qualified personnel, physically capable of operating the equipment and with no impairments in their judgment or reaction times, should operate this equipment.
- Read all system component manuals before operating this equipment. A thorough understanding of system components and their operation will help you operate the system safely and efficiently.
- Before starting this equipment, check all safety interlocks, fire-detection systems, and protective devices such as panels and covers. Make sure all devices are fully functional. Do not operate the system if these devices are not working properly. Do not deactivate or bypass automatic safety interlocks or locked-out electrical disconnects or pneumatic valves.
- Protect equipment with safety devices as specified by applicable safety regulations.
- If safety devices must be removed for installation, install them immediately after the work is completed and check them for proper functioning.
- Route electrical wiring along a protected path. Make sure they will not be damaged by moving equipment.
- Never operate equipment with a known malfunction.
- Do not attempt to operate or service electrical equipment if standing water is present.
- Use this equipment only in the environments for which it is rated. Do not operate this equipment in humid, flammable, or explosive environments unless it has been rated for safe operation in these environments.
- Never touch exposed electrical connections on equipment while the power is ON.

Failure to follow these instructions can result in serious injury, death or equipment damage.

1.1.4 Maintenance Safety



DANGER

ELECTRIC SHOCK HAZARD
THIS EQUIPMENT MAY CONTAIN ELECTROSTATIC DEVICES

- DO NOT OPERATE A SYSTEM THAT CONTAINS MALFUNCTIONING COMPONENTS. IF A COMPONENT MALFUNCTIONS, TURN THE SYSTEM OFF IMMEDIATELY.
- DISCONNECT AND LOCK OUT ELECTRICAL POWER.
- ALLOW ONLY QUALIFIED PERSONNEL TO MAKE REPAIRS OR REPLACE MALFUNCTIONING COMPONENTS ACCORDING TO INSTRUCTIONS PROVIDED IN MANUAL.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN DEATH OR EQUIPMENT DAMAGE

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

1.1.5 Material Handling Precautions, ESD



CAUTION

Electrostatic Sensitive Devices
This equipment may contain electrostatic devices

- Protect from electrostatic discharge.
- Electronic modules and components should be touched only when this is unavoidable e.g. soldering, replacement.
- Before touching any component of the cabinet you shall bring your body to the same potential as the cabinet by touching a conductive earthed part of the cabinet.
- Electronic modules or components must not be brought in contact with highly insulating materials such as plastic sheets, synthetic fiber clothing. They must be laid down on conductive surfaces.
- The tip of the soldering iron must be grounded.
- Electronic modules and components must be stored and transported in conductive packing.

Failure to follow this instruction can result in equipment damage

1.1.6 Arc Flash and Electric Shock Hazard



DANGER

SERIES CIRCUITS HAVE HAZARDOUS VOLTAGES
THIS EQUIPMENT PRODUCES HIGH VOLTAGES TO MAINTAIN THE SPECIFIED CURRENT - DO NOT DISCONNECT WHILE ENERGIZED.

- ALLOW ONLY QUALIFIED PERSONNEL TO PERFORM MAINTENANCE, TROUBLESHOOTING, AND REPAIR TASKS.
- ONLY PERSONS WHO ARE PROPERLY TRAINED AND FAMILIAR WITH ADB SAFEGATE EQUIPMENT ARE PERMITTED TO SERVICE THIS EQUIPMENT.
- AN OPEN AIRFIELD CURRENT CIRCUIT IS CAPABLE OF GENERATING >5000 VAC AND MAY APPEAR OFF TO A METER.
- NEVER UNPLUG A DEVICE FROM A CONSTANT CURRENT CIRCUIT WHILE IT IS OPERATING; ARC FLASH MAY RESULT.
- DISCONNECT AND LOCK OUT ELECTRICAL POWER.
- ALWAYS USE SAFETY DEVICES WHEN WORKING ON THIS EQUIPMENT.
- FOLLOW THE RECOMMENDED MAINTENANCE PROCEDURES IN THE PRODUCT MANUALS.
- DO NOT SERVICE OR ADJUST ANY EQUIPMENT UNLESS ANOTHER PERSON TRAINED IN FIRST AID AND CPR IS PRESENT.
- CONNECT ALL DISCONNECTED EQUIPMENT GROUND CABLES AND WIRES AFTER SERVICING EQUIPMENT. GROUND ALL CONDUCTIVE EQUIPMENT.
- USE ONLY APPROVED ADB SAFEGATE REPLACEMENT PARTS. USING UNAPPROVED PARTS OR MAKING UNAPPROVED MODIFICATIONS TO EQUIPMENT MAY VOID AGENCY APPROVALS AND CREATE SAFETY HAZARDS.
- CHECK THE INTERLOCK SYSTEMS PERIODICALLY TO ENSURE THEIR EFFECTIVENESS.
- DO NOT ATTEMPT TO SERVICE ELECTRICAL EQUIPMENT IF STANDING WATER IS PRESENT. USE CAUTION WHEN SERVICING ELECTRICAL EQUIPMENT IN A HIGH-HUMIDITY ENVIRONMENT.
- USE TOOLS WITH INSULATED HANDLES WHEN WORKING WITH AIRFIELD ELECTRICAL EQUIPMENT.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN DEATH OR EQUIPMENT DAMAGE

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

2.0 Introduction

This document is a guide for using the Graphical User Interface (GUI) for standard airfield electrical configuration and maintenance activities with the ADB SAFEGATE LINC 360 powerline carrier system. This system provides individual control and monitoring capabilities to customer-defined airfield lighting segments and provides real time feedback data for the associated fixtures.

Typical maintenance activities performed from this interface include:

- Observing and verifying the status and health of the Controller unit
- Observing and verifying the status and health of the remote units
- Individual lamp control for testing purposes
- Replace failed remote units



Note

Some features found in the interface are reserved for developer use and will not be detailed in this document

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

3.0 Initiate Graphical User Interface (GUI)

To initiate the GUI for a LINC 360 controller unit, use a browser window which can be found from the Windows Start Menu. Type in the IP address of the LINC 360 Controller unit in the URL field and press **Enter** to connect. (The IP address is indicated on the **Status** tab of the Controller unit's touchscreen display.)

Log In

The ADB SAFEGATE project manager provides airport specific login information.

Figure 1: Typical image of the GUI after successfully logging in

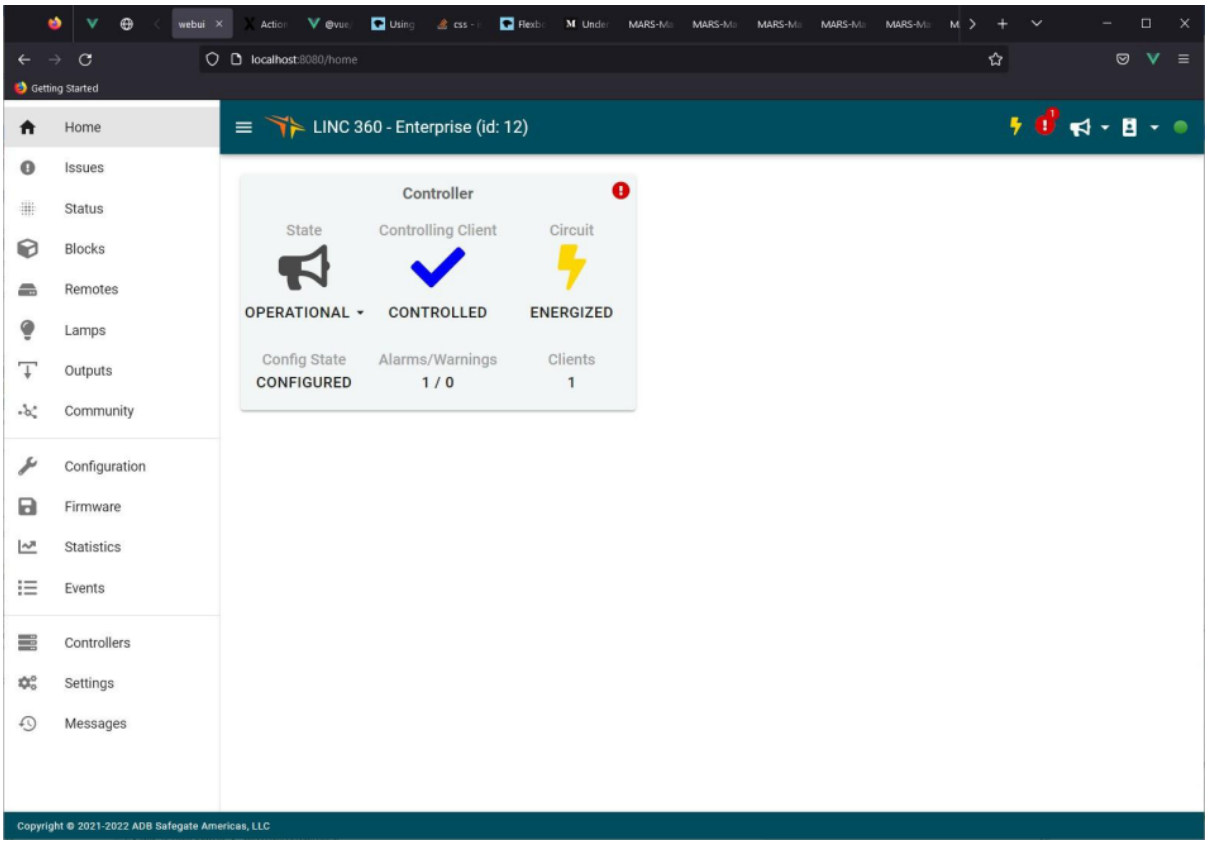


Figure 2: Controller View



Note the fields that indicate the real-time status of the controller unit and associated field circuit:

- The **Controller** can be in **Offline**, **Provisioning**, or **Operational** state. It should always be **Operational**, unless configuration changes are being made.
- The **Config State** can be in **No Config**, **Configured**, or **Discovery** state (during a replacement it progresses through **Remote**, **Pre-Commit**, **Reset** and **Post-Commit**). It should always be in **Configured** except while replacing failed remotes.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

- The **Circuit** indicates **Energized** or **De-energized** depending on the status of the field circuit.

In the user dropdown menu top right, you can select different user profiles.

Figure 3: User Role Selection

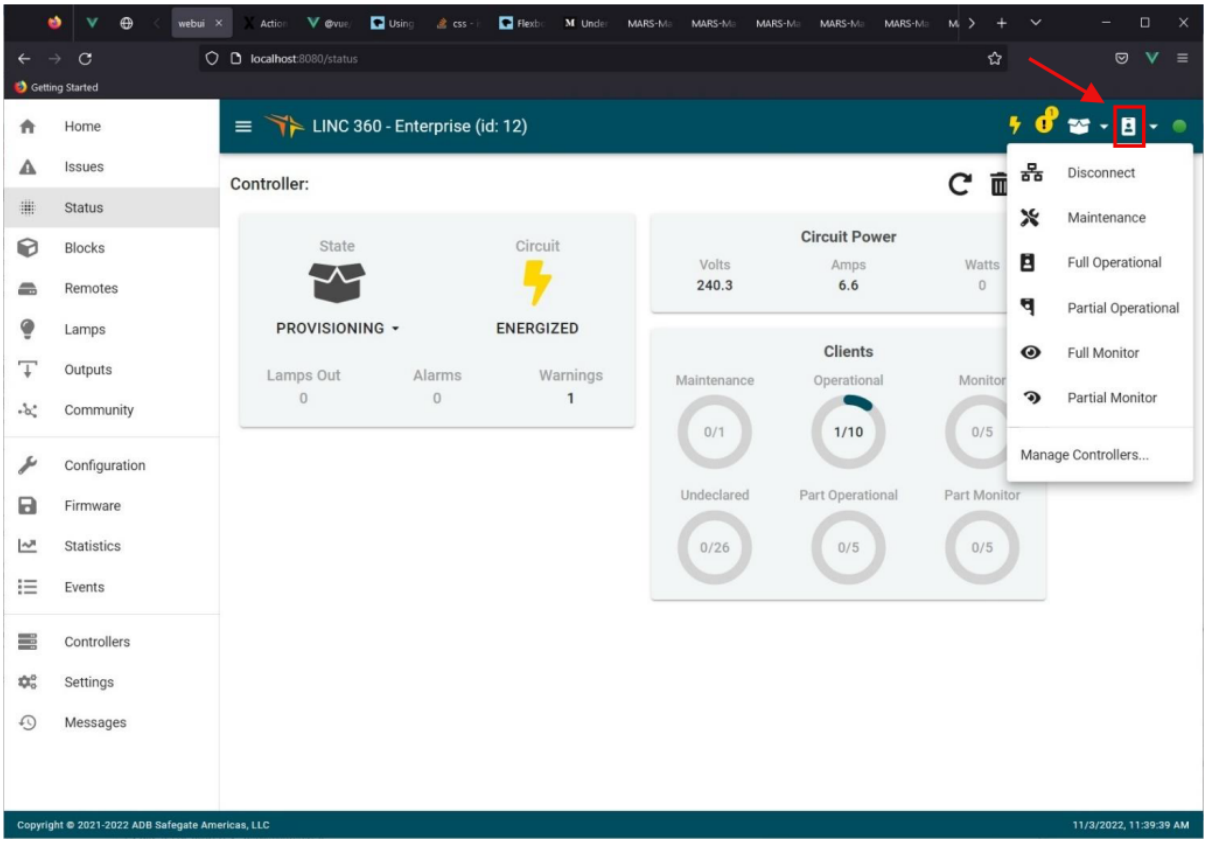


Table 1: User Roles Options

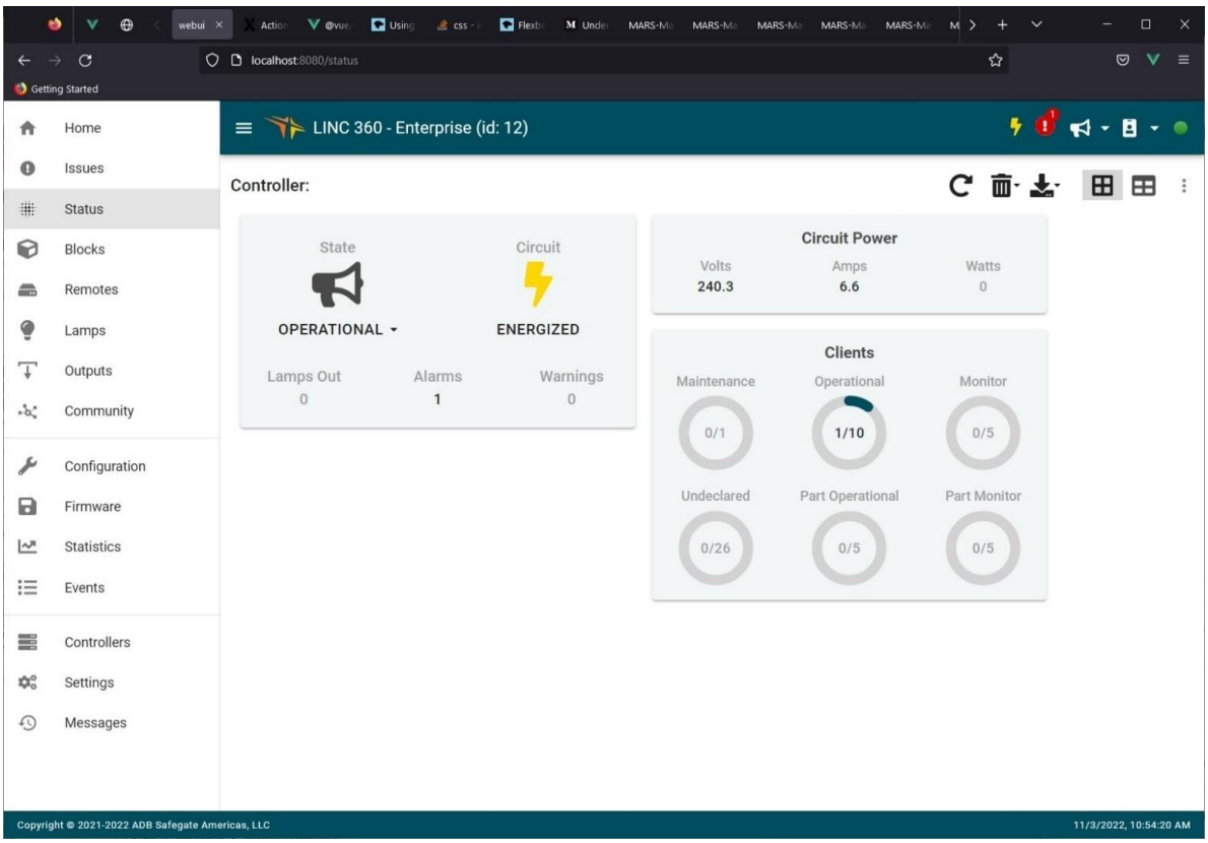
Disconnect	Close the active connection to the controller
Maintenance	Can issue all commands, used for updating firmware, configuring the circuit
Full Operational	Remote replacement, command blocks & lamps, request statuses, diagnostic and logging data
Partial Operational	Command blocks, request block status
Full Monitor	Request diagnostic and logging data, and statuses
Partial Monitor	Can only request block status

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

4.0 Navigation Pane

The navigation pane on the left displays a list of items, such as **Home**, **Status**, **Blocks**, and **Remotes**, that can be selected to navigate to different pages.

Figure 4: Example of a Navigation Item



Each page can be displayed in two views: **Graphical** and **Table**. Use the view selector in the upper-right corner to switch between the views.

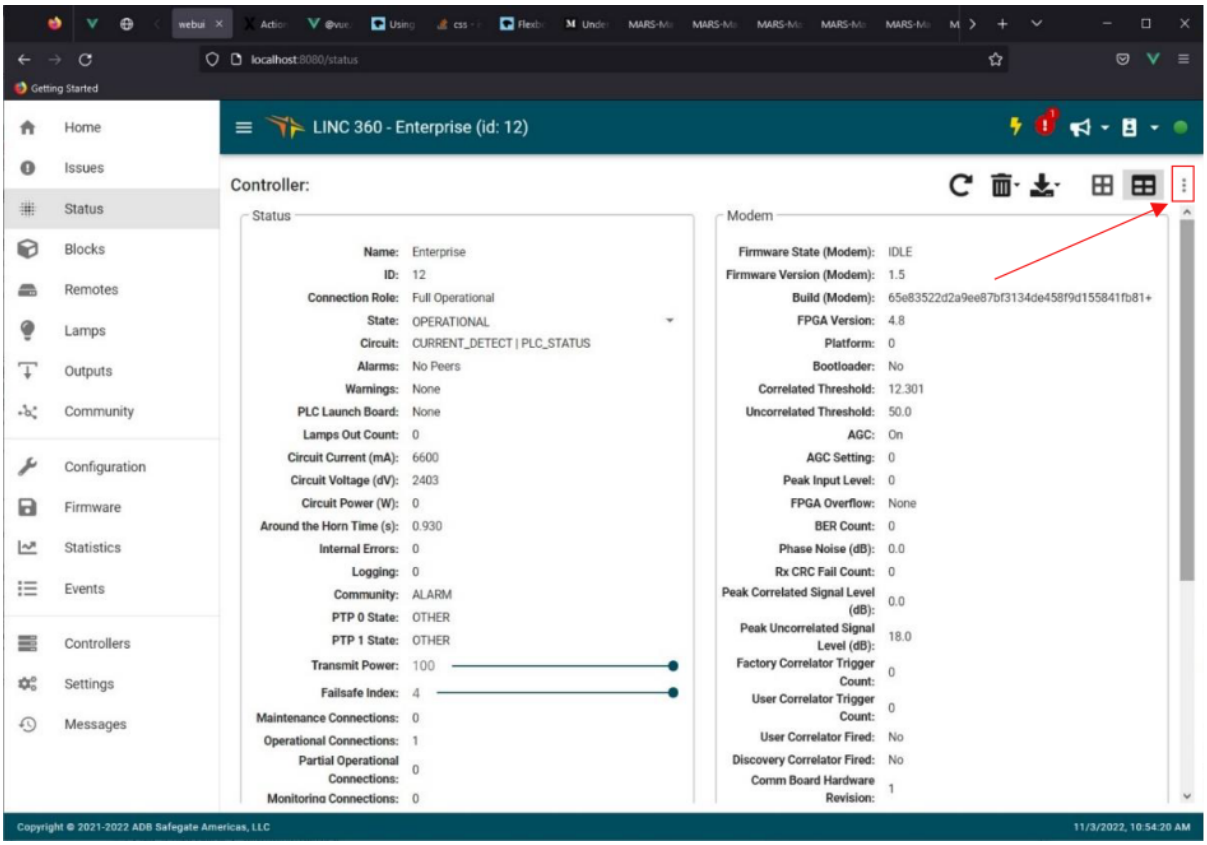
Figure 5: Left: Graphical selected - Right: Table selected



To customize the **Table** view, select **Settings** (⋮) on the right.

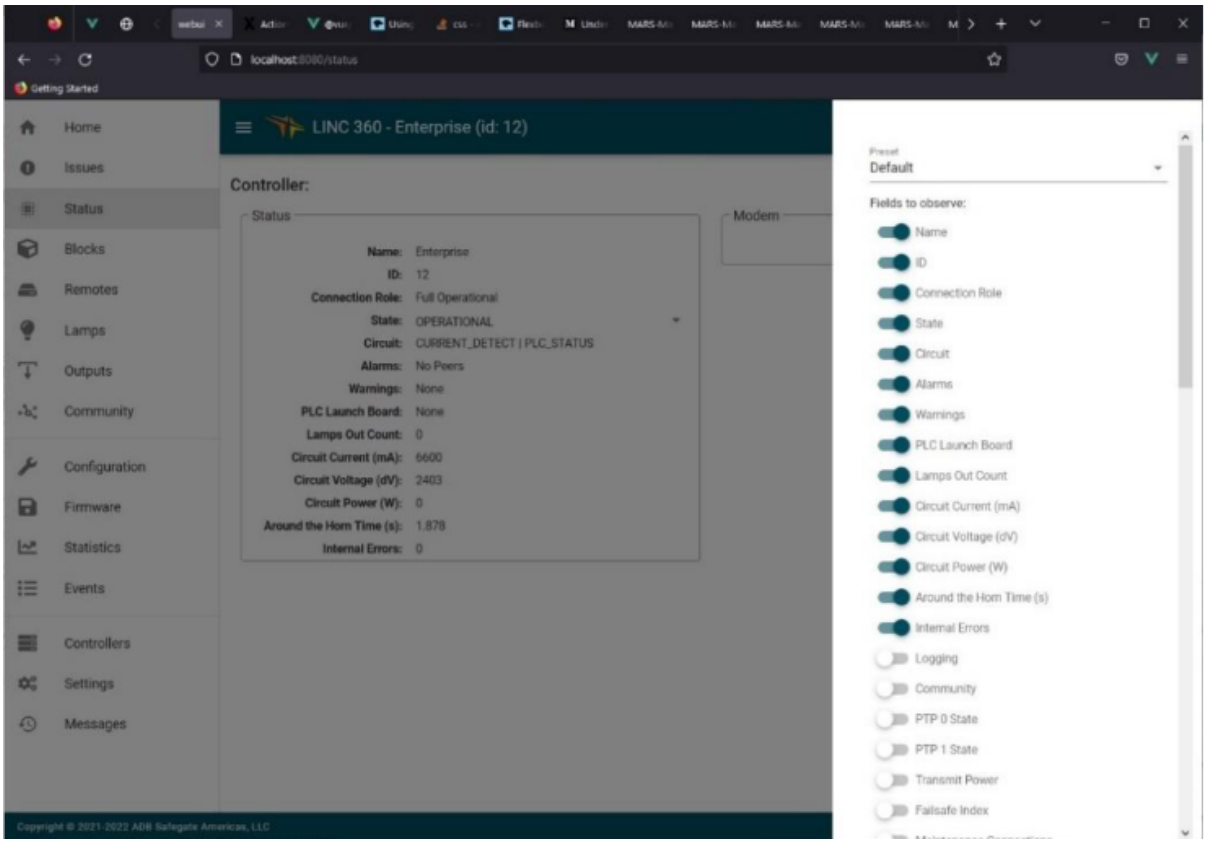
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 6: Table View More Options/Settings Panel Button



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 7: Table View Settings Panel



The **Settings** panel contains switches for selecting the data fields to display in the **Table** view. Some fields are enabled by default.

Use **Preset** to select a predefined combination of data fields. The available presets include **Default** and **Configuration**. The **Configuration** preset can be used to display the fields relevant to a specific process (such as Replacing a Remote).

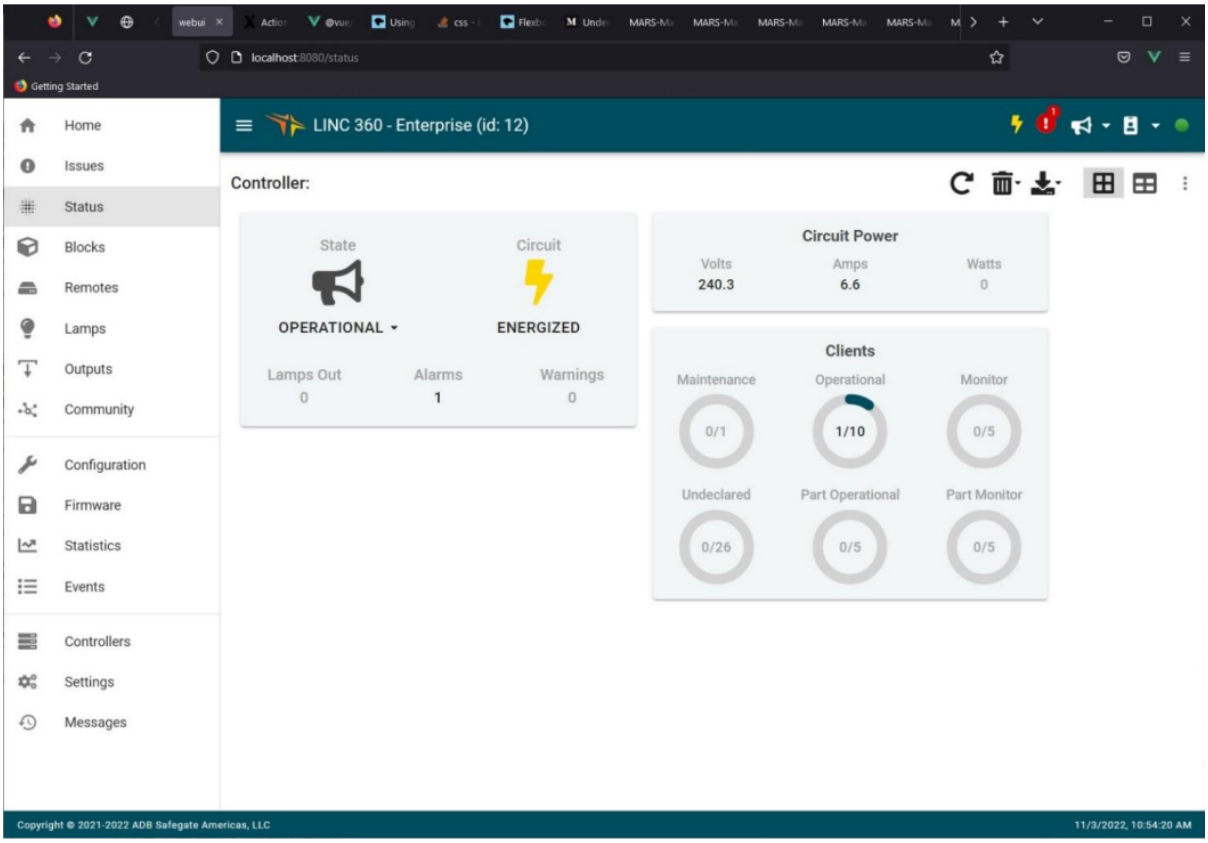
You can also use the individual switches to show or hide specific data fields.

4.1 Status Page

The **Status** page provides real-time information about the operating status of the controller. In addition to identification and alarm information, the page displays field circuit data, including output current, voltage, and power.

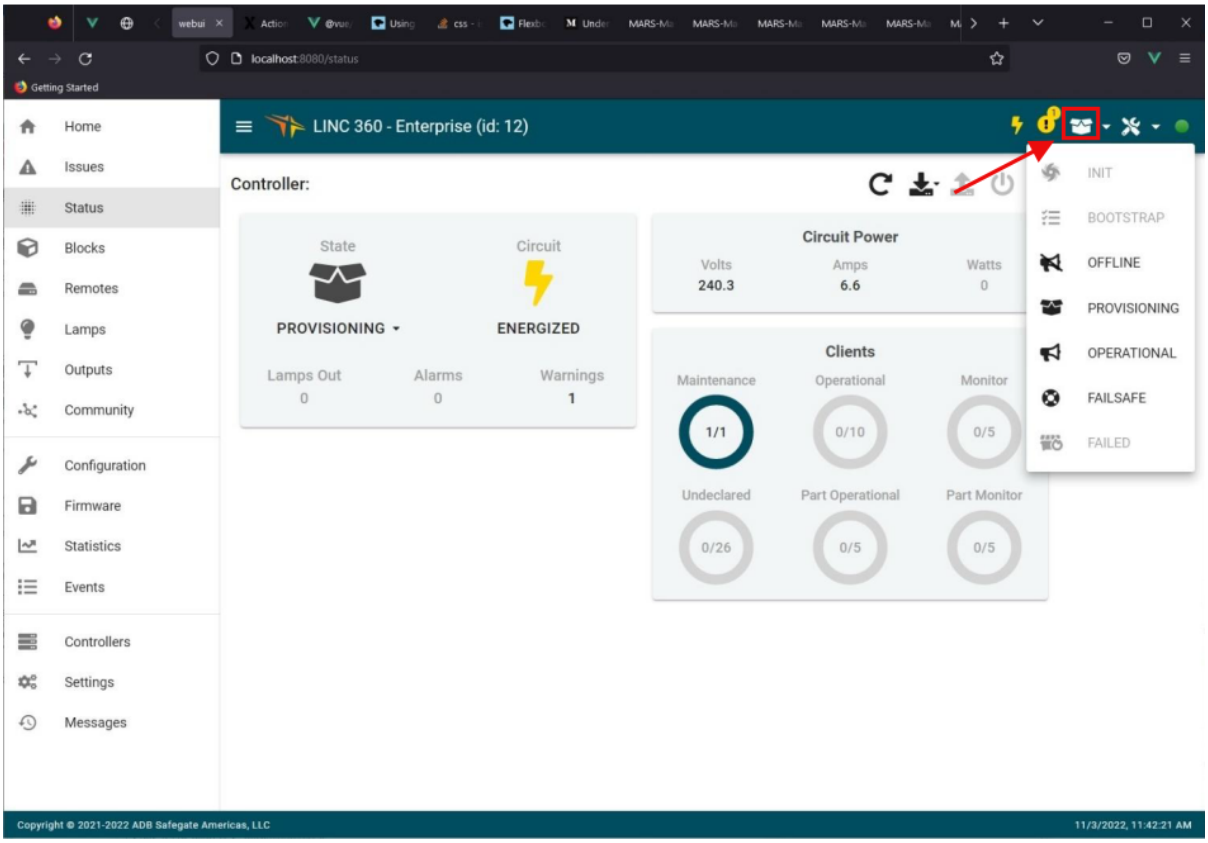
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 8: Status Page



To change the state of the controller click on the drop-down menu in the top right corner next to the **Issues Indicator**.

Figure 9: Controller State Selection



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Table 2: Controller State Options

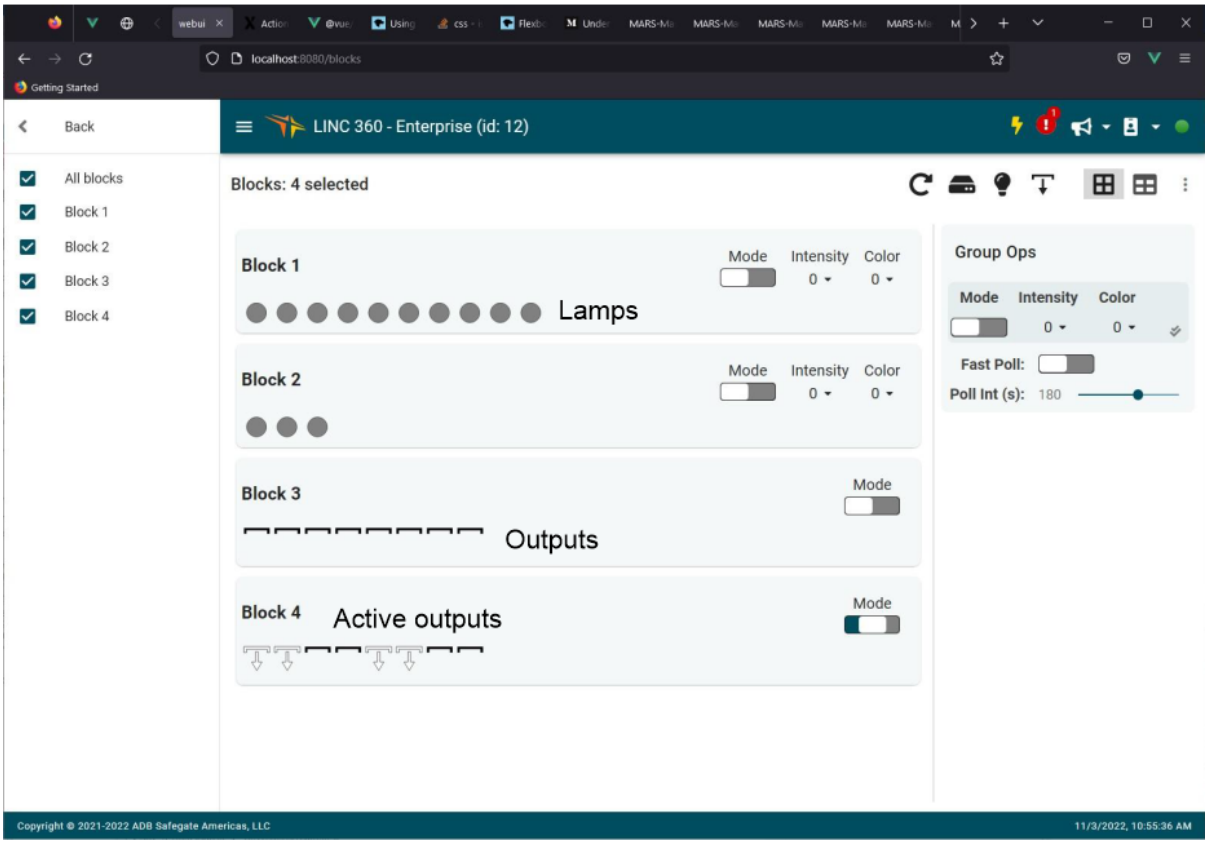
Initializing	State after a power cycle
Bootstrap	Blank delivery mode without IP
Offline	No powerline communication
Provisioning	Configuration of remotes, ATC control still possible
Operational	ATC control
Failsafe	No active network connections
Failed	Critical failure

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

4.2 Blocks Page

The **Blocks** page lists the different blocks (segments) defined in the configuration file and allows individual command of blocks of fixtures pre-defined by the customer.

Figure 10: Blocks Page (Graphical View)



To control an individual segment, select **Mode**, move the slider to the required position, and then select **Play** to apply the setting.

The slider positions indicate the following states:

- **Left, gray:** Segment off.
- **Right, blue:** Segment on.
- **Center, blue and gray:** Segment state undefined

Figure 11: Left: Mode OFF - Middle: Mode ON - Right: Play to execute

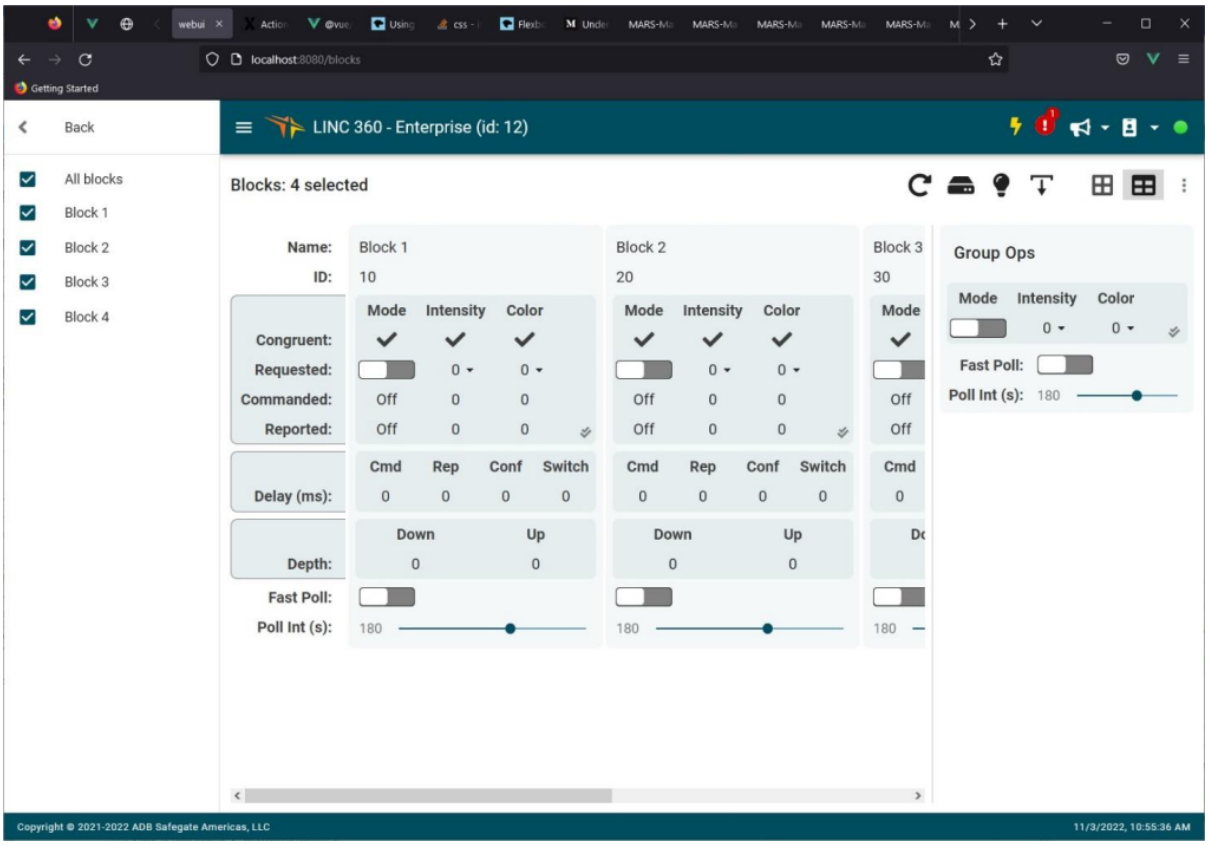


This action temporarily overrides any existing control system commands and is present for testing and lighting checks.

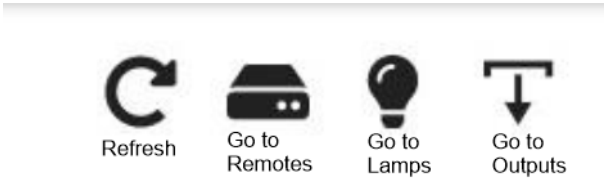
The **Table** view displays the requested mode, commanded mode and reported mode as well as delay times for commands. **Depth** displays the amount of repeater waves used to reach a remote (Down) and back (Up).

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 12: Blocks Page (Table View)



Group Ops enables the user to send a command to multiple blocks at once by making a selection in the list on the left of the screen. At the top there are quick selection buttons for easy navigation:

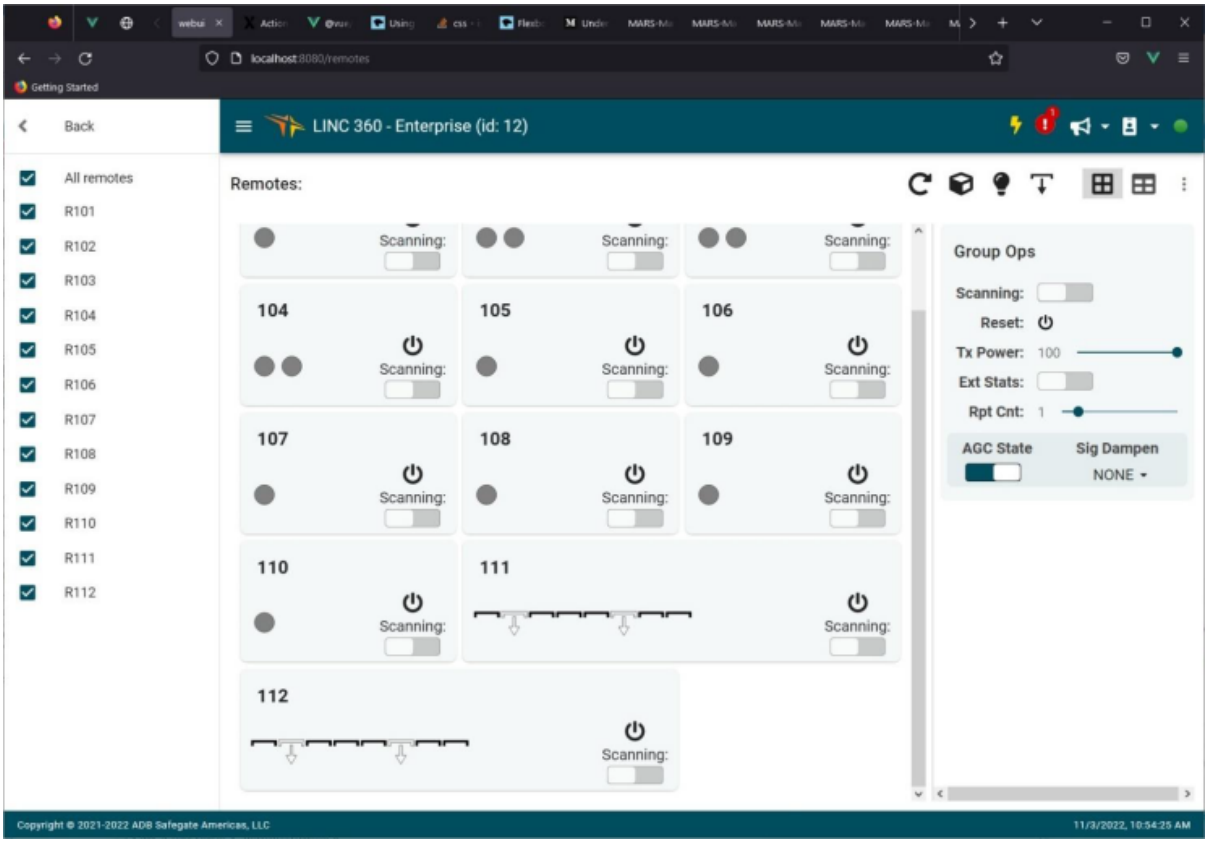


Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

4.3 Remotes Page

The **Remotes** page provides real-time data for each of the remotes and fixtures on the field circuit.

Figure 13: Remotes Page



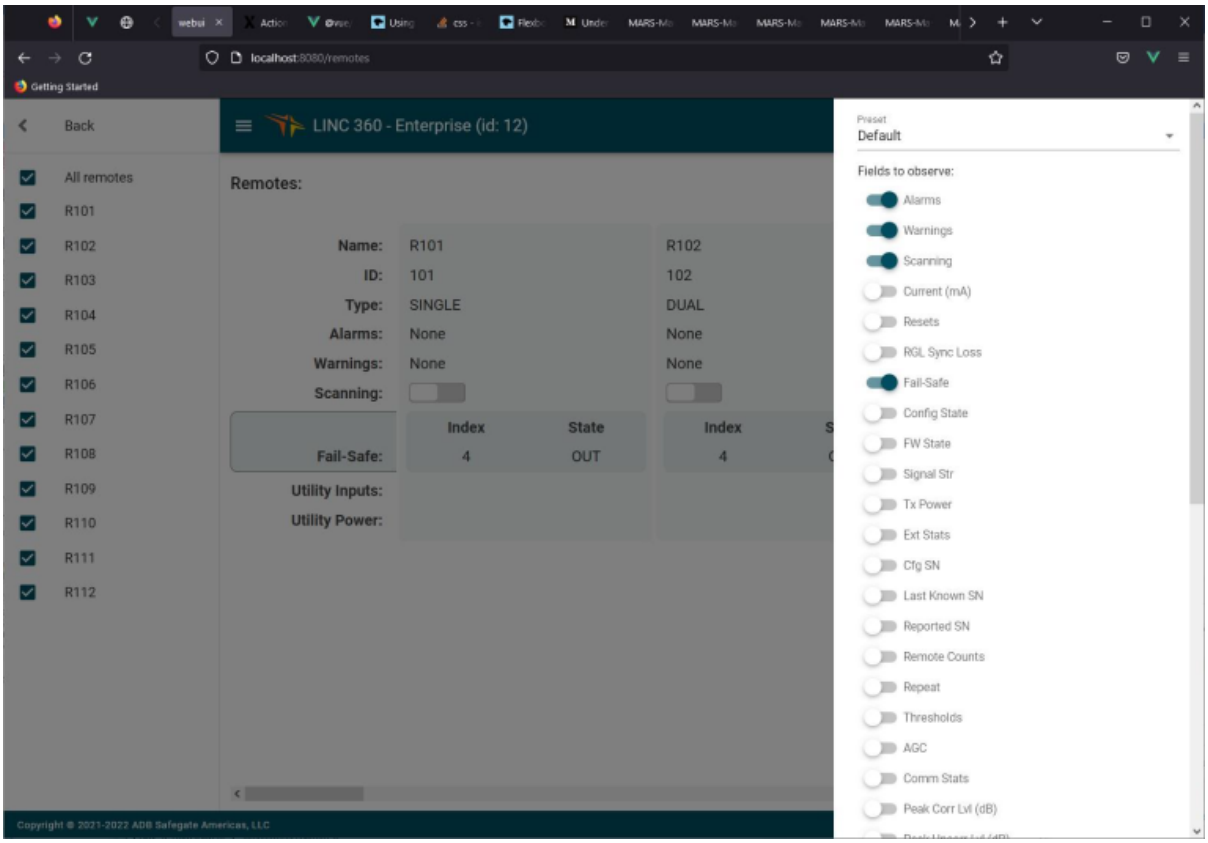
Use the **Remotes** page to place remotes in scanning mode or reset a remote after replacing a failed field lamp.

During normal operation, a remote is locked to the frequency specified in the controller configuration. New remotes operate in scanning mode and scan all frequencies for a configuration request from the controller. Scanning mode can also be used during commissioning to test different frequencies for a circuit configuration.

The **Table** view provides more information for each individual remote and can be customized to display additional data.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 14: Remotes Page Table View Settings

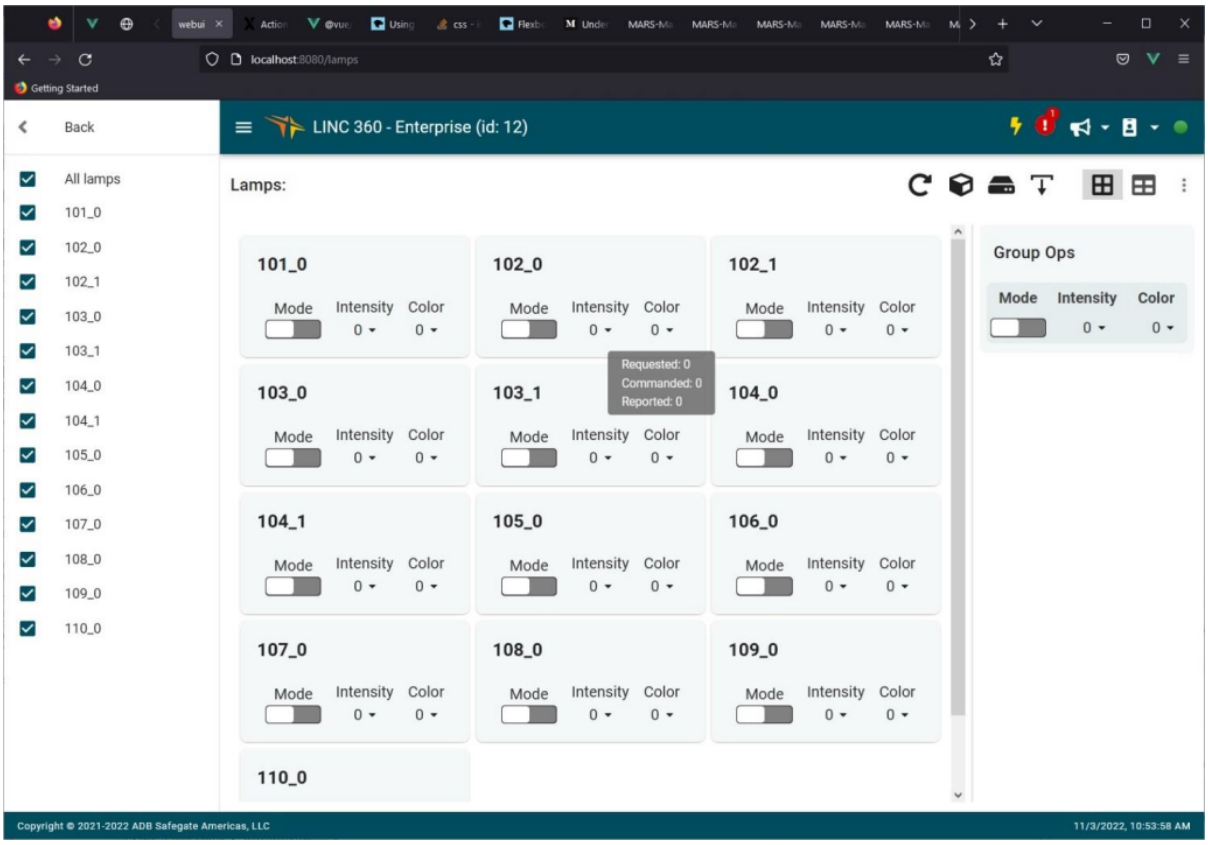


Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

4.4 Lamps Page

The **Lamps** page displays the current state of each lamp. Hover over a lamp to view its **Requested**, **Commanded**, and **Reported** states.

Figure 15: Lamps Page



For individual lamp control click **Mode** to move the slider.
Slider to the left with gray color segment is off
Slider to the right with blue color segments is on
Slider in the middle with blue and gray colorsundefined

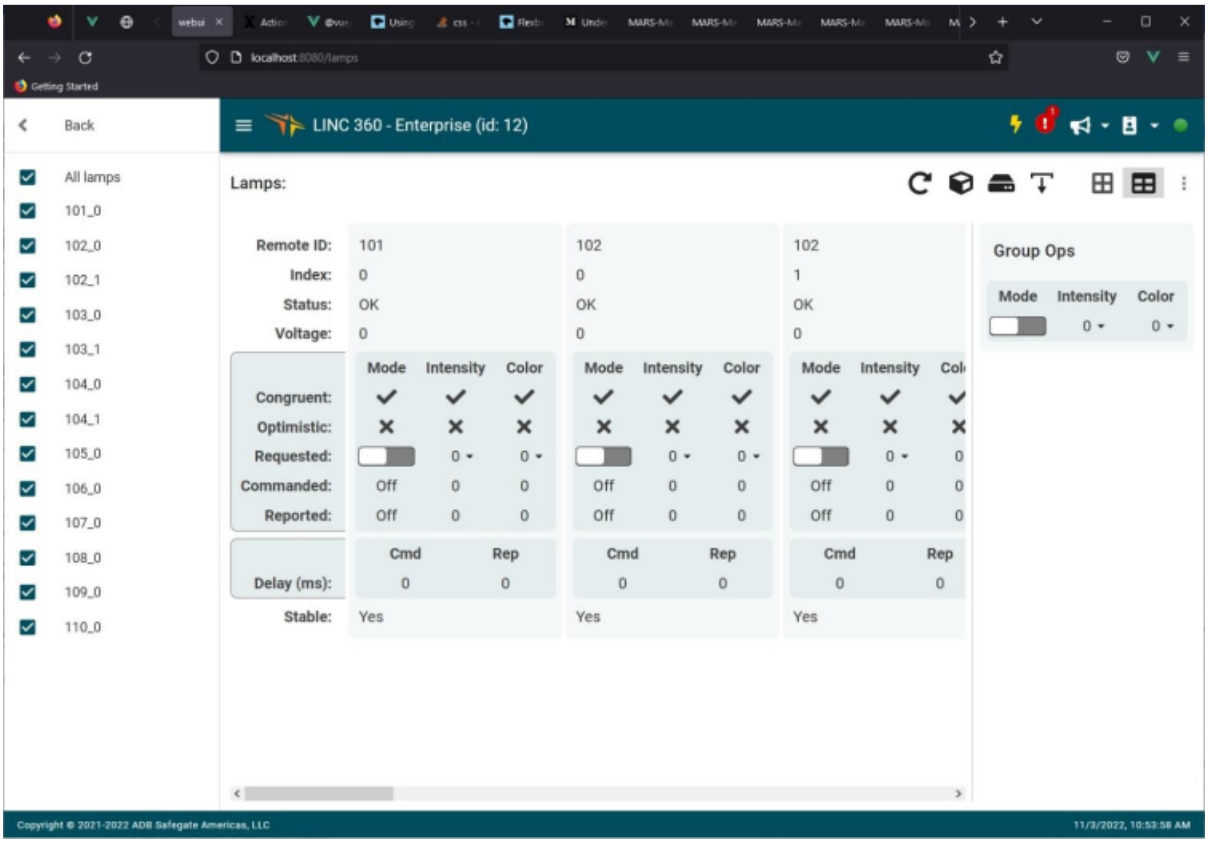
Intensity is not applicable for the moment.

Color only works with the AXON EQ ADAL Lights.

The **Table** view displays additional lamp information, including the **Requested**, **Commanded**, and **Reported** states.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 16: Lamps Page (Table View)

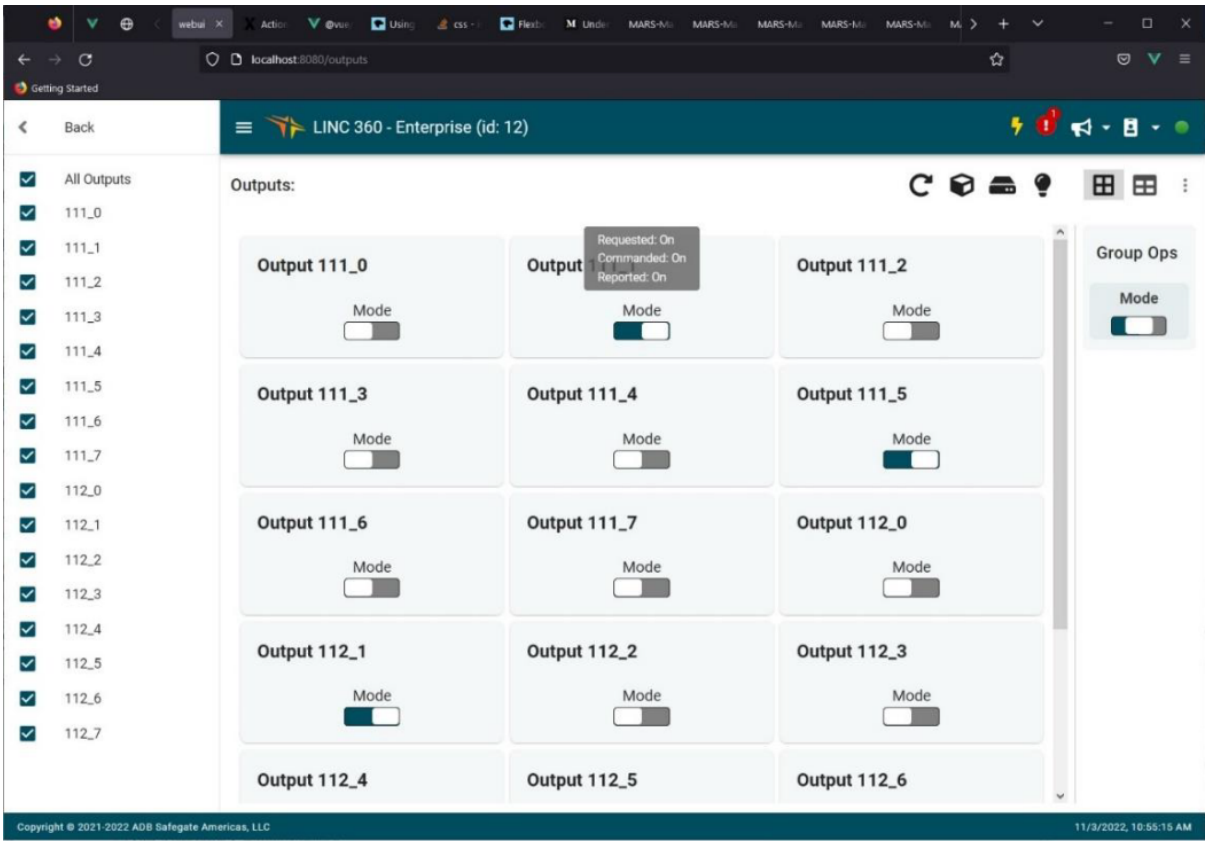


Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

4.5 Outputs Page

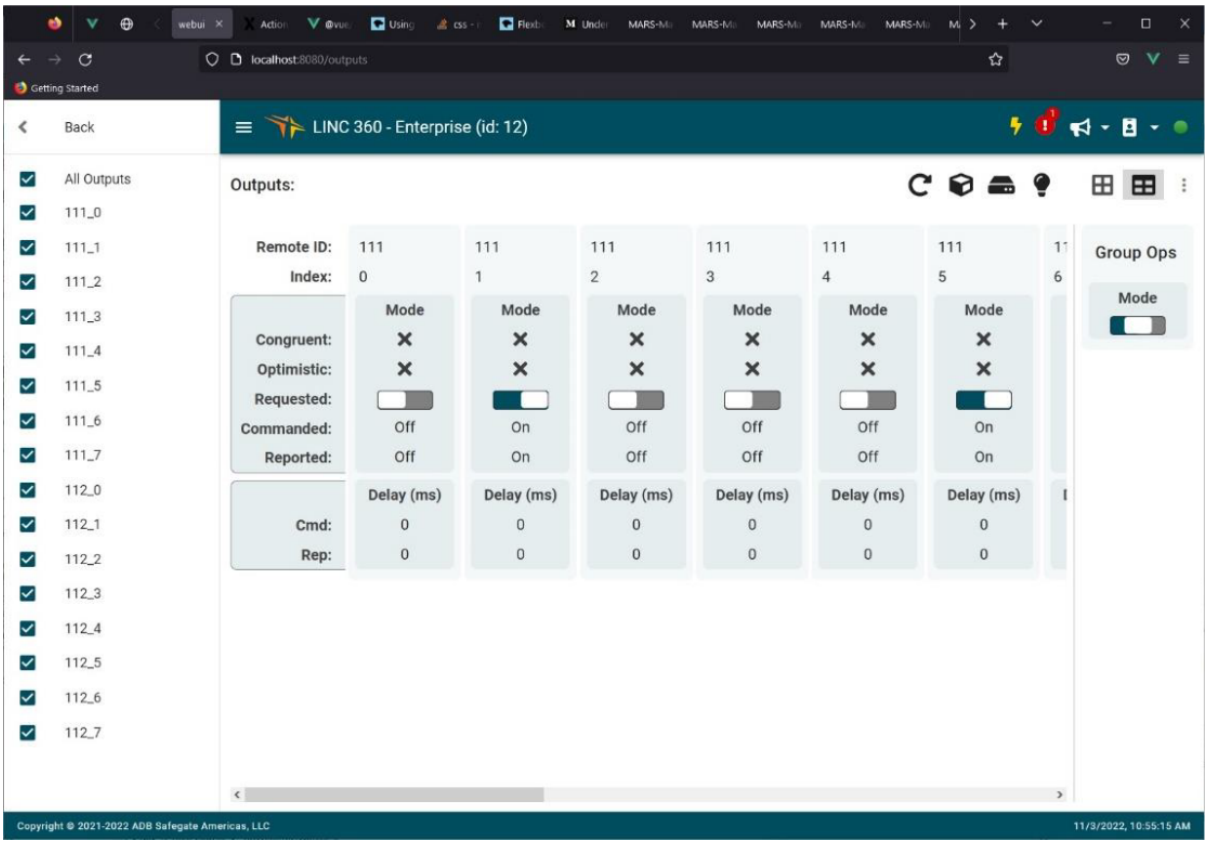
The **Outputs** page displays information about optional I/O Utility Remotes connected to the field circuit, such as those used with microwave or inductive loop detectors.

Figure 17: Outputs Page



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 18: Outputs Page (Table View)

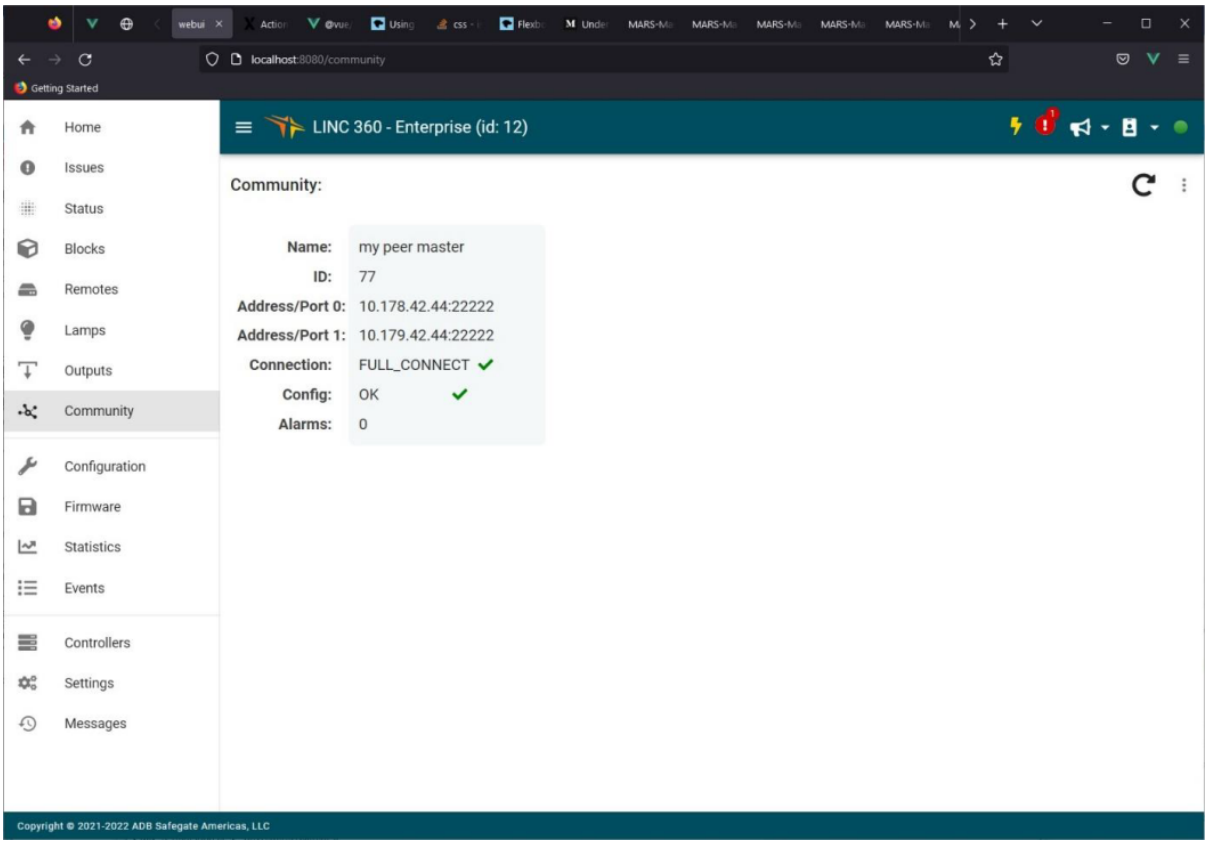


4.6 Community Page

The **Community** page displays information about the controllers connected to the same network.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 19: Community Page

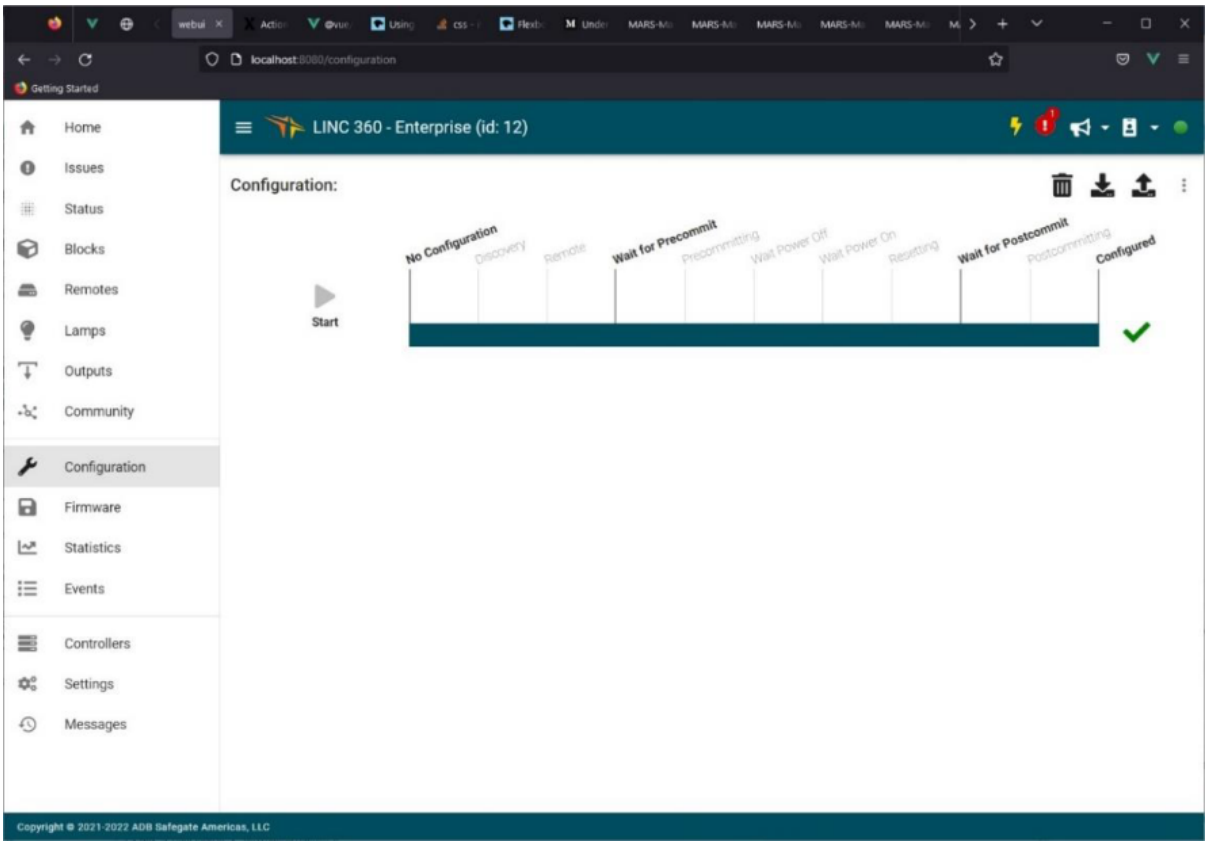


Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

4.7 Configuration Page

The **Configuration** page displays the controller configuration status and allows configuration progress to be monitored during commissioning.

Figure 20: Configuration Page



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 21: Configuration in Progress

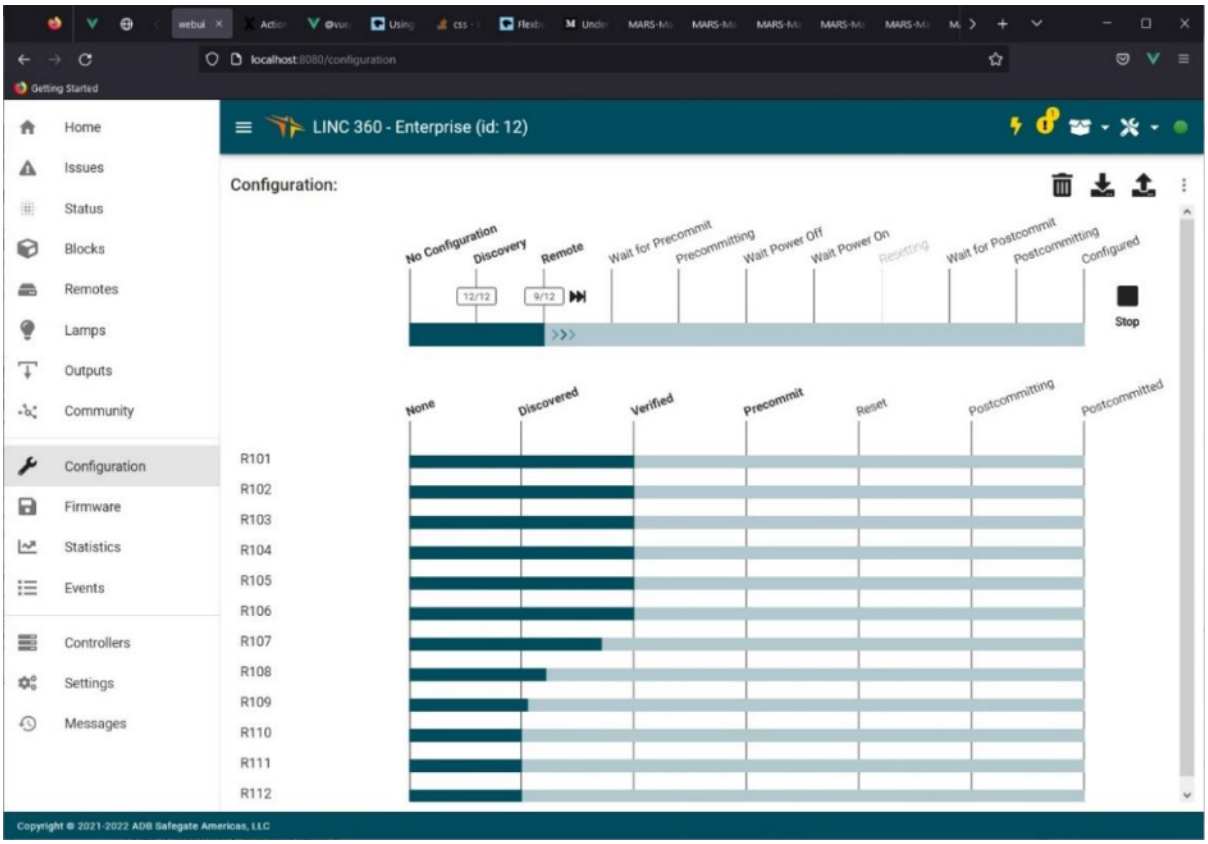
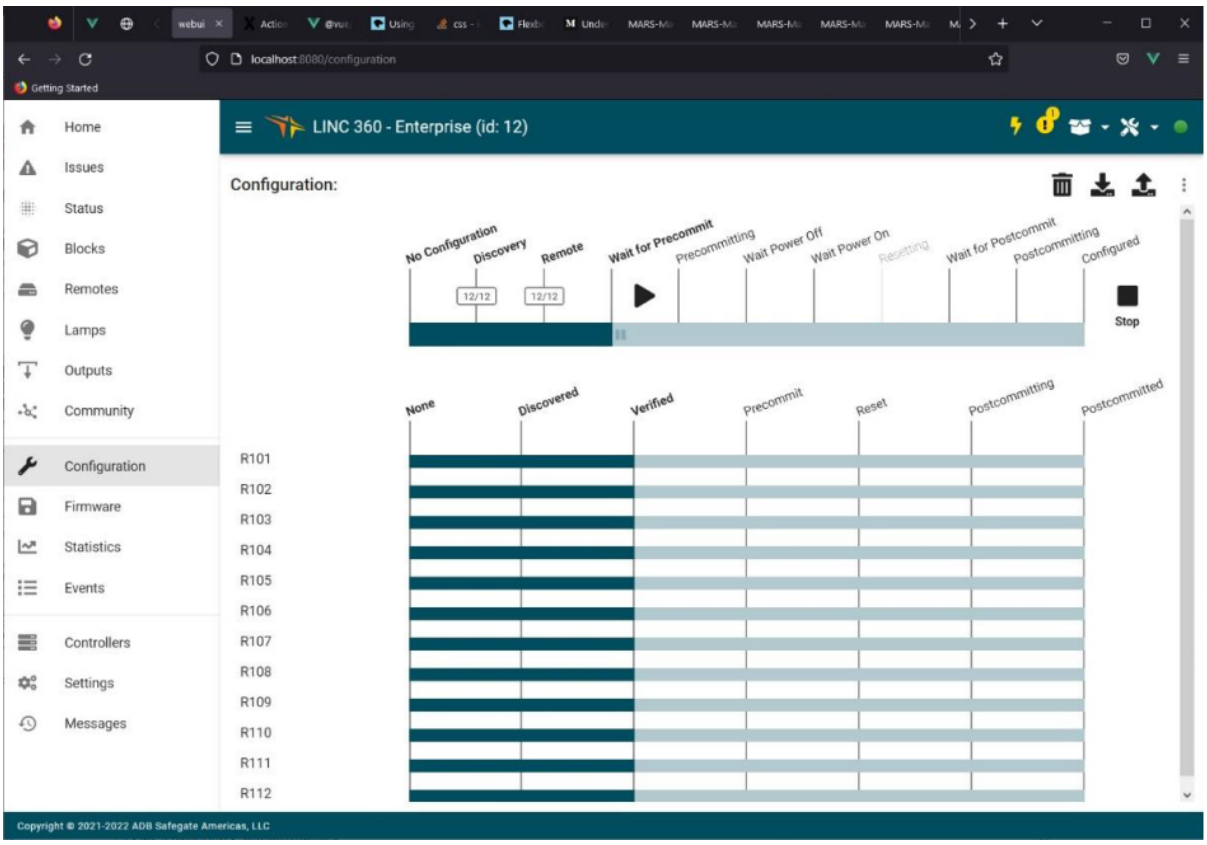
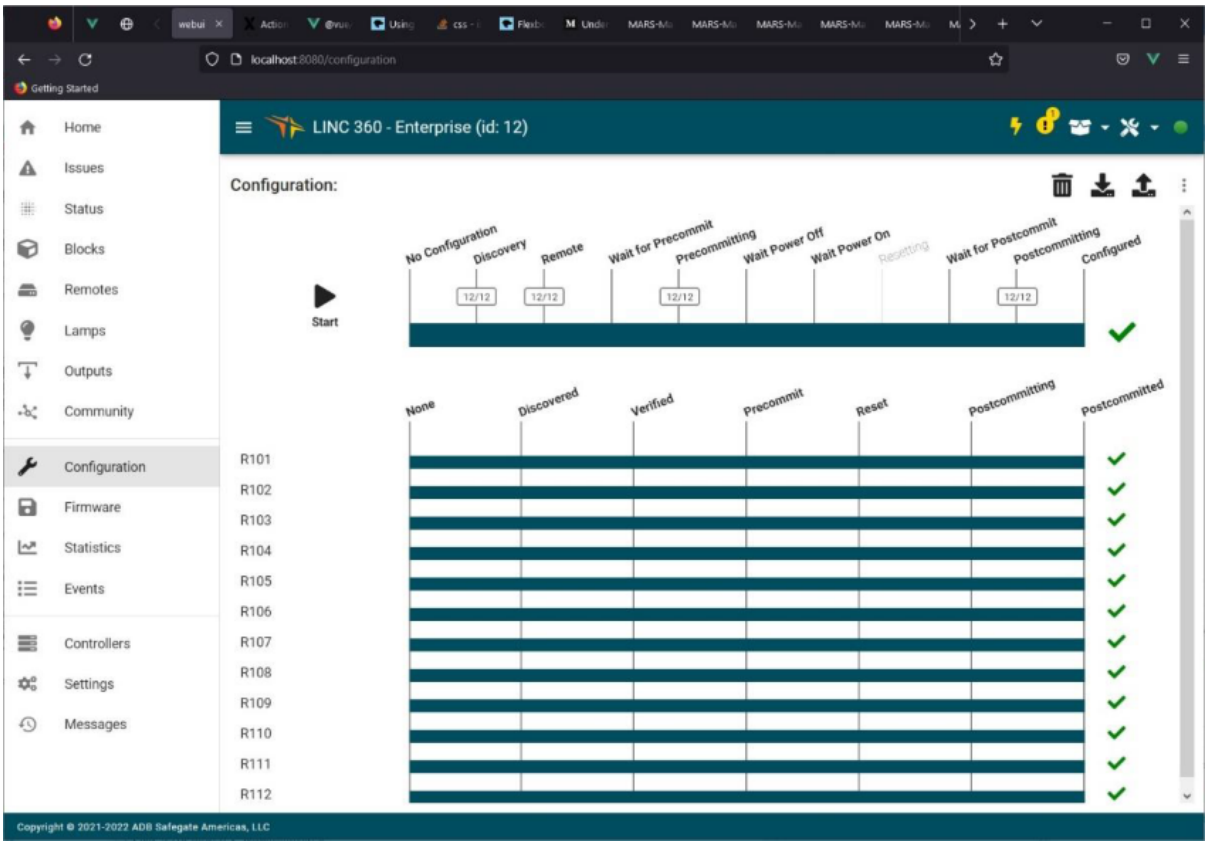


Figure 22: Configuration Waiting for User Input



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 23: Configuration Success

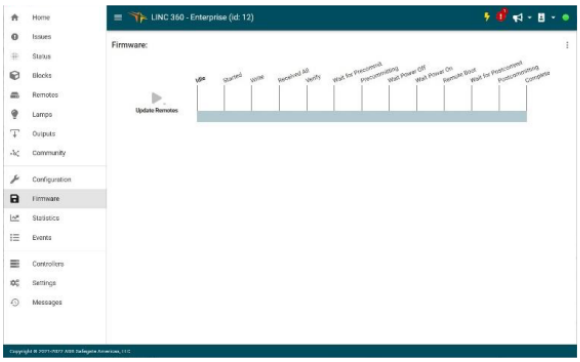


4.8 Firmware Page

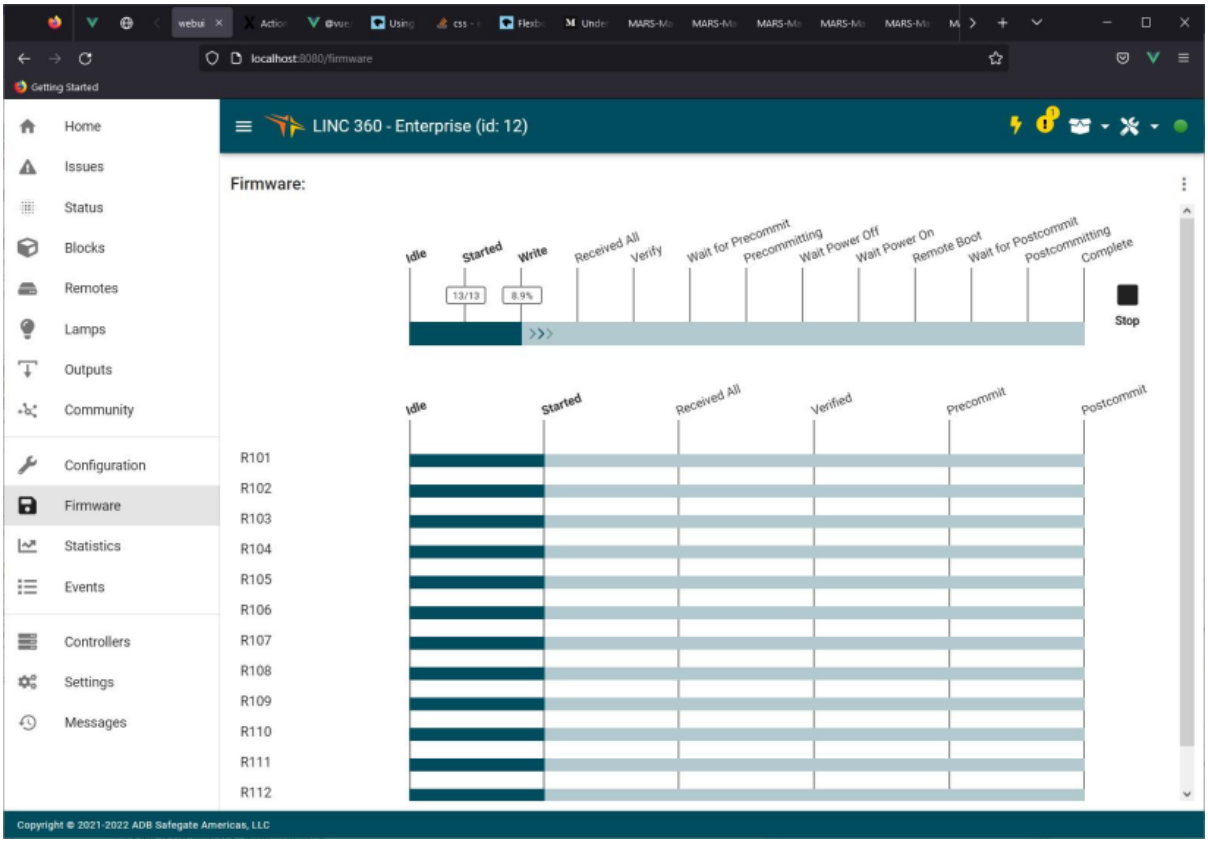
The **Firmware** page is used to upload firmware to remotes, peripherals such as AXON EQ and Utility Remotes, and the LINC 360 controller modem.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 24: Top left: Firmware Page - Top right: Firmware Target - Below: Firmware Progress







Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

4.9 Statistics Page

The **Statistics** page provides information for analyzing communication performance. It displays the performance and response rate of each remote, along with message counts and required repeater levels.

Figure 25: Statistics Performance

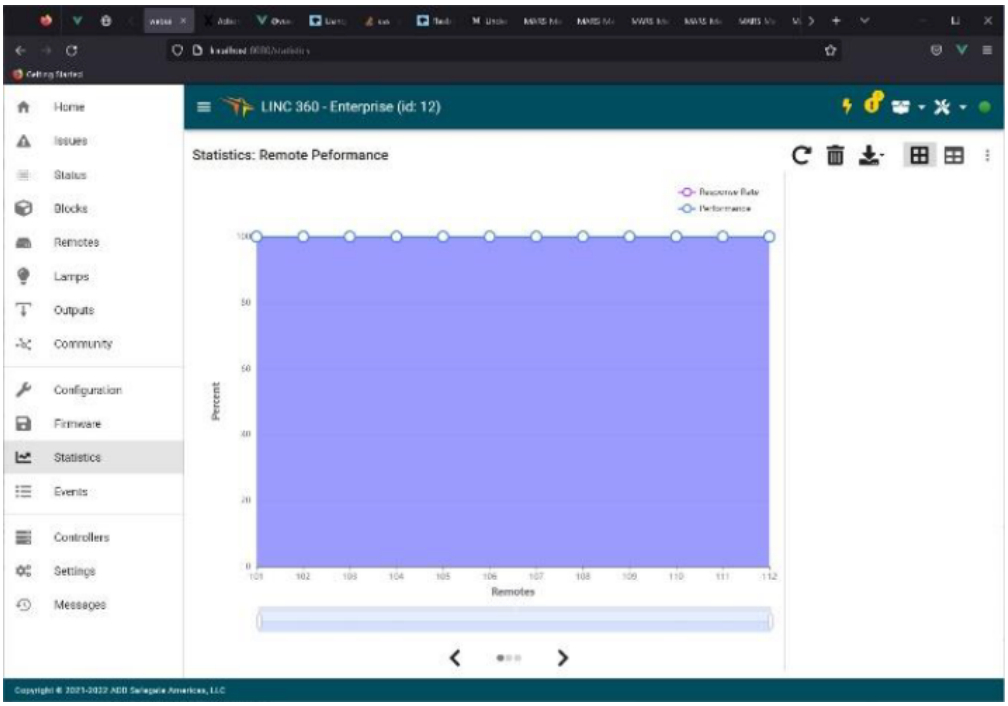
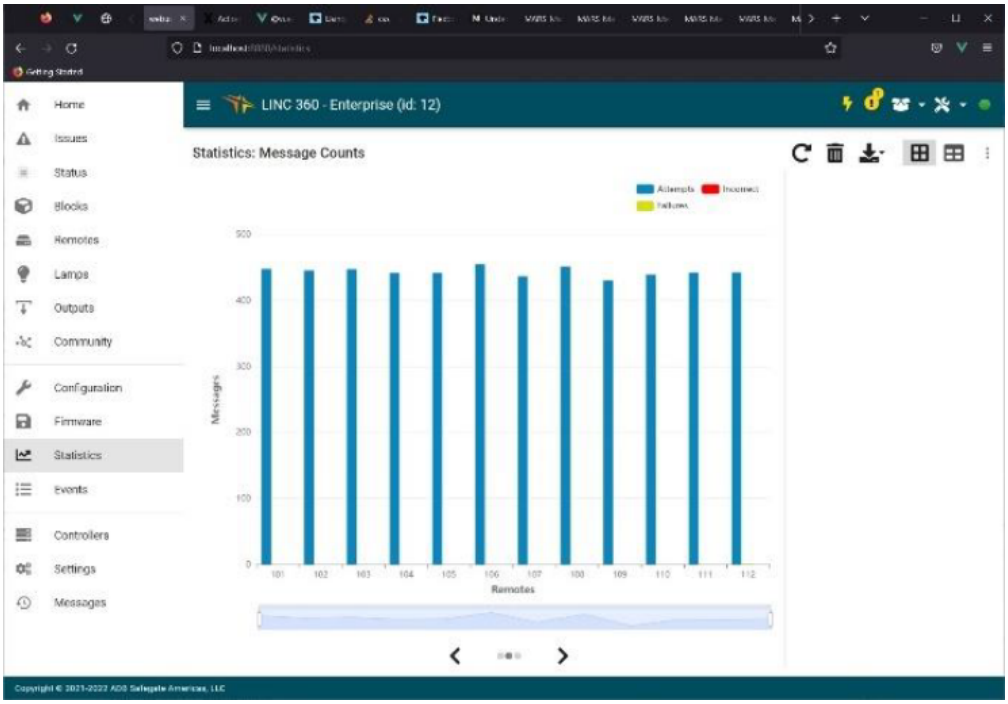
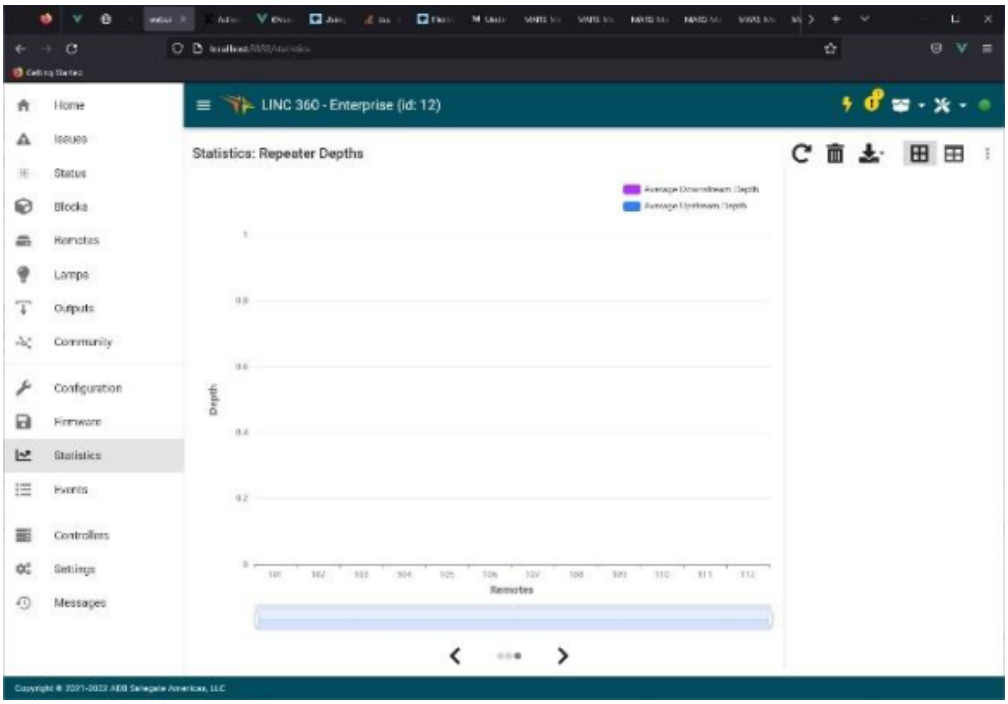


Figure 26: Statistics Message Count



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 27: Statistics Repeater Depth

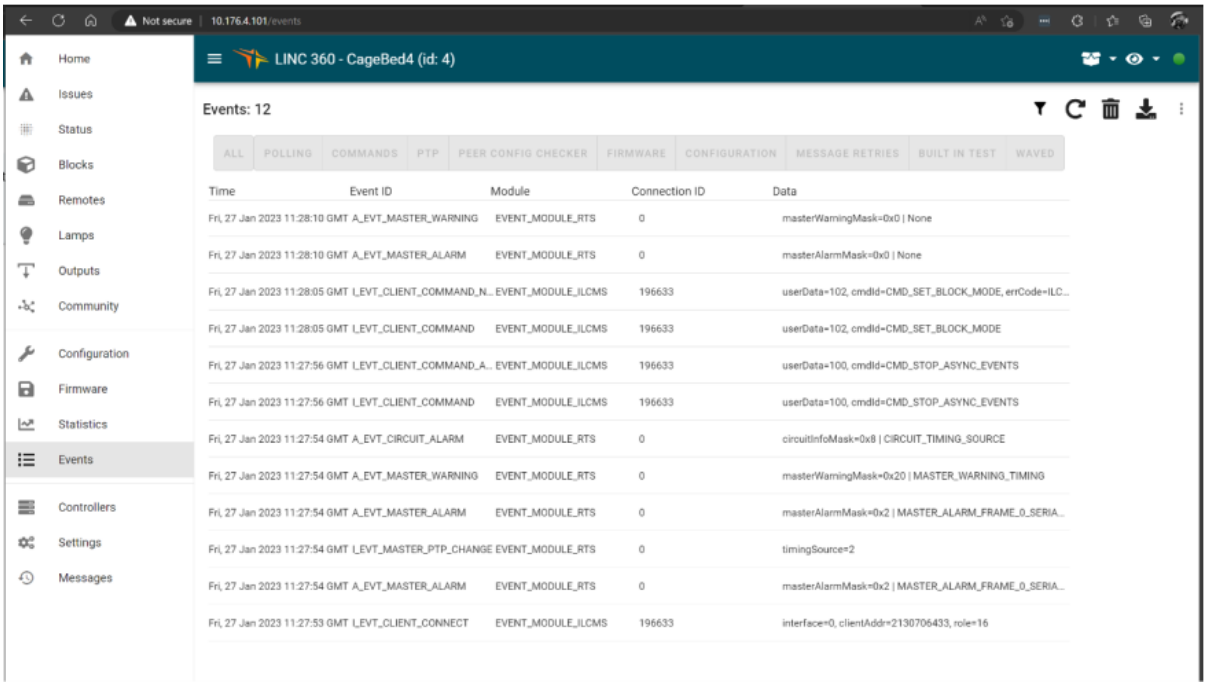


4.10 Events Page

The **Events** page displays events occurring on the controller and remote sides of the system. Events include:

- incoming commands from the system interface
- outgoing commands to remotes
- lamp failure reports from remotes.

Figure 28: Events Page



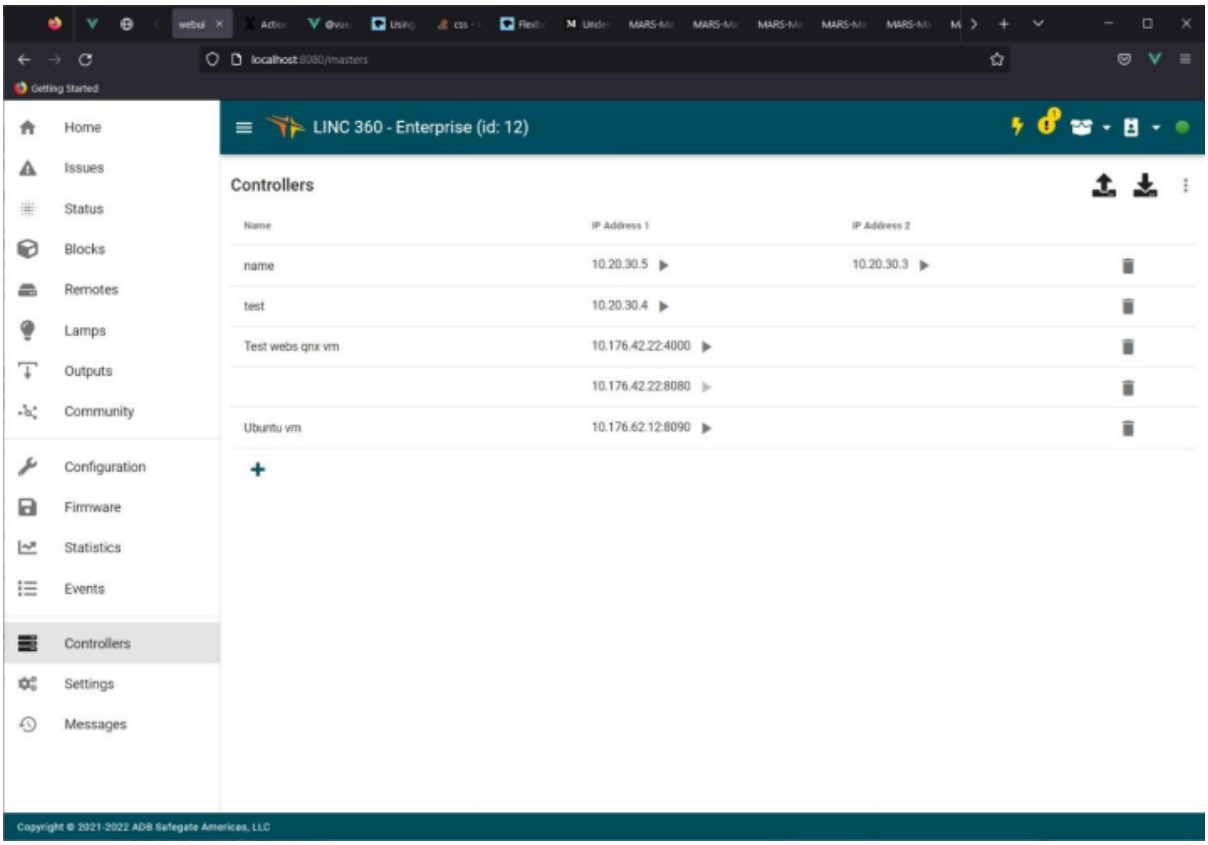
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

4.11 Controllers Page

The **Controllers** page enables quick switching between controllers without opening each controller in a separate browser tab. This is useful when commissioning multiple circuits or troubleshooting interleaved circuits.

To add a controller, select **+**.

Figure 29: Controllers Page



4.12 Settings Page

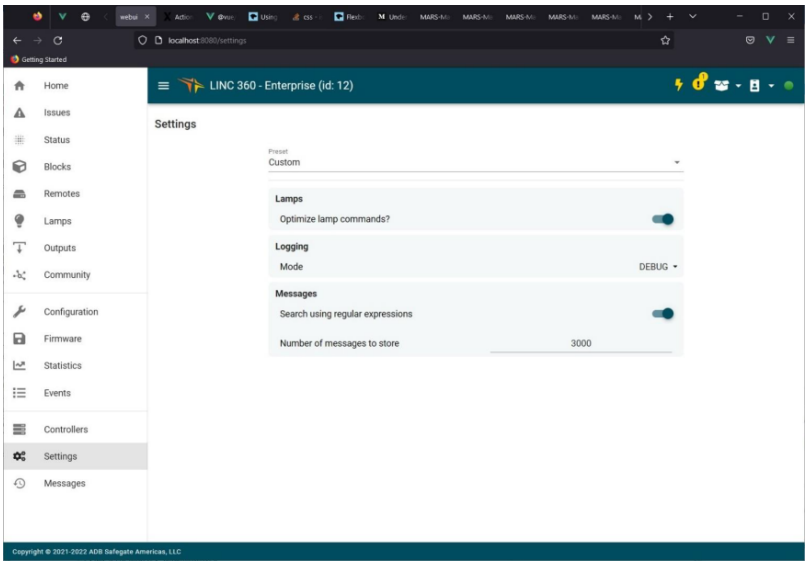
The **Settings** page provides access to controller settings, including:

- debugging mode
- number of messages to store
- lamp command optimization

The **Settings** page can also be used to modify the preset view

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

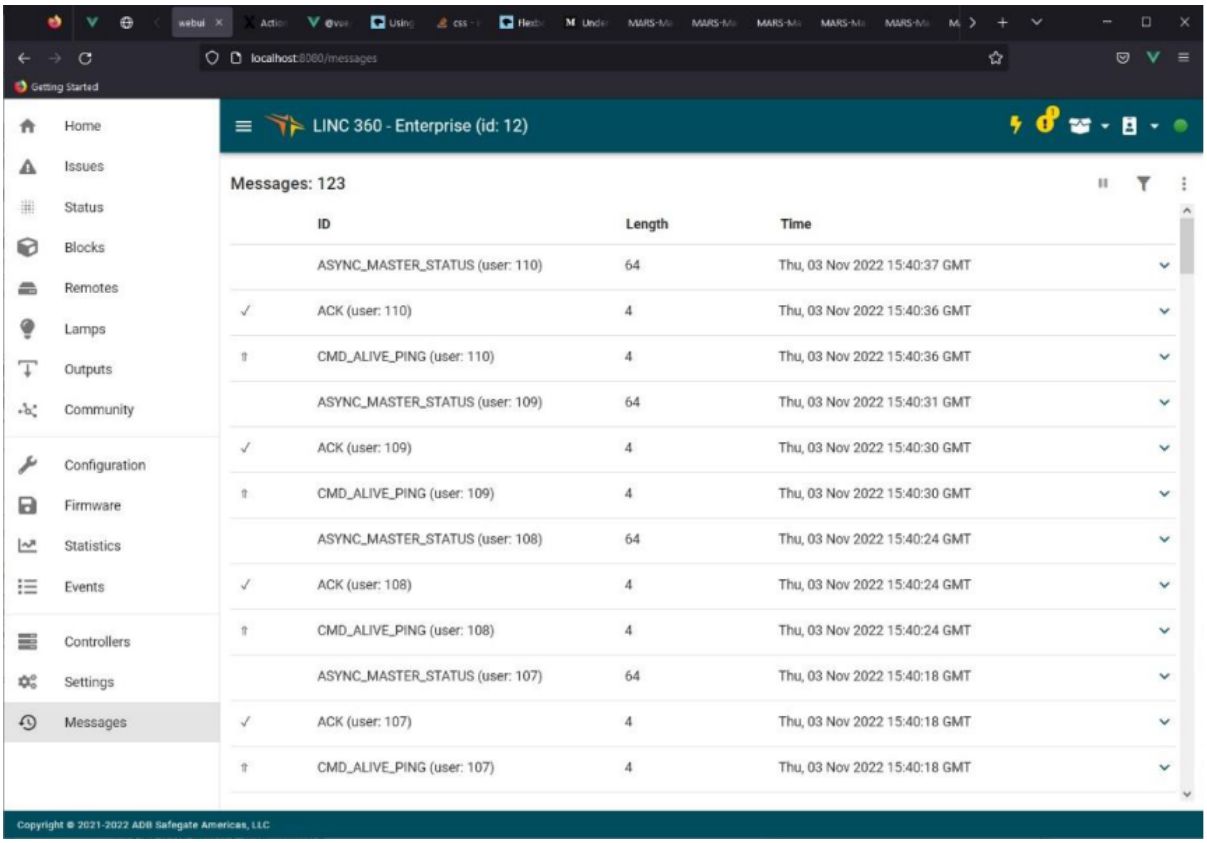
Figure 30: Settings Page



4.13 Messages Page

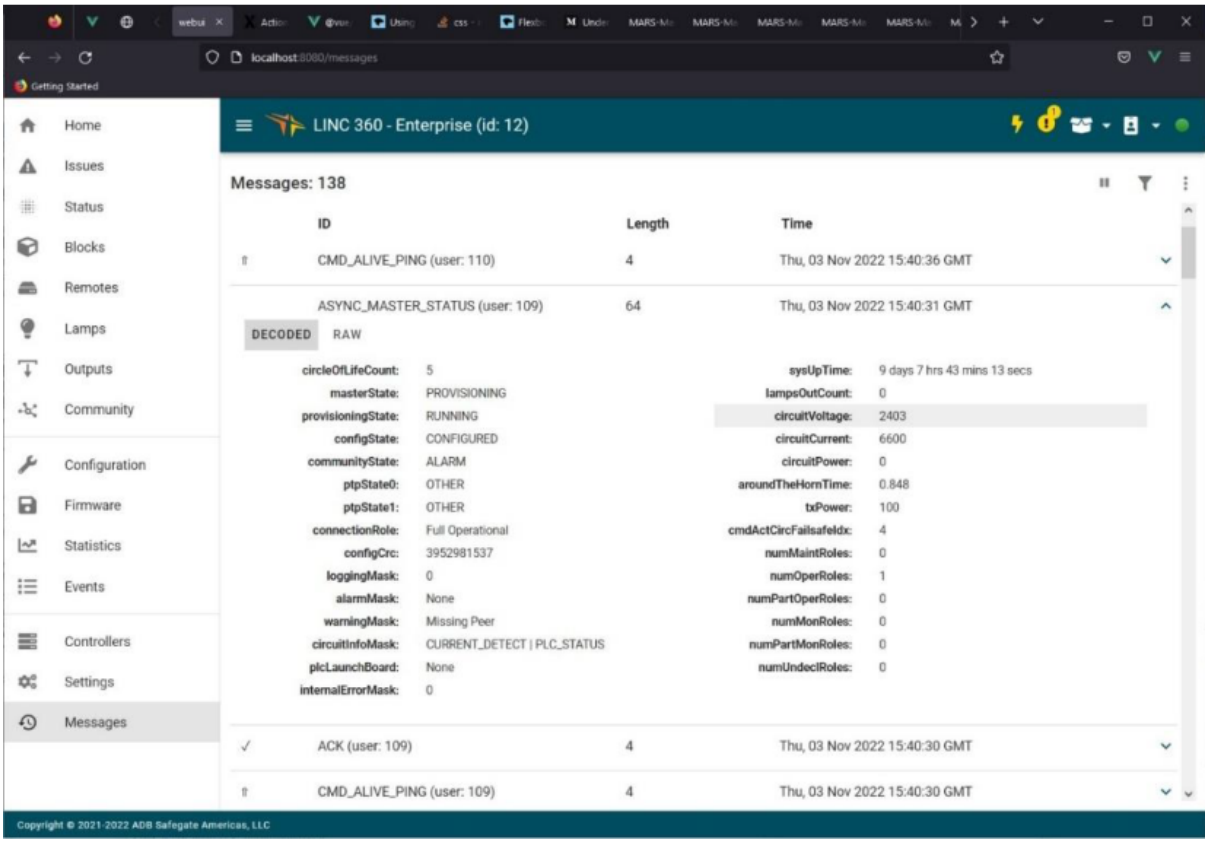
The **Messages** page displays communication traffic between the controller and the remotes. Expand a message to view additional information for debugging and troubleshooting.

Figure 31: Messages Page



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Figure 32: Message Page (expanded)



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

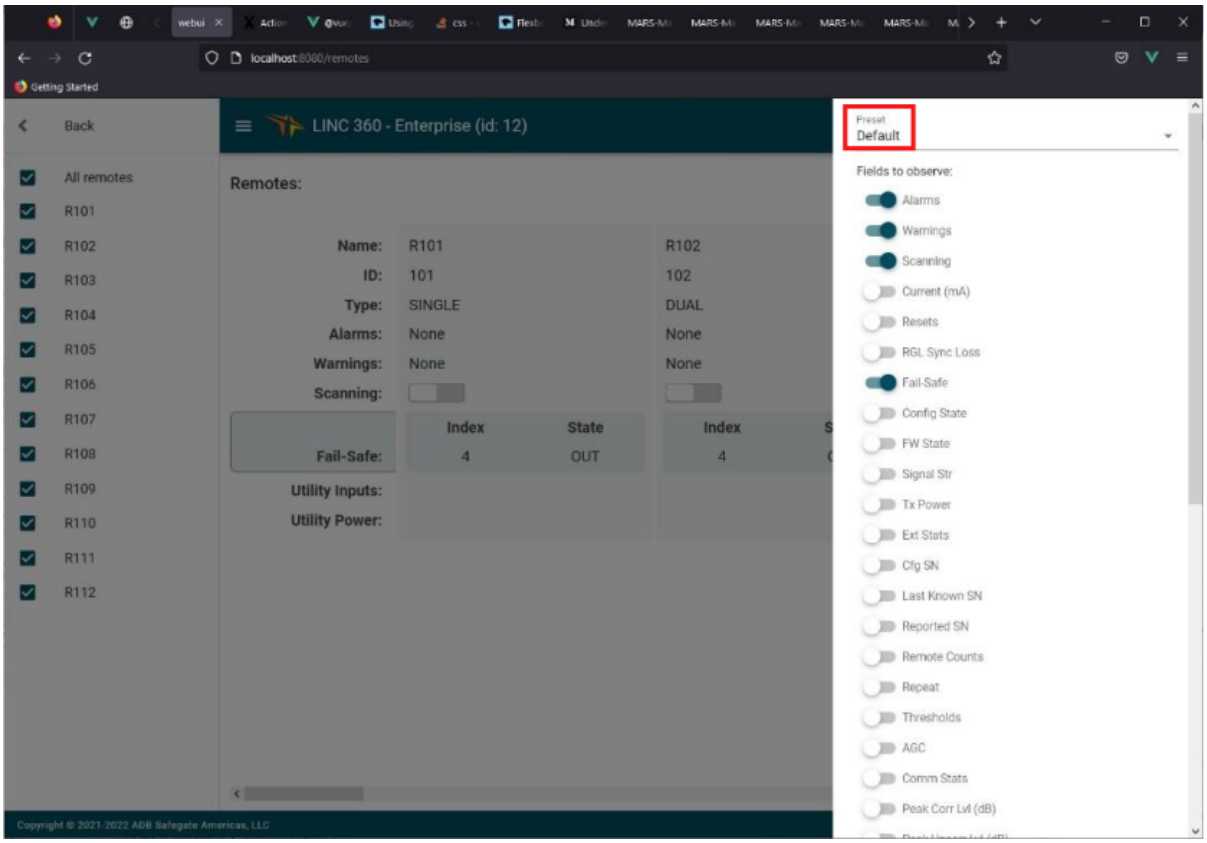
5.0 Maintenance and Service

5.1 Remote Maintenance

5.1.1 Replace a Remote

For remote replacement, use the **Configuration** preset in the **Table** view.

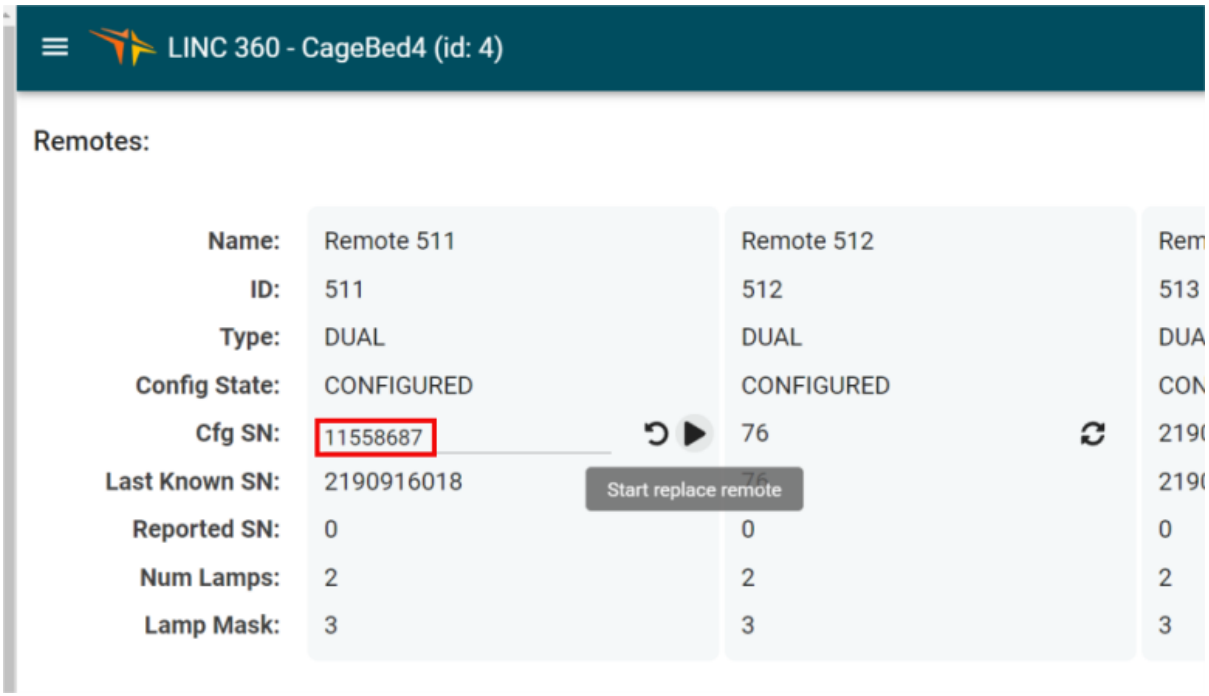
1. On the **Remotes** page, select the **Table** view, and then select **Settings** (⋮).
2. From **Preset**, select **Configuration**.
   Example:
   Figure 33: Select the Configuration Preset



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

3. In the **Cfg SN** field of the remote to replace, enter the serial number of the new remote.
   Example:

Figure 34: Enter the New Remote Serial Number



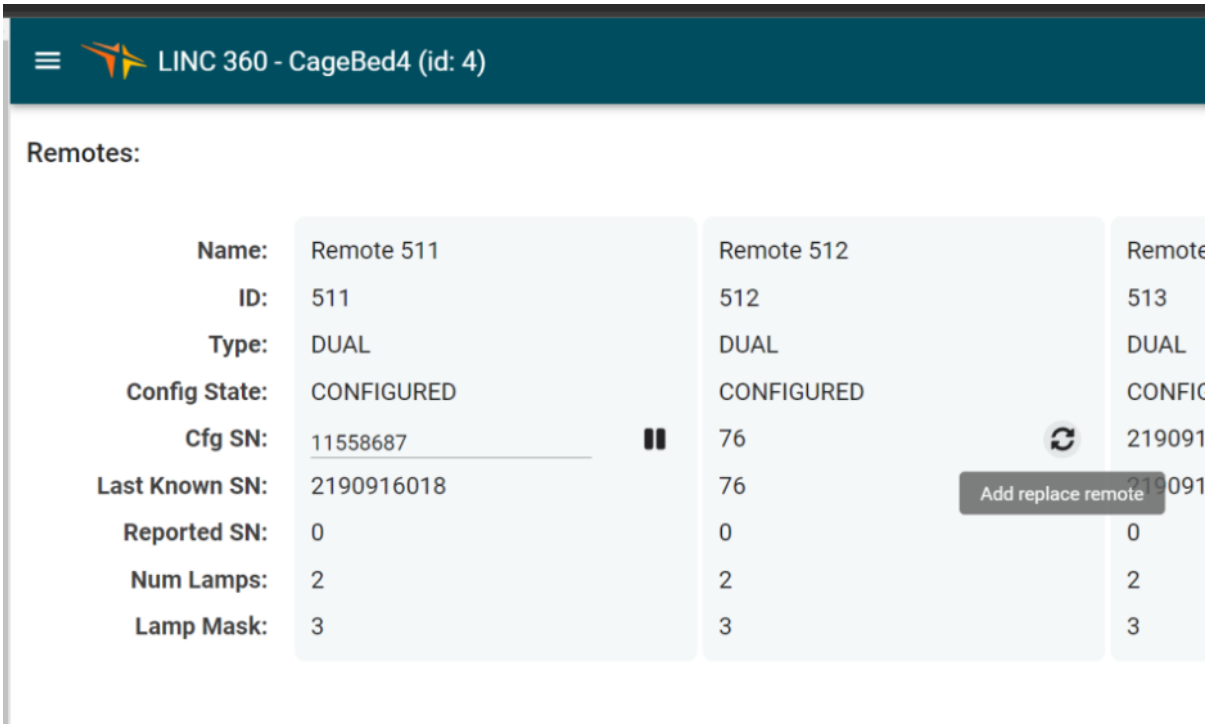
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

4. If you are replacing more than one remote, add the remaining remotes to the replacement operation. You can add up to 10 remotes in total. Do not select **Play** until all remotes have been added.

   a. Select **Add replace remote**.
   b. Select the next remote to replace.
   c. In the **Cfg SN** field, enter the serial number of the new remote.
   d. Repeat these steps for each additional remote.

Example:

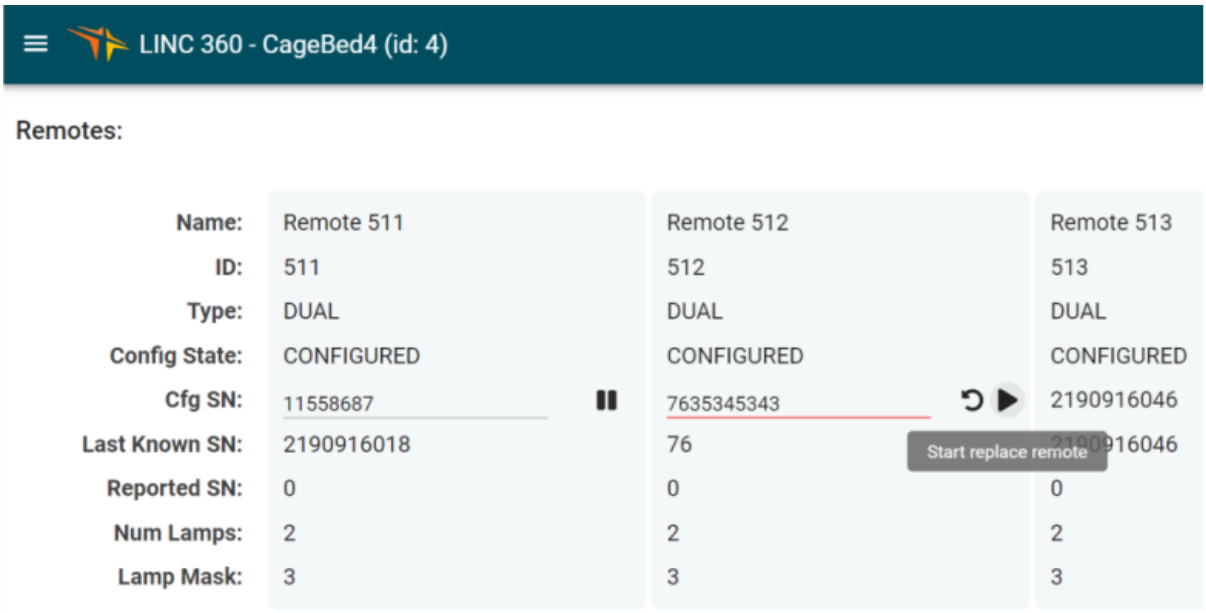
Figure 35: Add Remotes for Replacement



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

5. Select **Play** to start the remote replacement process.
   Example:

   Figure 36: Start the Remote Replacement Process



   Result: The controller configuration state changes from **Configured** to **Discovery** while the controller searches for the new remote or remotes, sends the configuration information, and resets the remotes.

   When the replacement process is complete, the controller configuration state returns to **Configured**.

> **Note**
> Discovery of a newly replaced remote may take several minutes.

5.1.2 Restore a Remote to Factory Settings (Log-off)

Log-off Settings

During the course of typical maintenance activities, it may be necessary to "log off" one or more remote units to restore them to a factory default setting. A remote unit at factory default scans all possible communication frequencies at power-up. This is different from a programmed unit that will only respond to its designated communication frequency. The user has the ability to command one or more remote units to log-off at the next power cycle from the GUI, however manual log-off is the preferred method. To perform this procedure, it is recommended to place the desired remote unit(s) with an isolation transformer on a temporary or spare circuit and use the following timing sequence for energizing and de-energizing the regulator:

1. Off for more than 8 seconds
2. On for 30 seconds (+- 5)
3. Off for 8 seconds (+- 5)
4. On for 120 seconds (+- 5)
5. Off for 8 seconds (+- 5)
6. On for 45 seconds (+- 5)
7. Off for more than 8 seconds

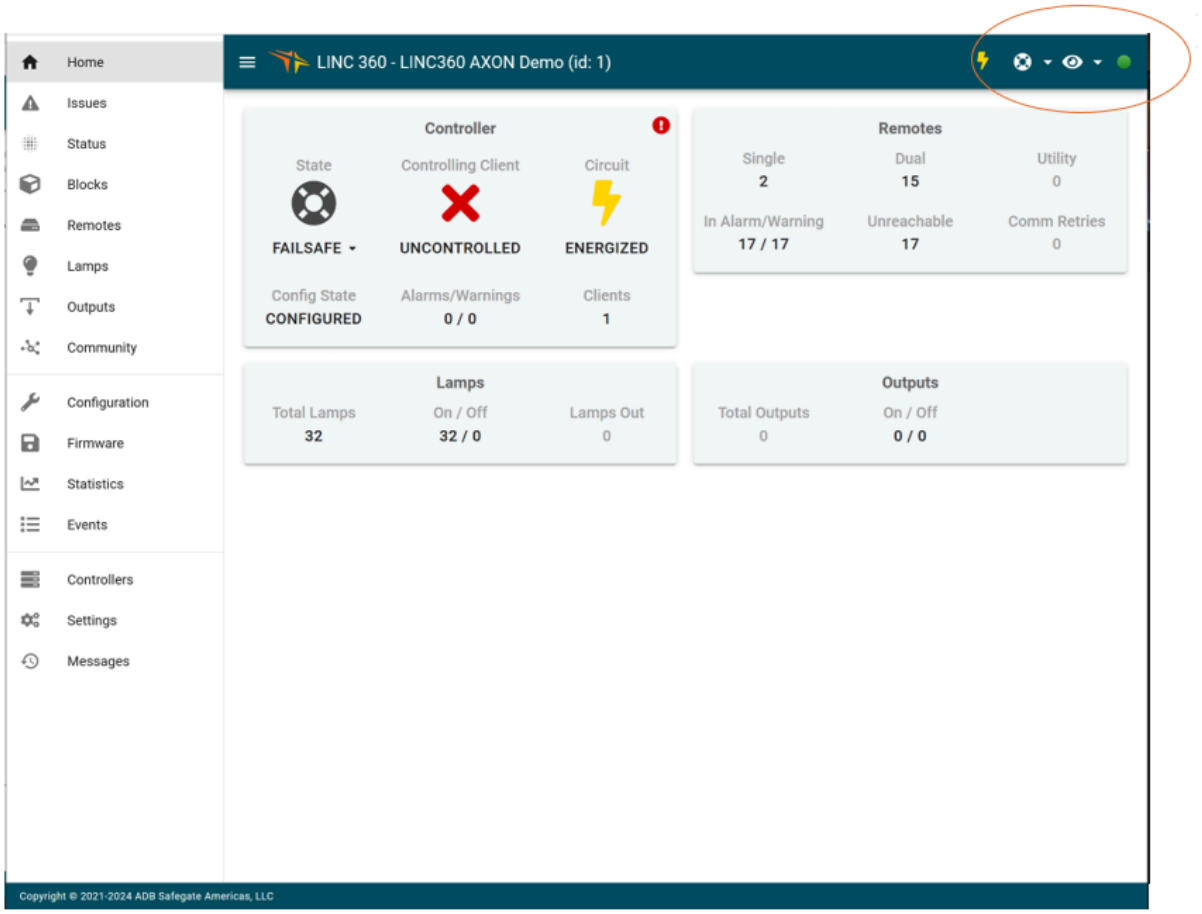
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

After completing this timing sequence, any remote connected is restored to a factory default setting, known as "logged-off."

Note
Newly manufactured ADB SAFEGATE ACE 3 regulators have this timing sequence available as an automated option that can be selected from the front touchscreen display menu.

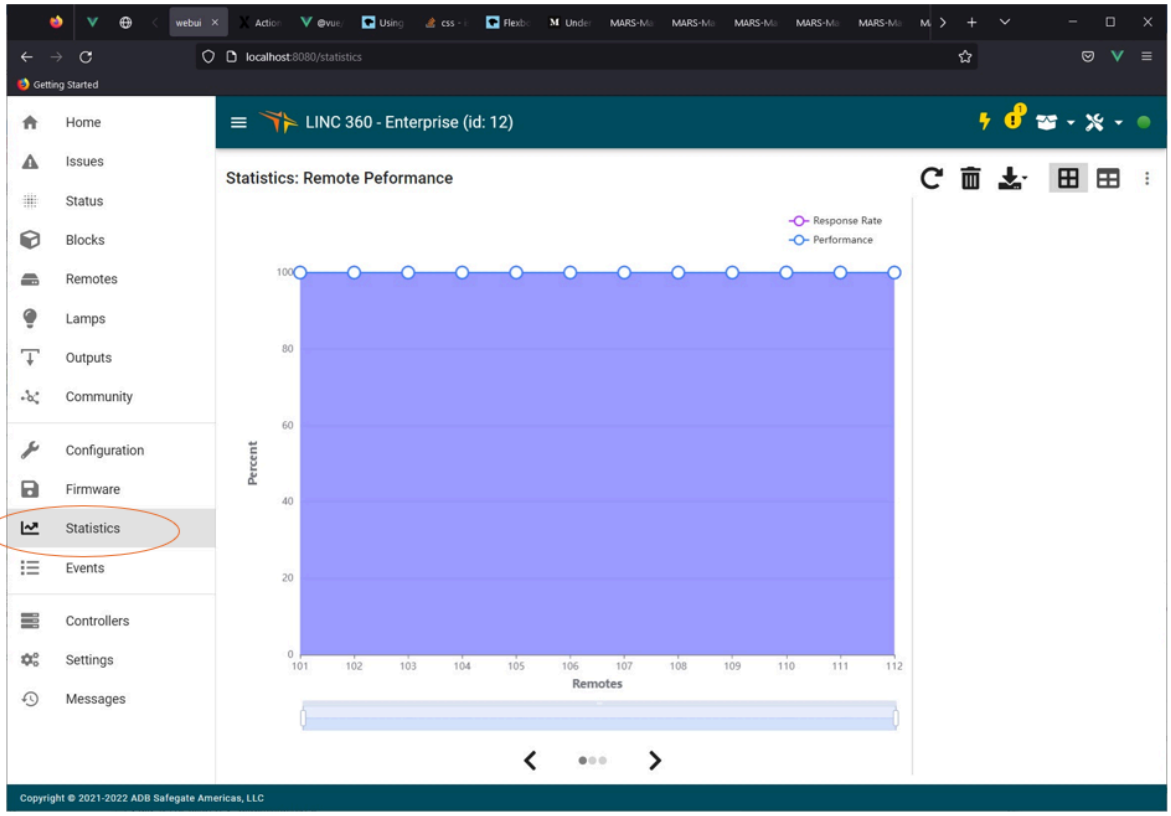
5.1.3 Remote Firmware Check

1. Connect to the controller. The eye icon (upper-right corner) indicates that the controller is in **Full Monitor**, which is the default state. The green dot next to it indicates an active connection.
   Example:



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

2. Make sure that all remotes on the controller are online and communicating. This can be checked in the **Statistics** Page. Remotes that are not communicating will not be able to report their firmware version.
   Example:

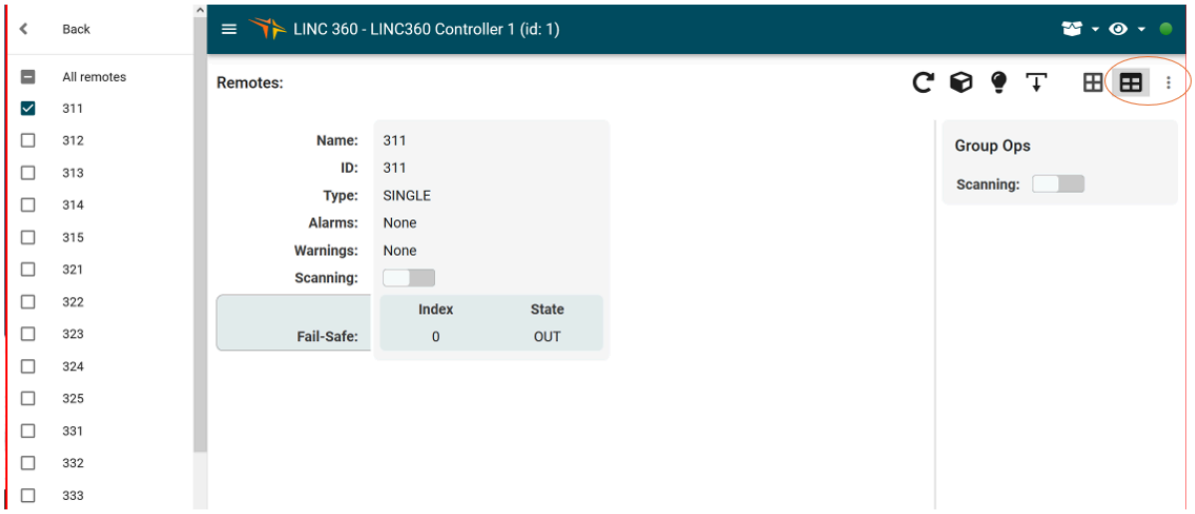


3. Switch to the **Remotes** page and select all remotes or the remotes you would like to check.
   Example:

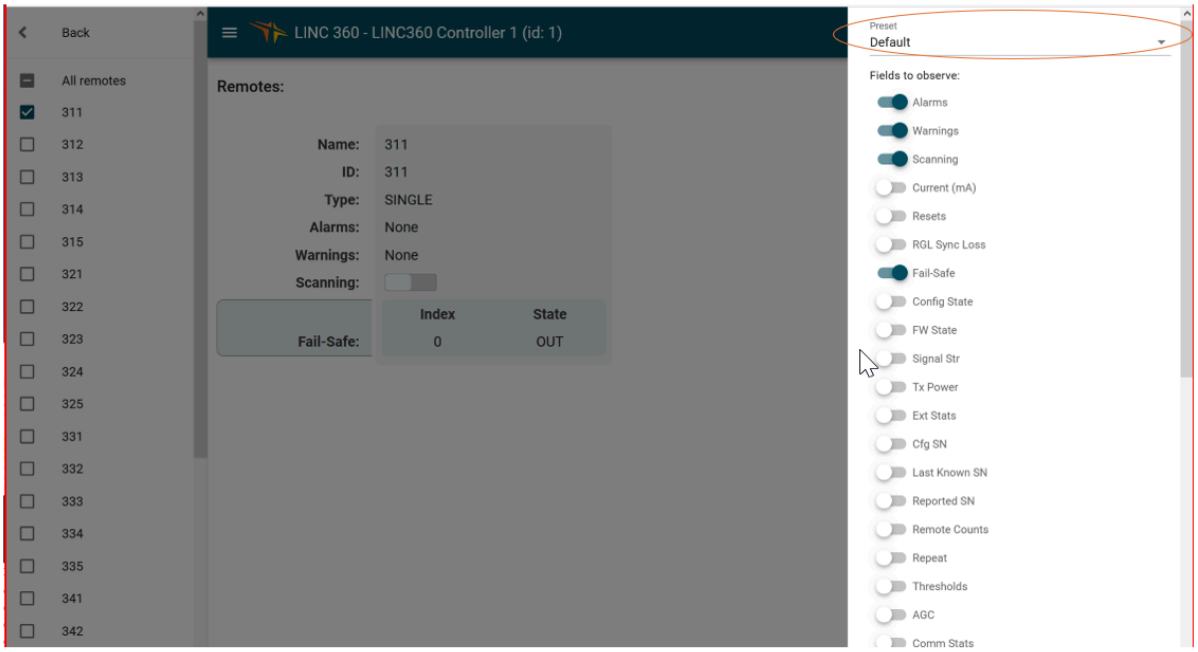


Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

4. Switch to the detailed view from the header and click on the three dots on its right, to open the **Settings** panel.
   Example:

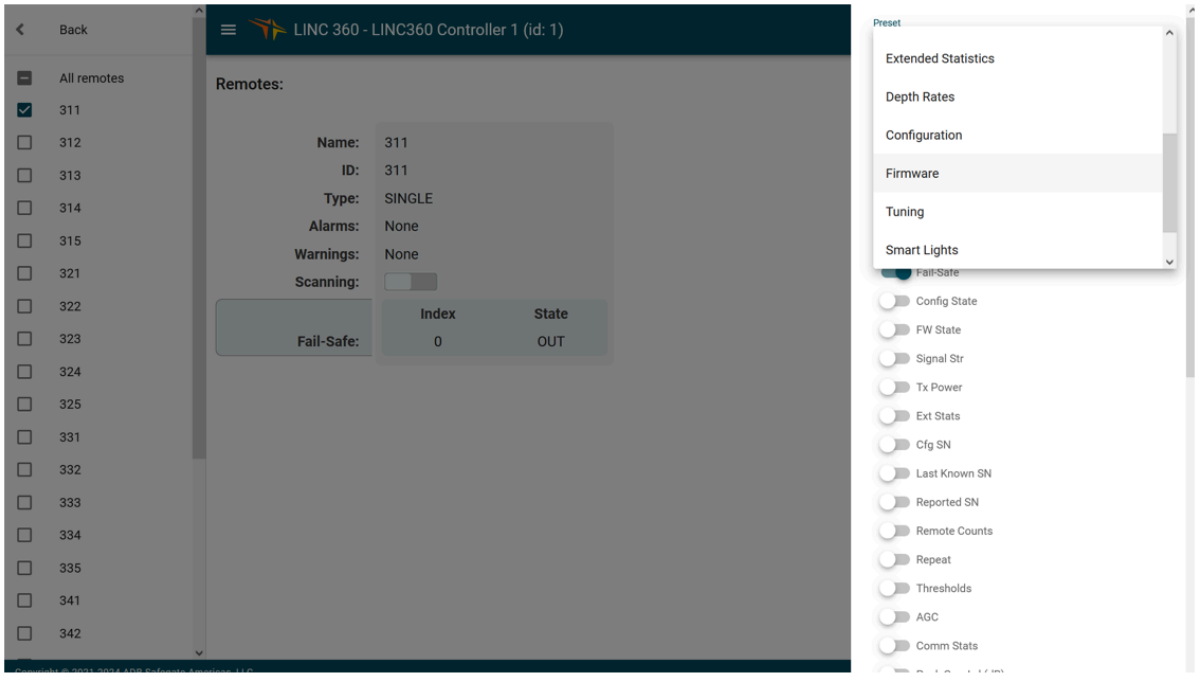


5. This will open the different fields that can be displayed. Click on **Preset** at the top.
   Example:

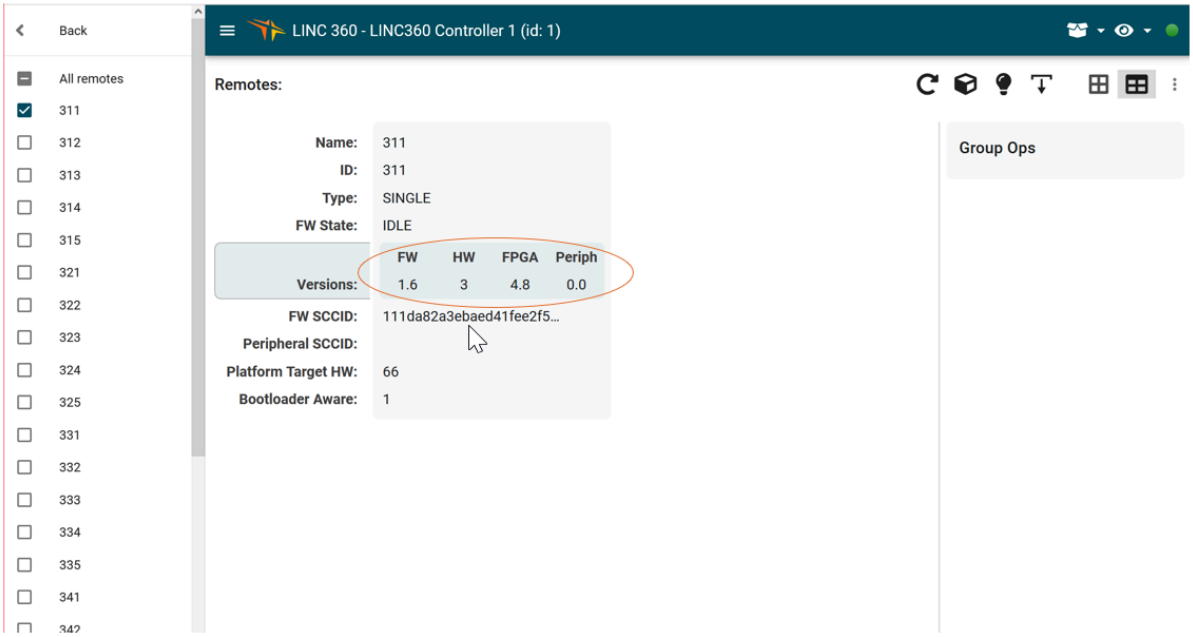


Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

6. Select **Firmware**.
   Example:



7. The Remote or EQ firmware versions will now be displayed.
   Example:

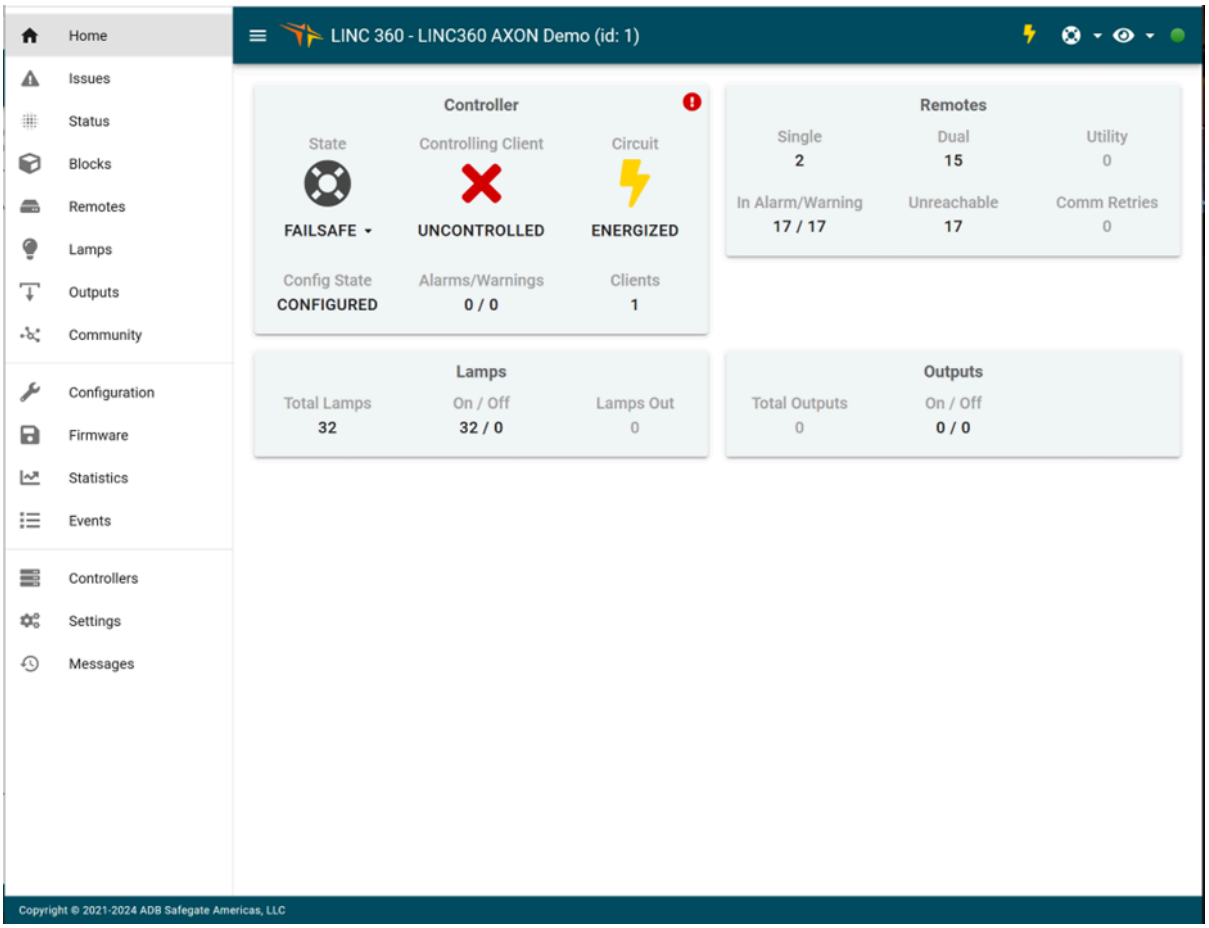


Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

5.1.4 Remote Firmware Update

1. Connect to the controller. The eye icon (upper-right corner) indicates that the controller is in **Full Monitor**, which is the default state. The green dot next to it indicates an active connection.

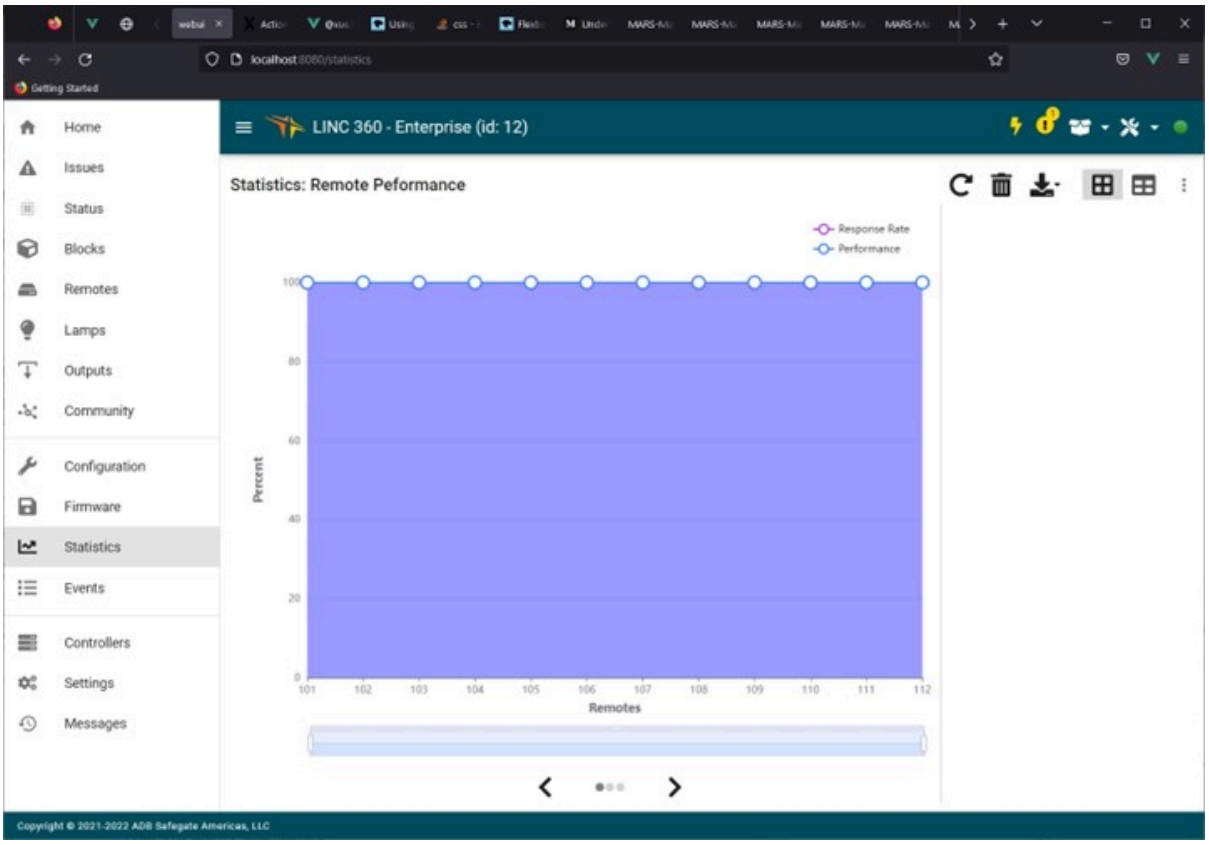
   Example:



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

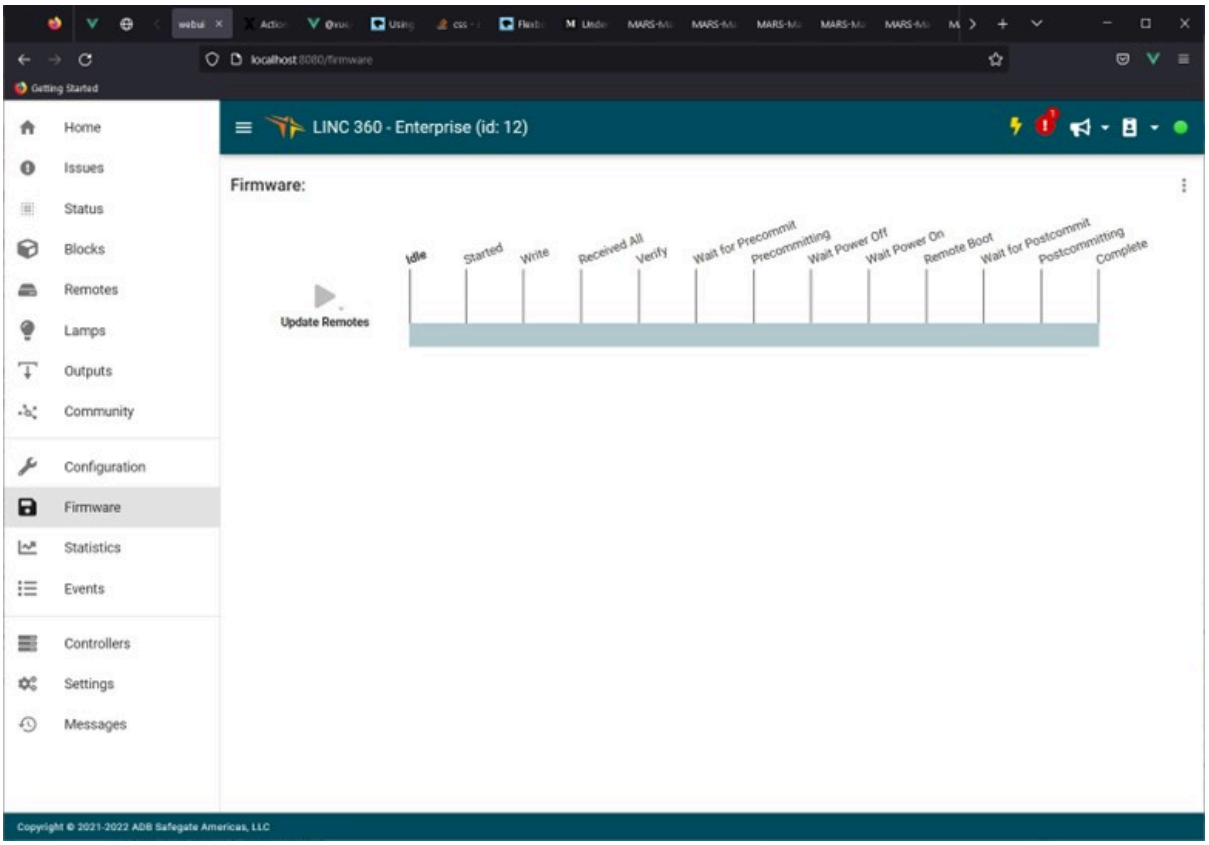
2. Make sure that all remotes on the controller are online and communicating. This can be checked in the **Statistics** page, where individual communication performance can be verified. Communication performance should be above 50% for each remote to make sure that the firmware update is successful.

   Example:



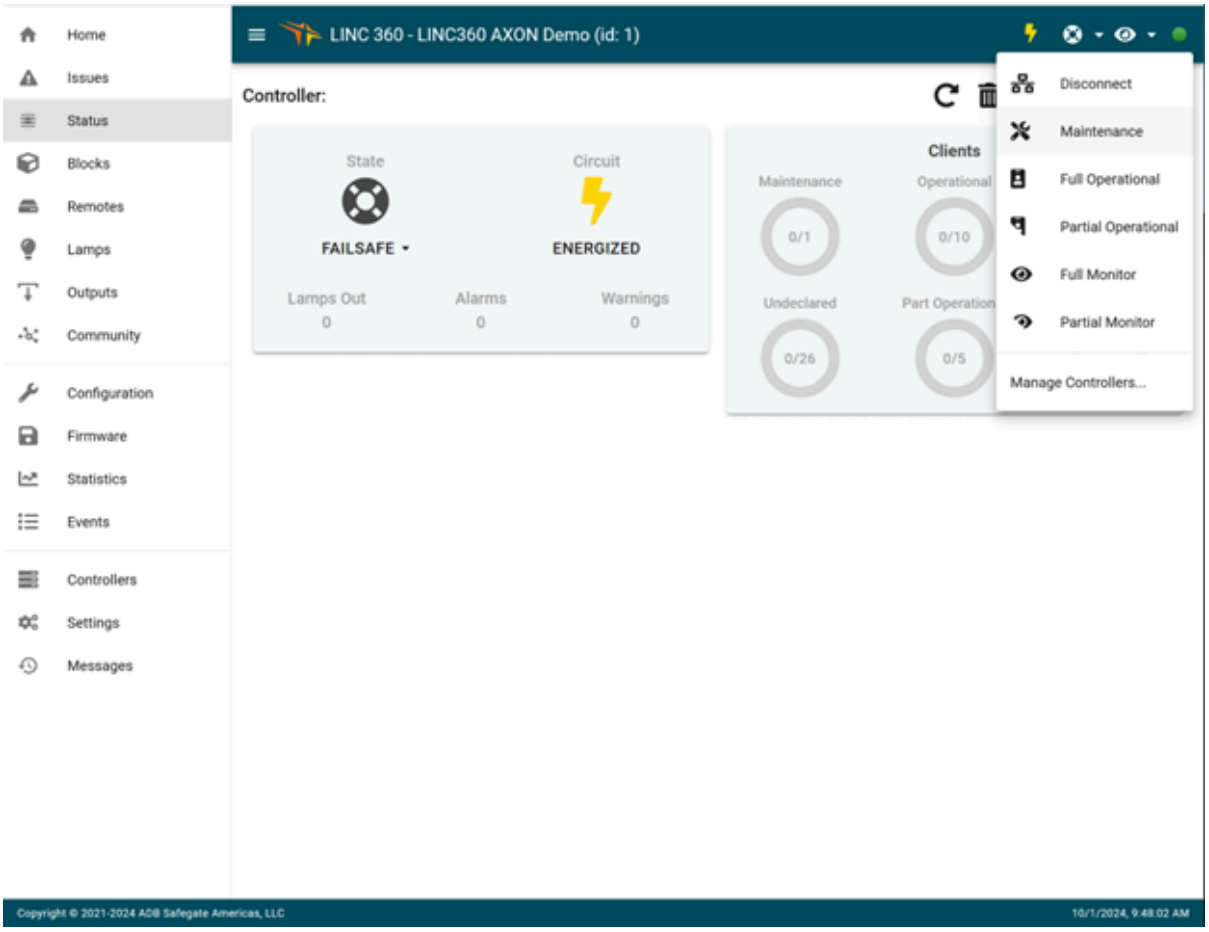
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

3. Switch to the **Firmware** page by selecting it on the navigation pane.
   Example:



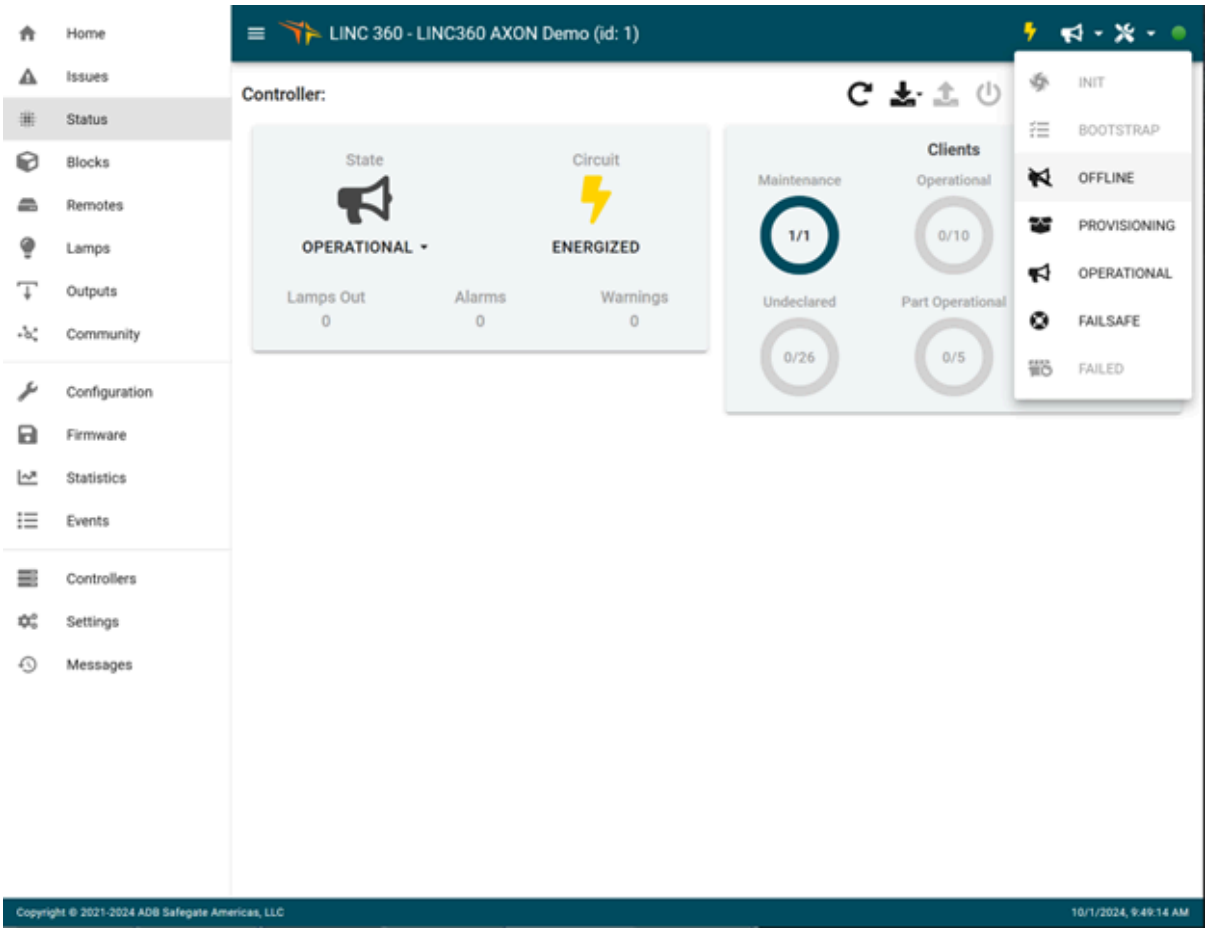
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

4. Change user role to **Maintenance** by clicking on the eye icon in the upper-right corner.
   Example:



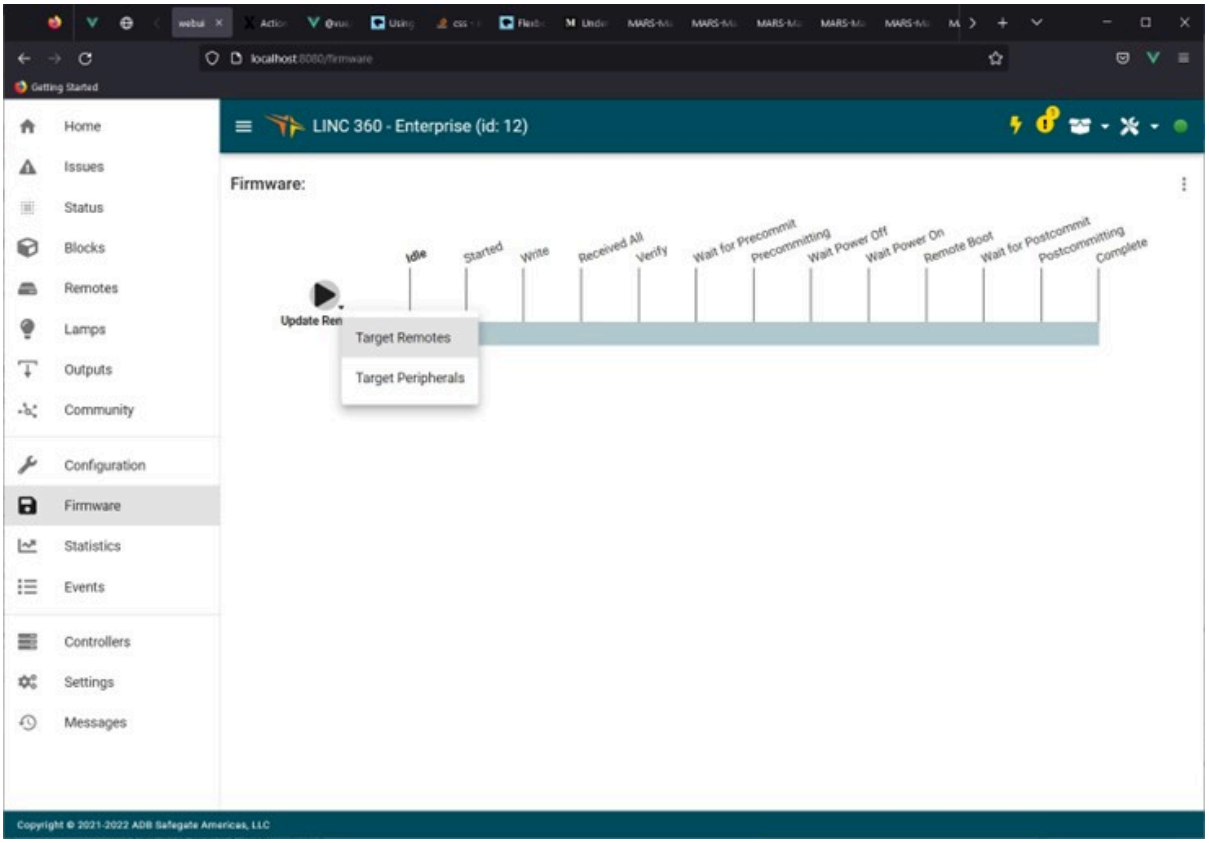
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

5. Change the controller to the **Provisioning** state by clicking on the icon to the left of the maintenance role
Example:

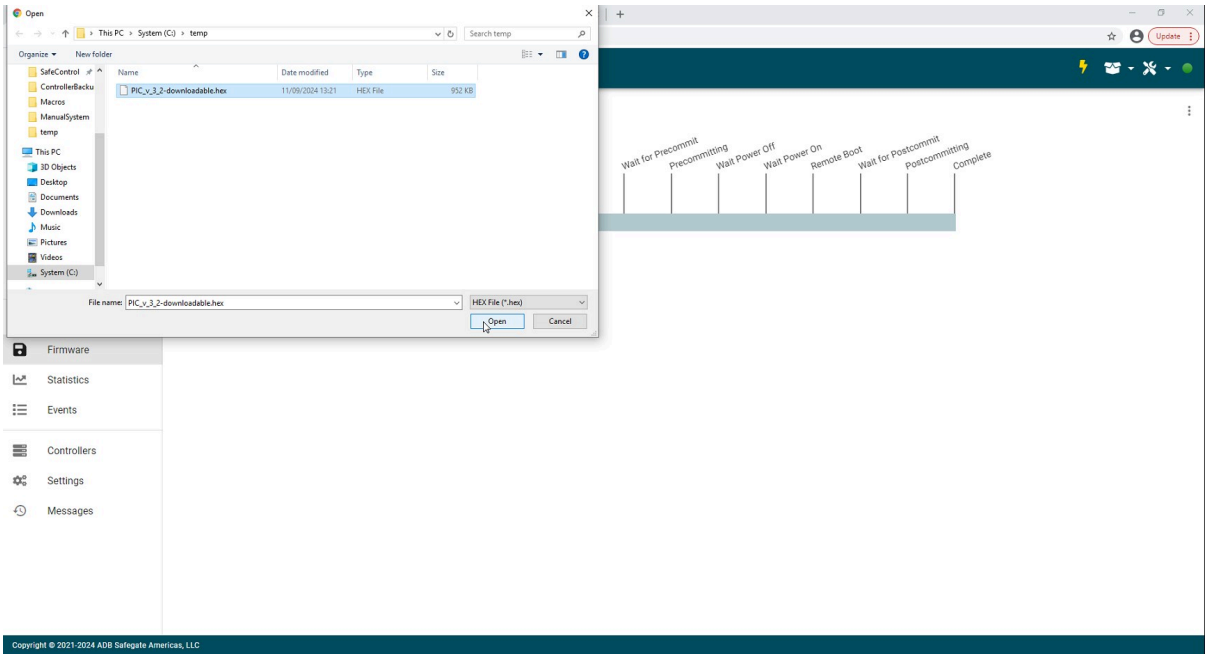


Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

6. Click the **Update Remote** button and choose Target. Remotes will upgrade the PIC firmware version on the communication module. Peripherals will update the ST firmware version on the EQ Sensor board.
   Example:



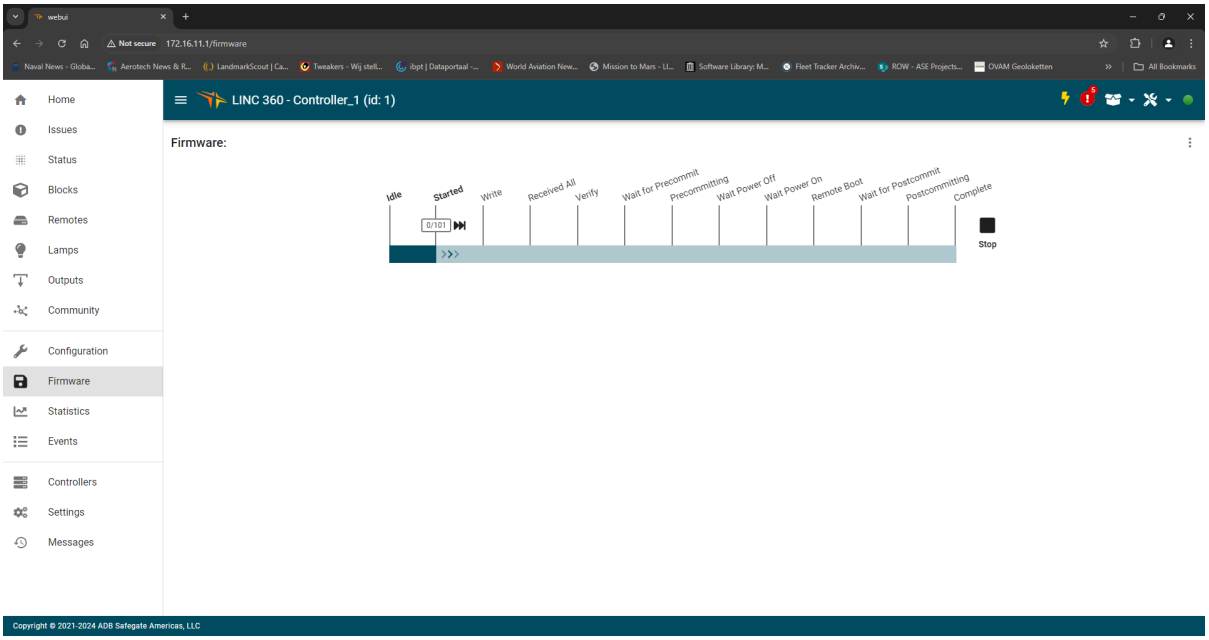
7. In the file selection menu, choose the .hex or .bin file of the firmware update you would like to install.
   Example:



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

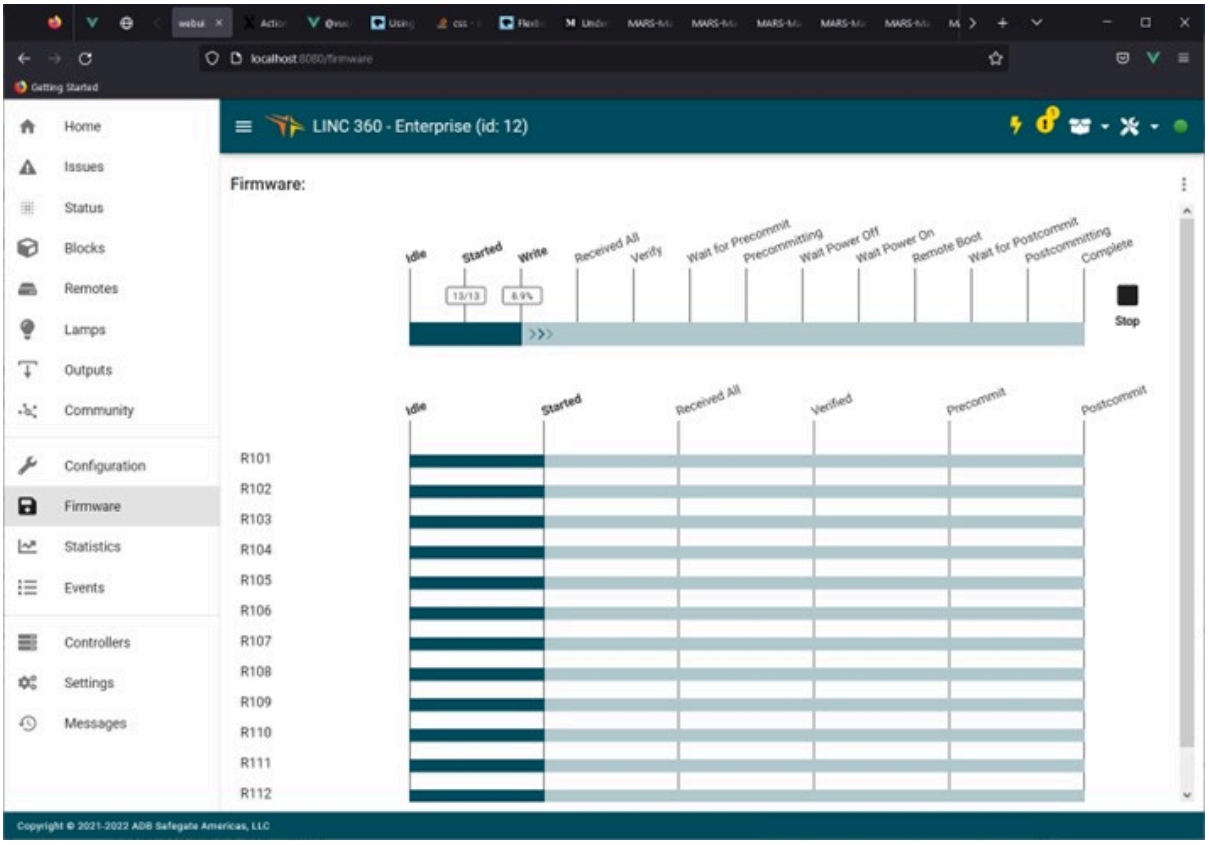
8. When the firmware installation starts, it can take up to 4 minutes for the controller to prepare the files before it shows the target remotes under the progress bar.

   Example:



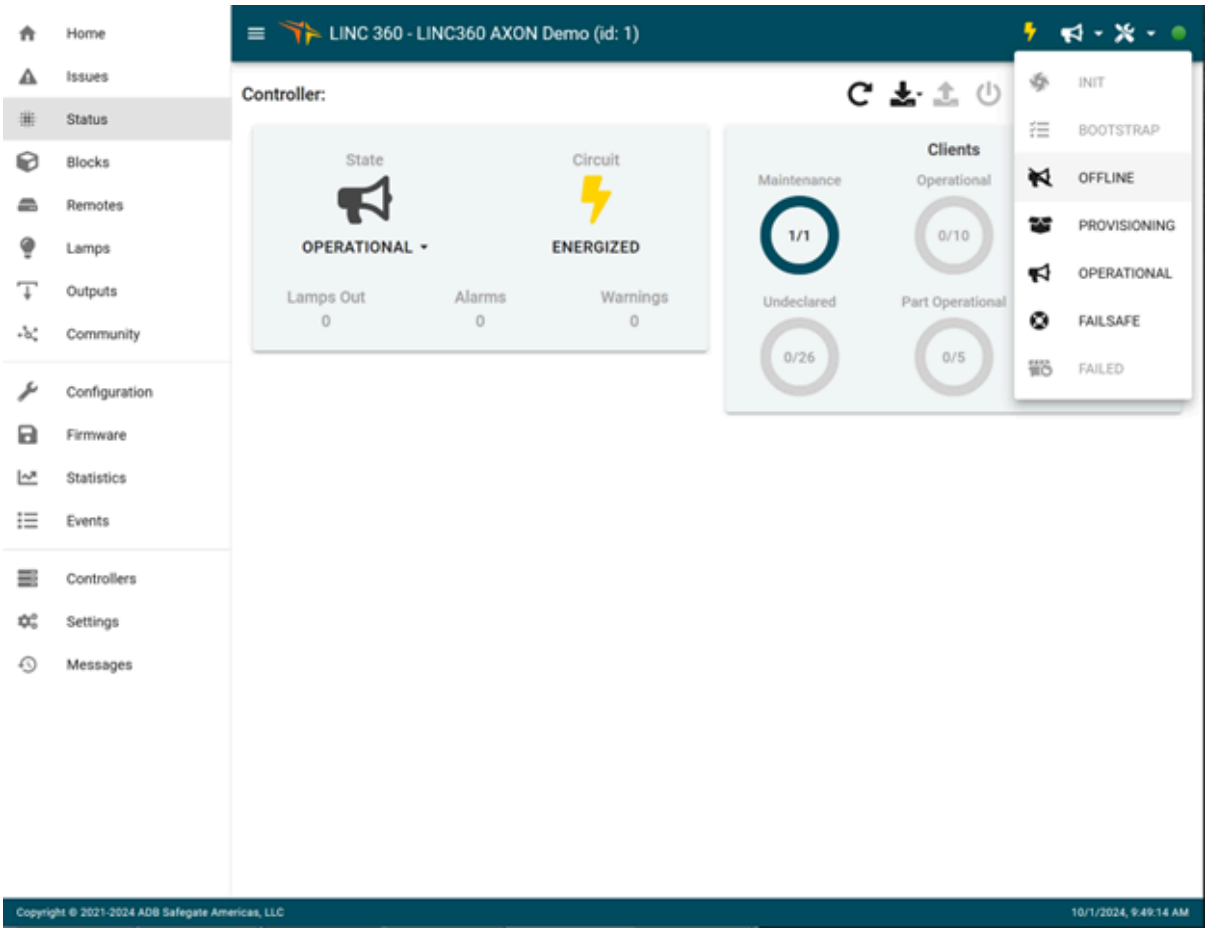
9. Follow the instructions on screen. The firmware installation will start and its progress is indicated by the progress bar for each remote.

   Example:



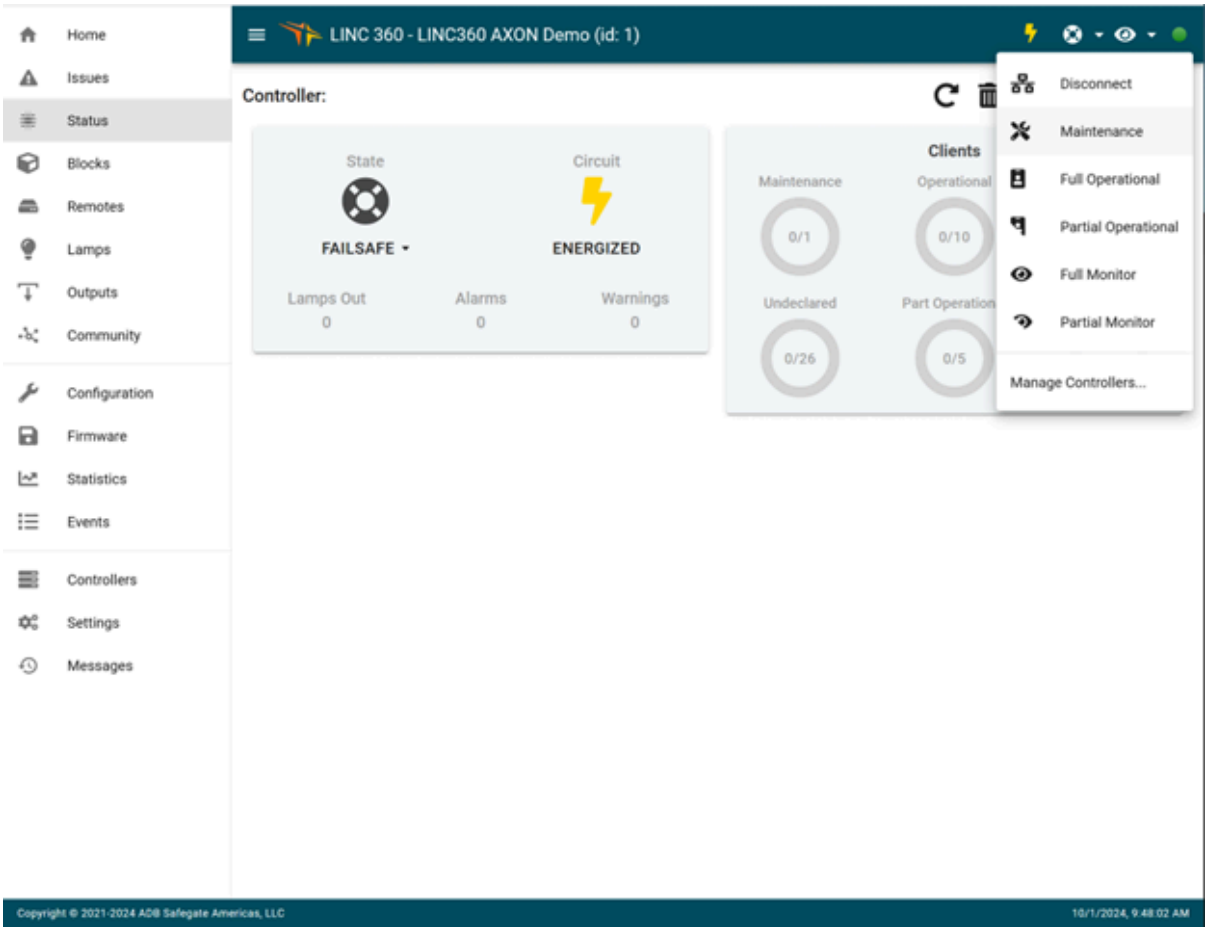
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

10. Put the controller back in **Operational** state.
Example:



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

11. Put the user role back to **Full Monitor**.
Example:



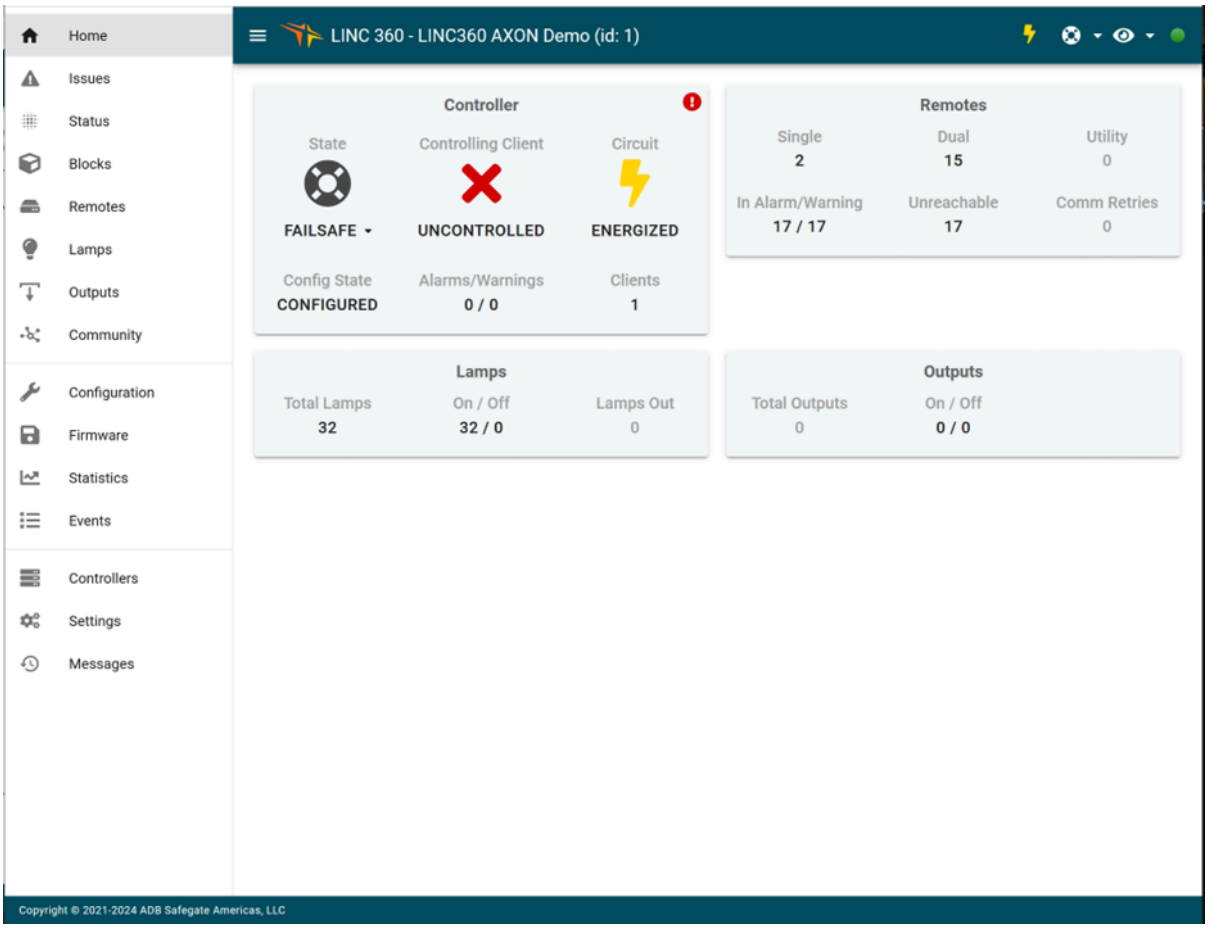
5.2 Controller Maintenance

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

5.2.1 Controller Firmware Update

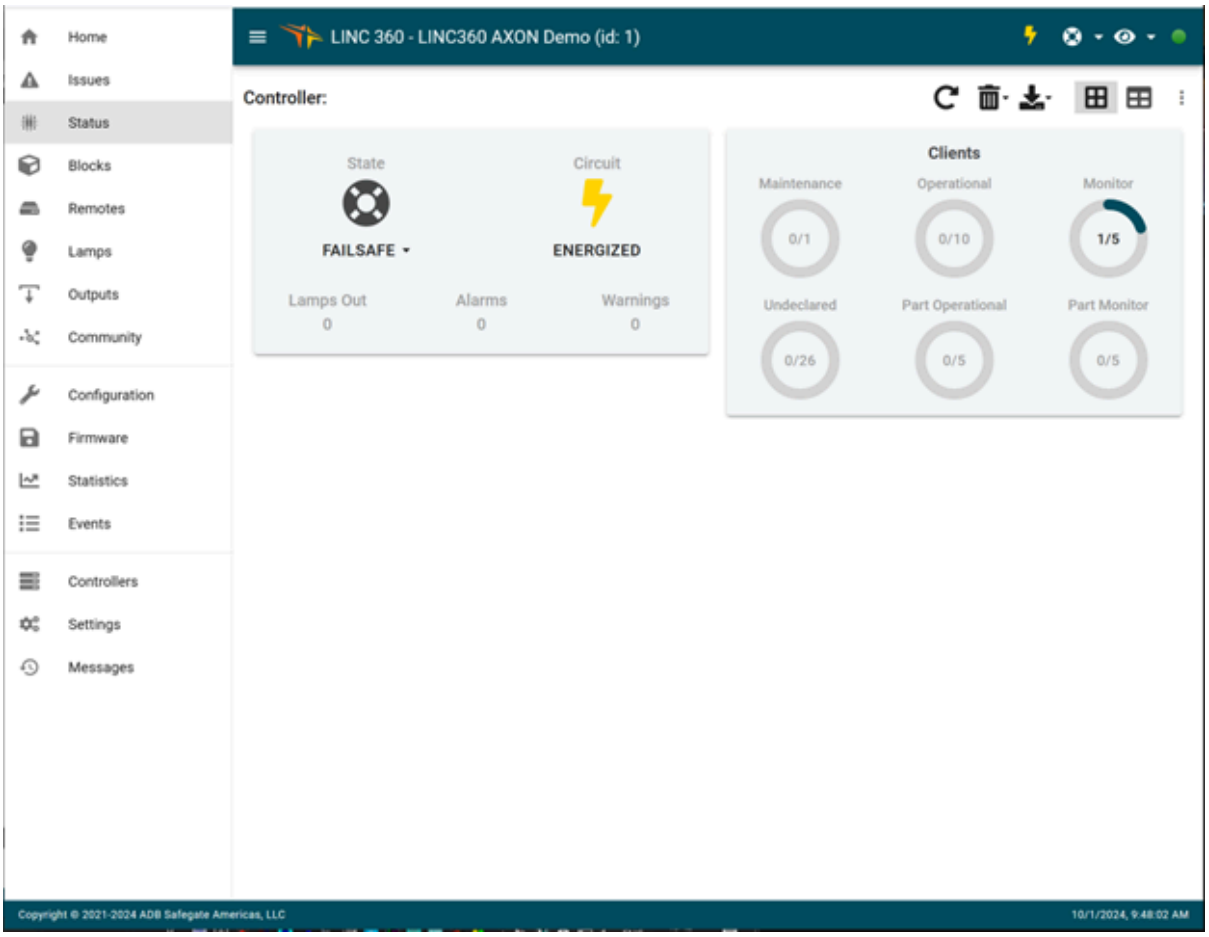
1. Connect to the controller. The eye icon (upper-right corner) indicates that the controller is in **Full Monitor**, which is the default state. The green dot next to it indicates an active connection.

   Example:



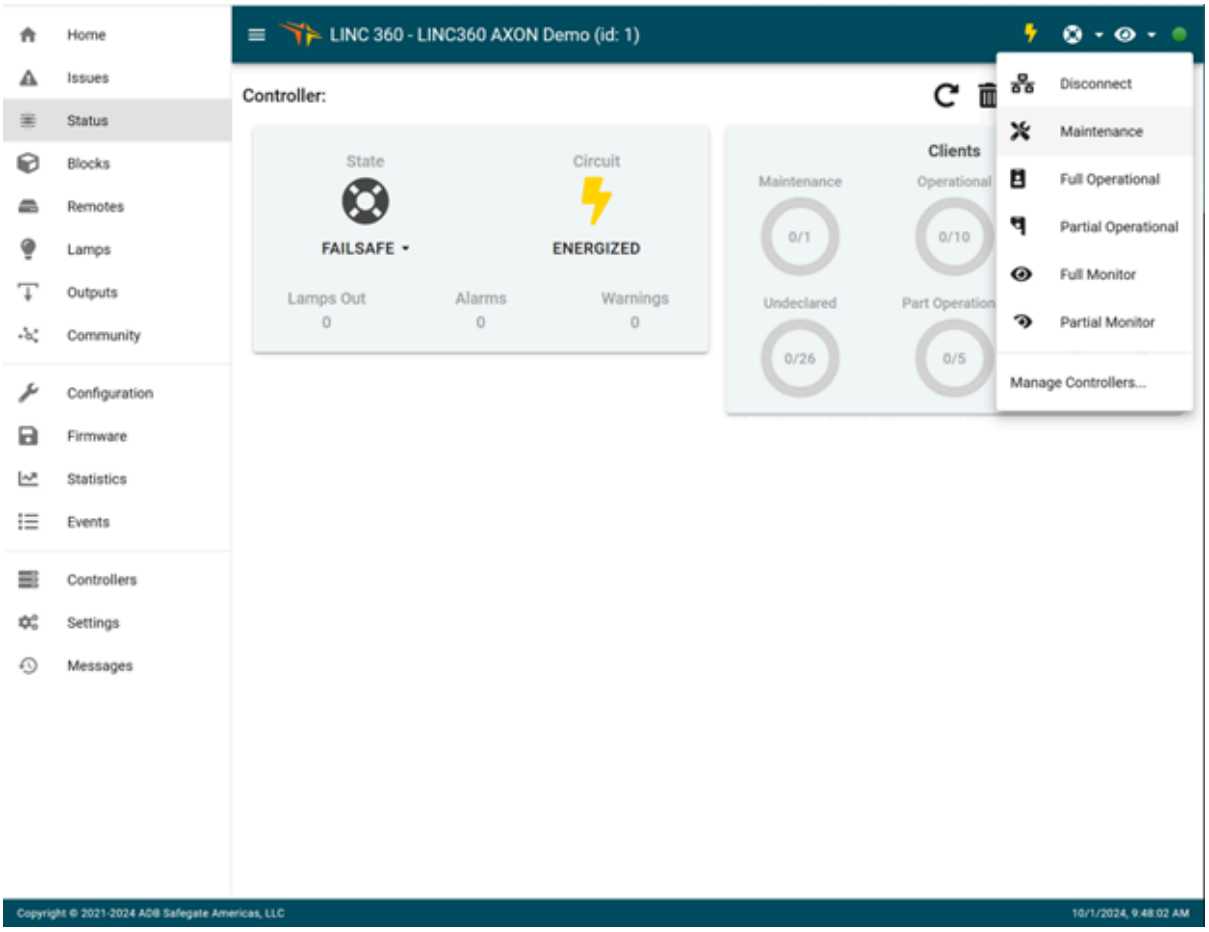
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

2. Switch to the **Status** page by selecting it on the navigation pane.
   Example:



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

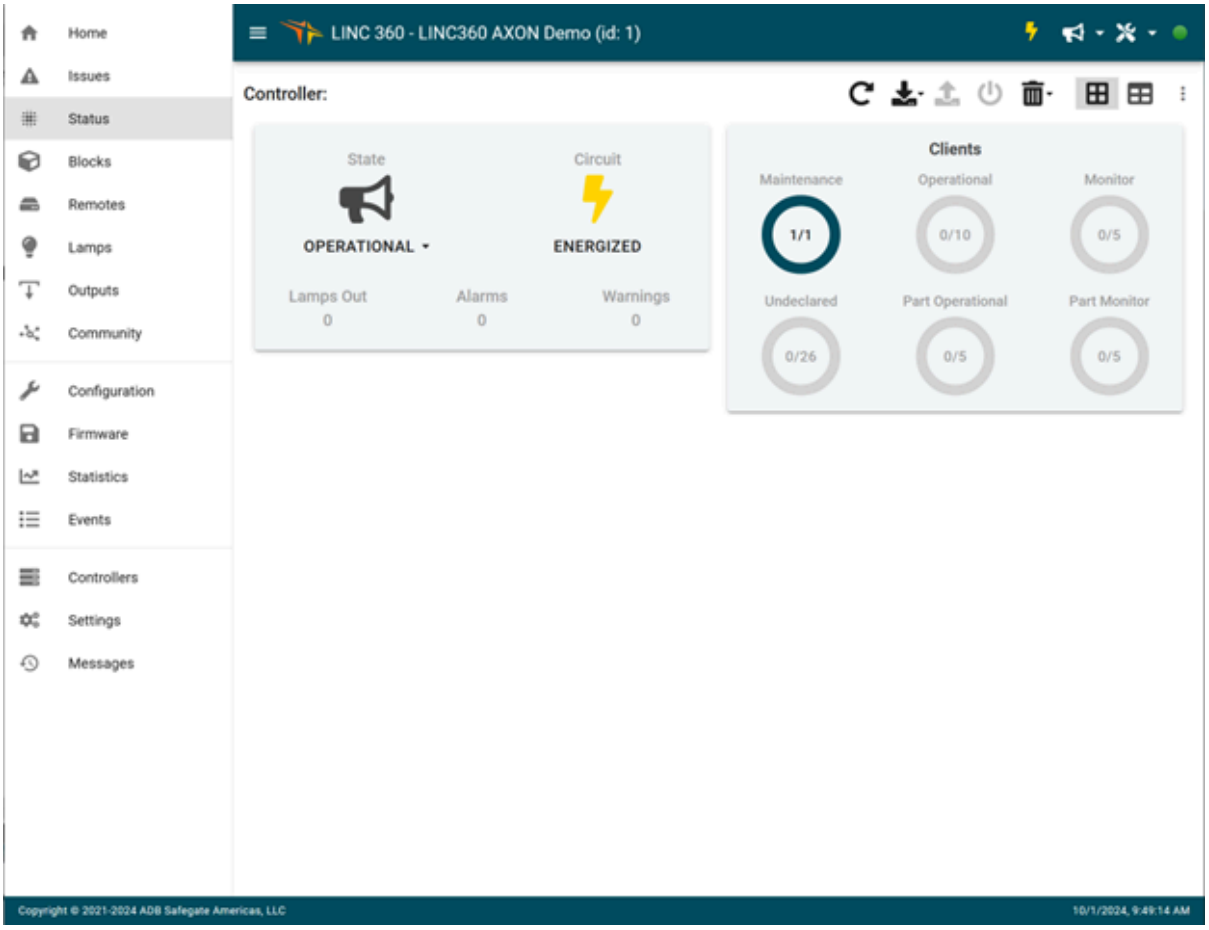
3. Change user role to **Maintenance** by clicking on the eye icon in the upper-right corner.
   Example:



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

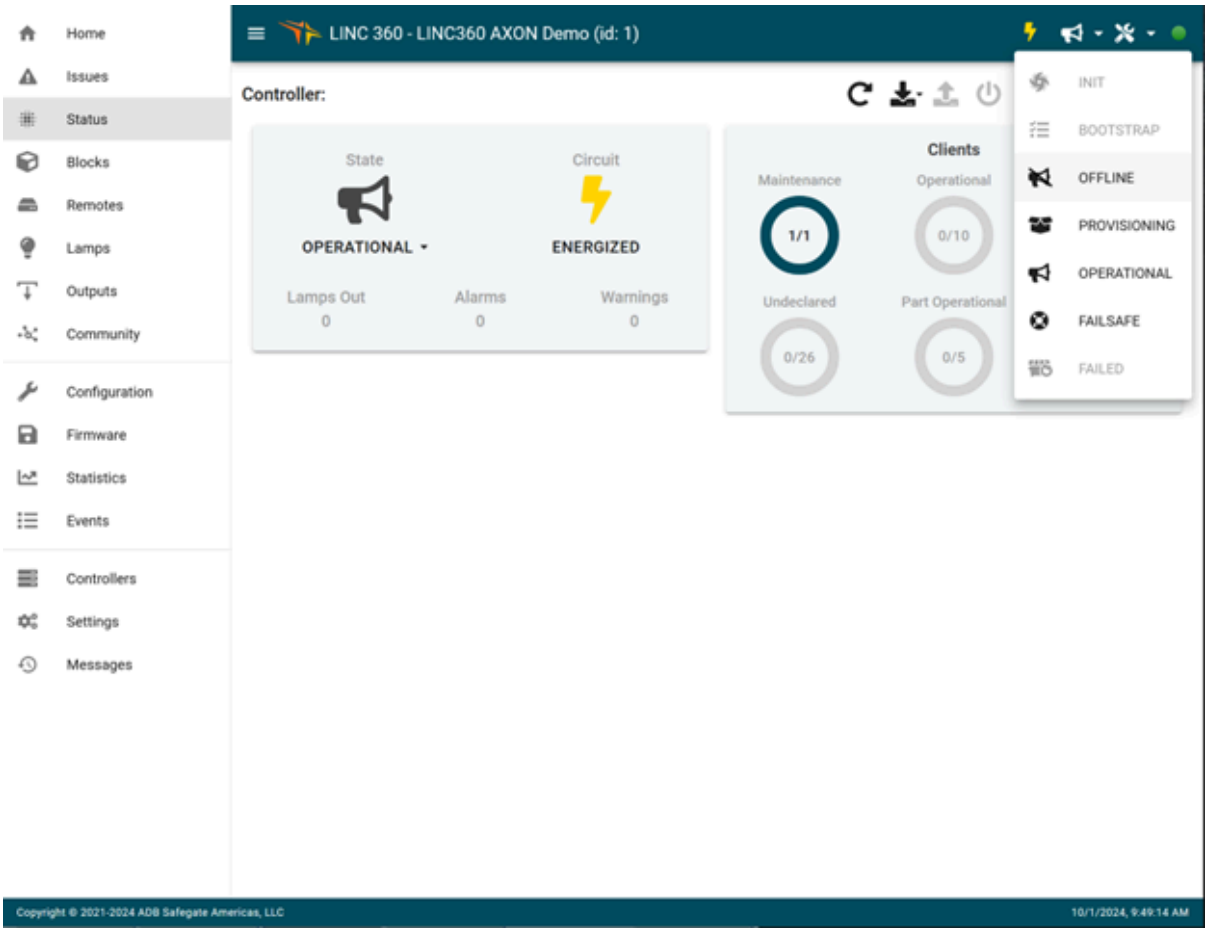
4. Notice the new options on the header bar (**Software Update**). They are grayed out because the controller is in the **Operational** state.

   Example:



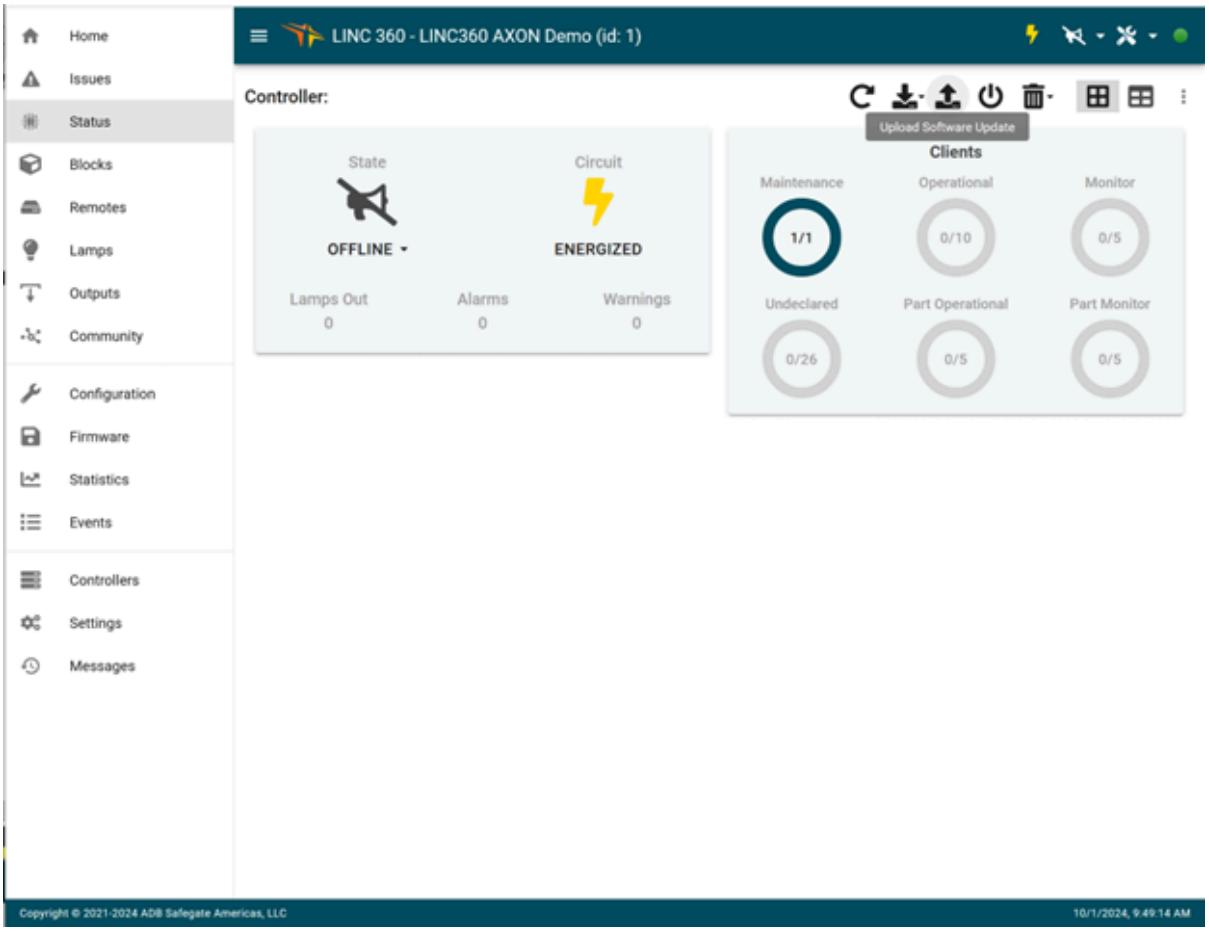
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

5. Change the controller to the **Offline** state by clicking on the icon on the left of the **Maintenance** role.
   Example:



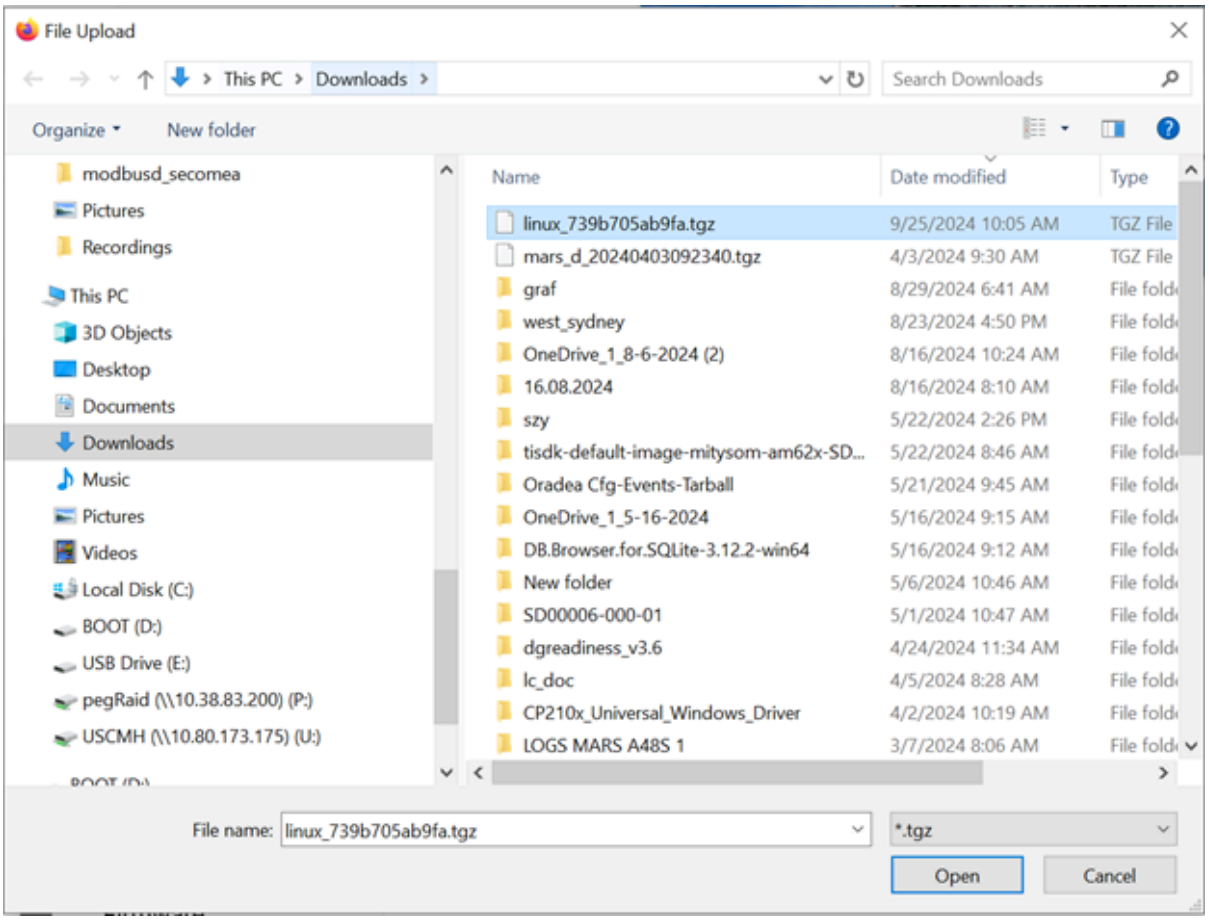
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

6. Click the **Upload Software Update** button.
Example:



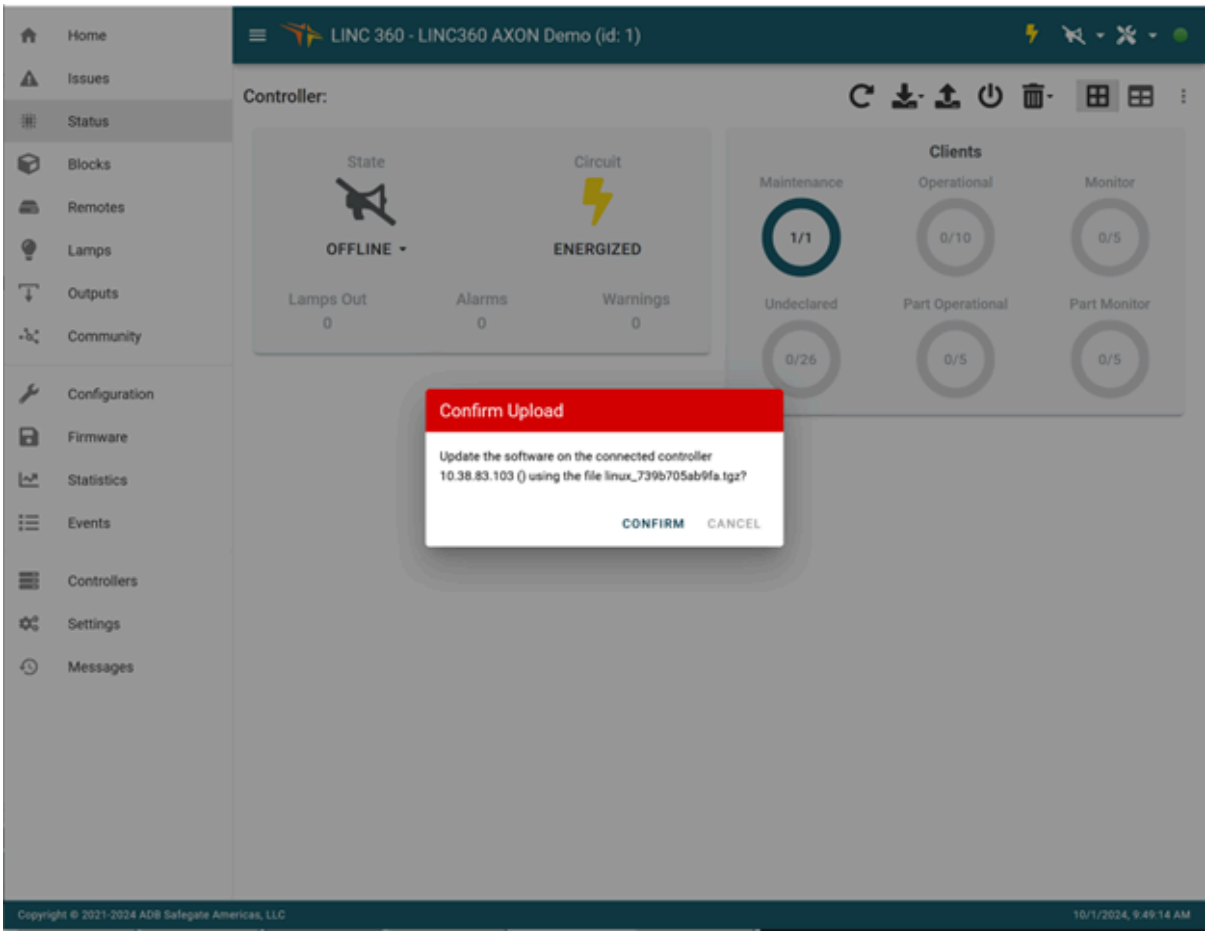
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

7. In the file selection menu, choose the .tgz file of the firmware update you wish to upload.
   Example:



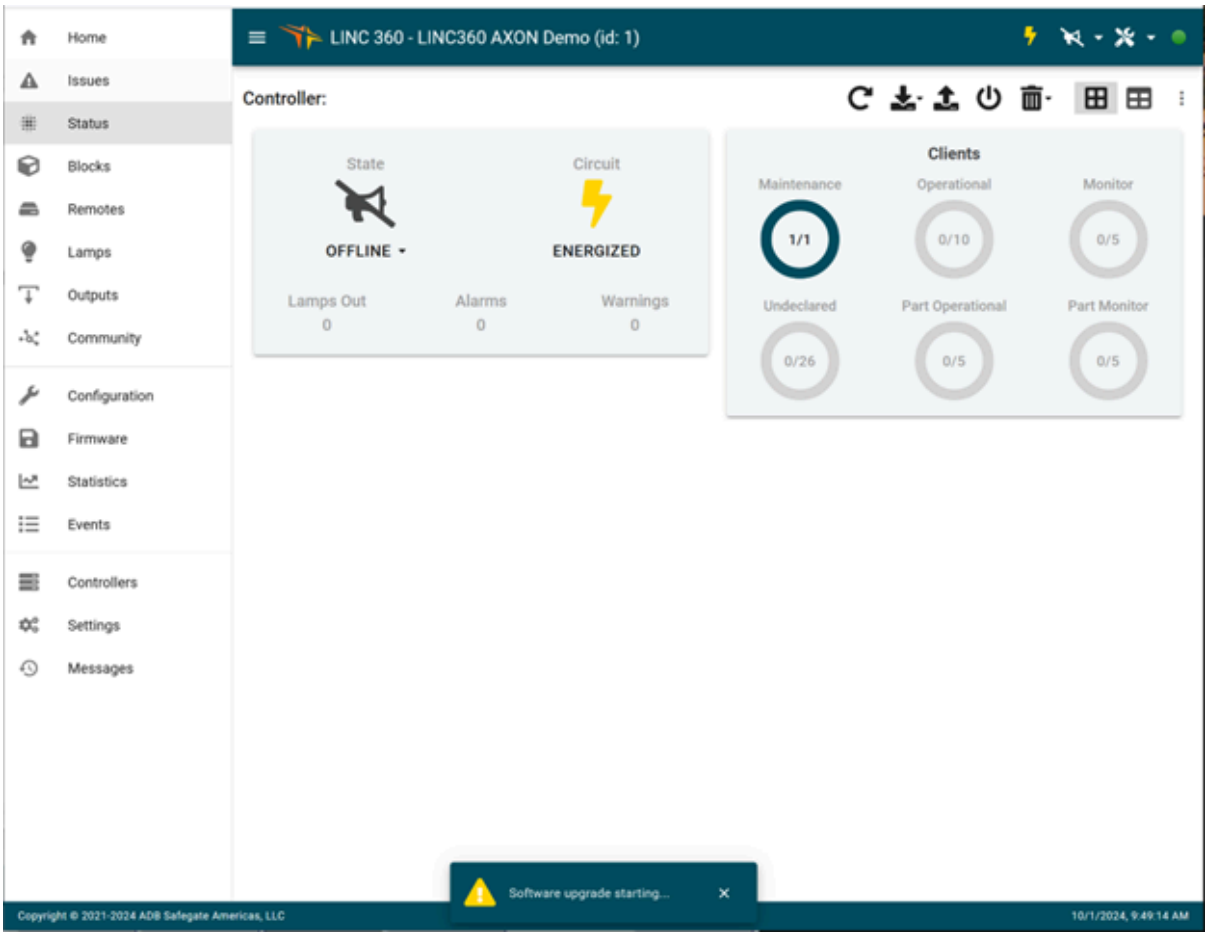
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

8. Confirm that you want to upgrade the firmware.
   Example:



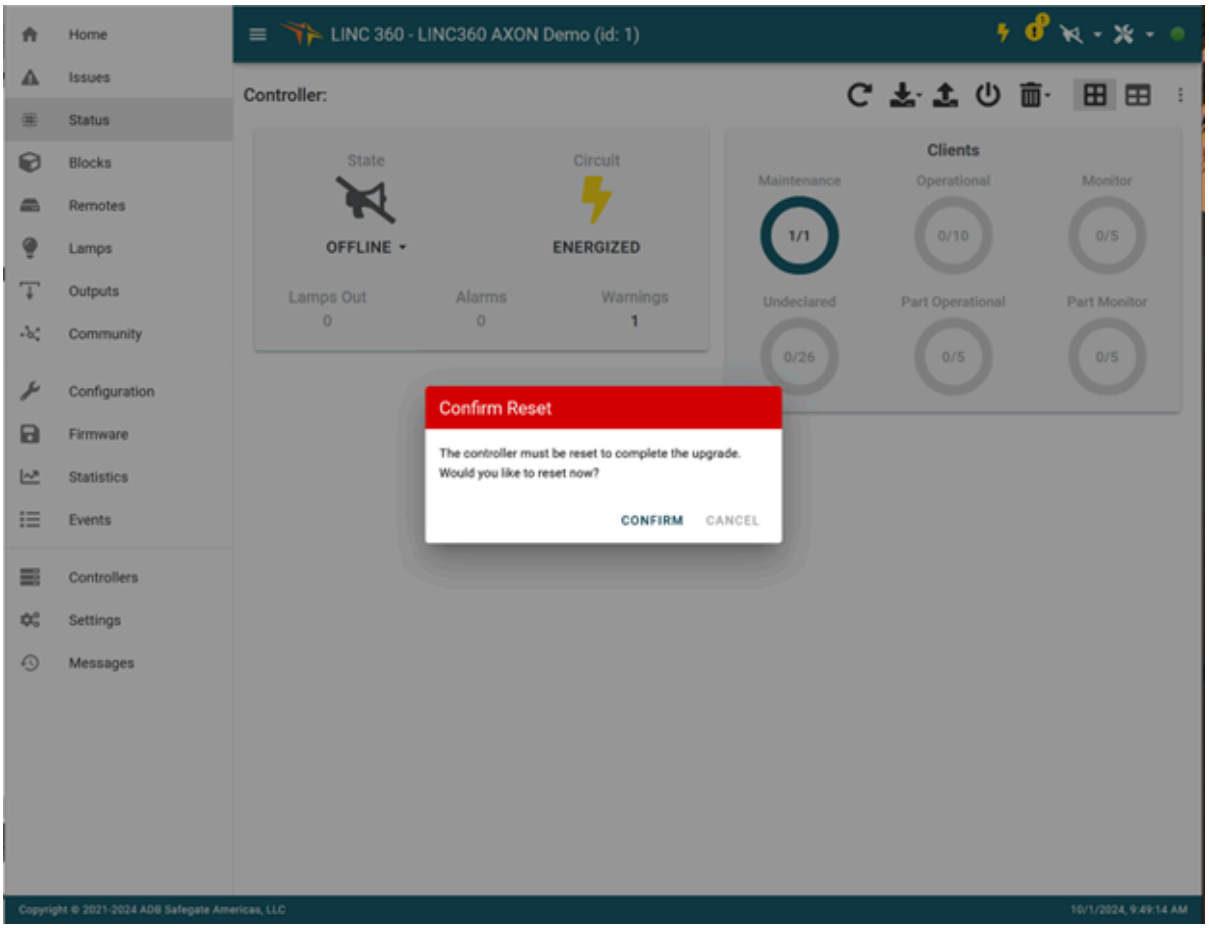
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

9. A notification announces that the update is in progress.
   Example:

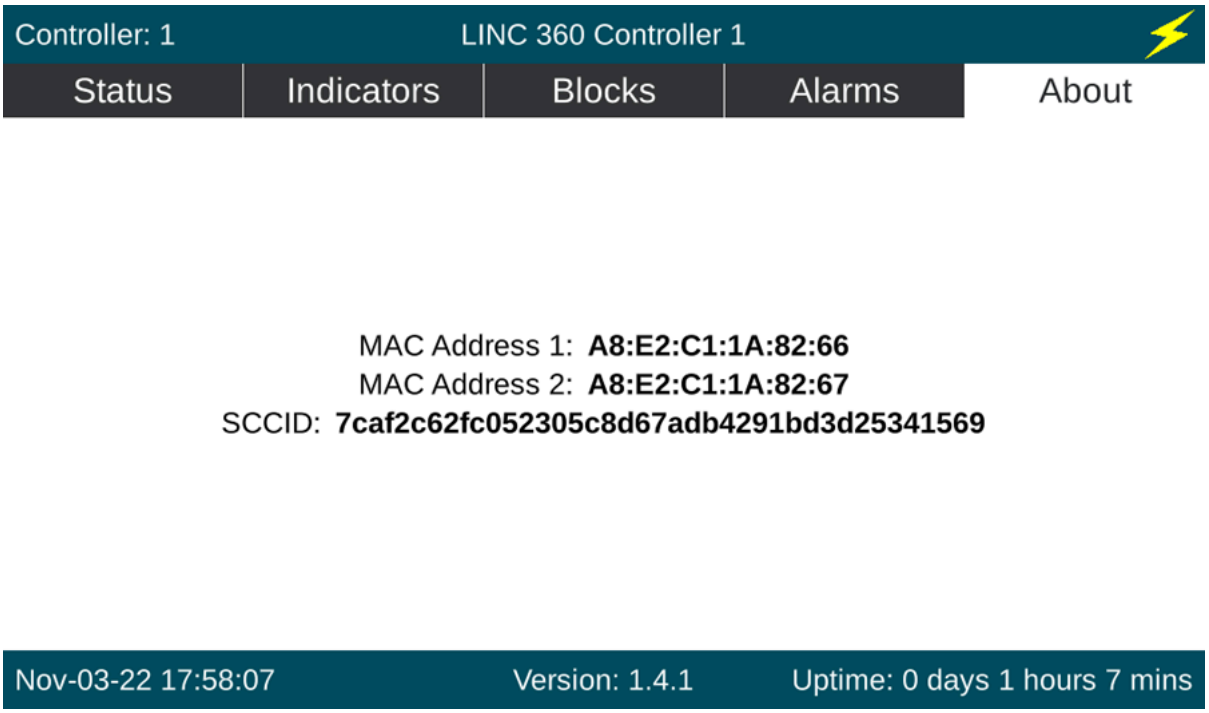


Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

10. Once uploaded, the user is prompted to reboot the controller.
Example:



11. After restart, go to the **About** tab on the touchscreen and verify the firmware version.
Example:



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

5.2.2 Controller Modem Firmware Update

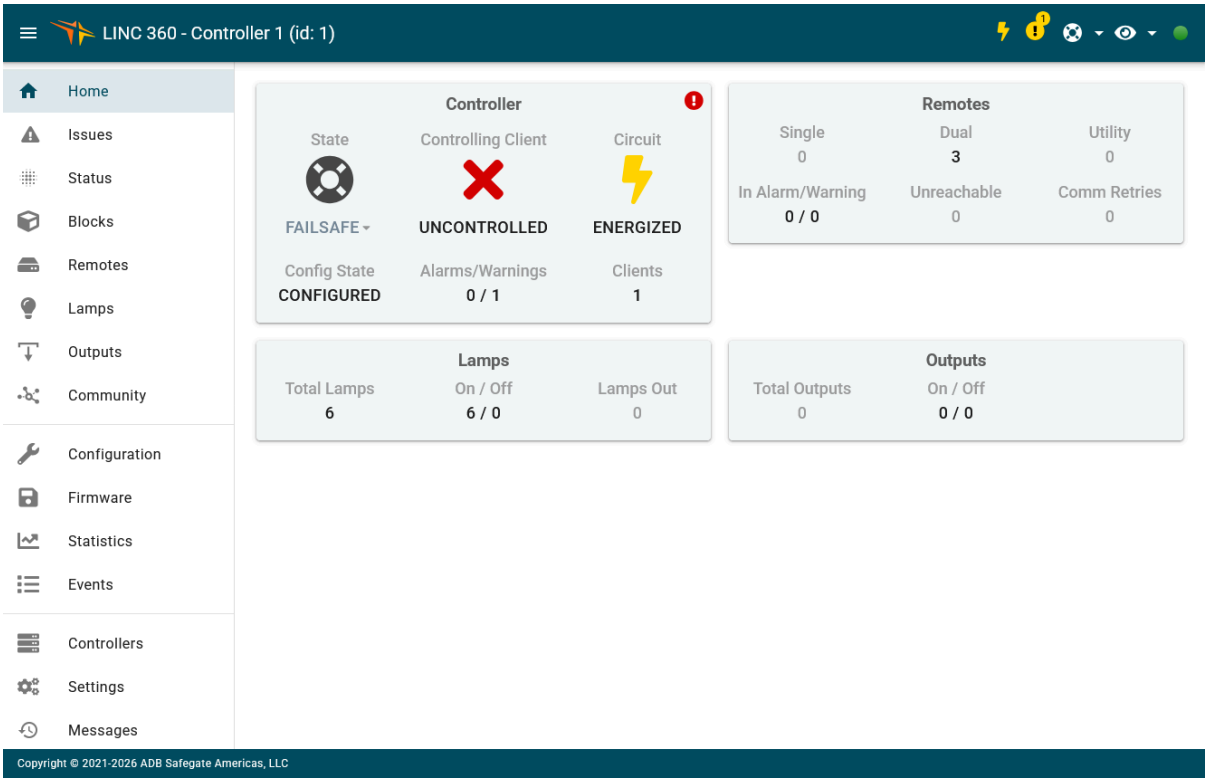
This procedure updates only the modem firmware of a LINC 360 controller from the web interface. It does not update the controller software (see section Controller Firmware Update) or the firmware of the remotes and peripherals (see section Remote Firmware Update). It takes approximately 15–20 minutes.

IMPORTANT
Modem firmware updates are supported only on controllers running software version 3.3 or later.

Note
The Maintenance role is required to update the modem firmware (see Figure 3, User Roles). The modem firmware file has the extension **.hex**.

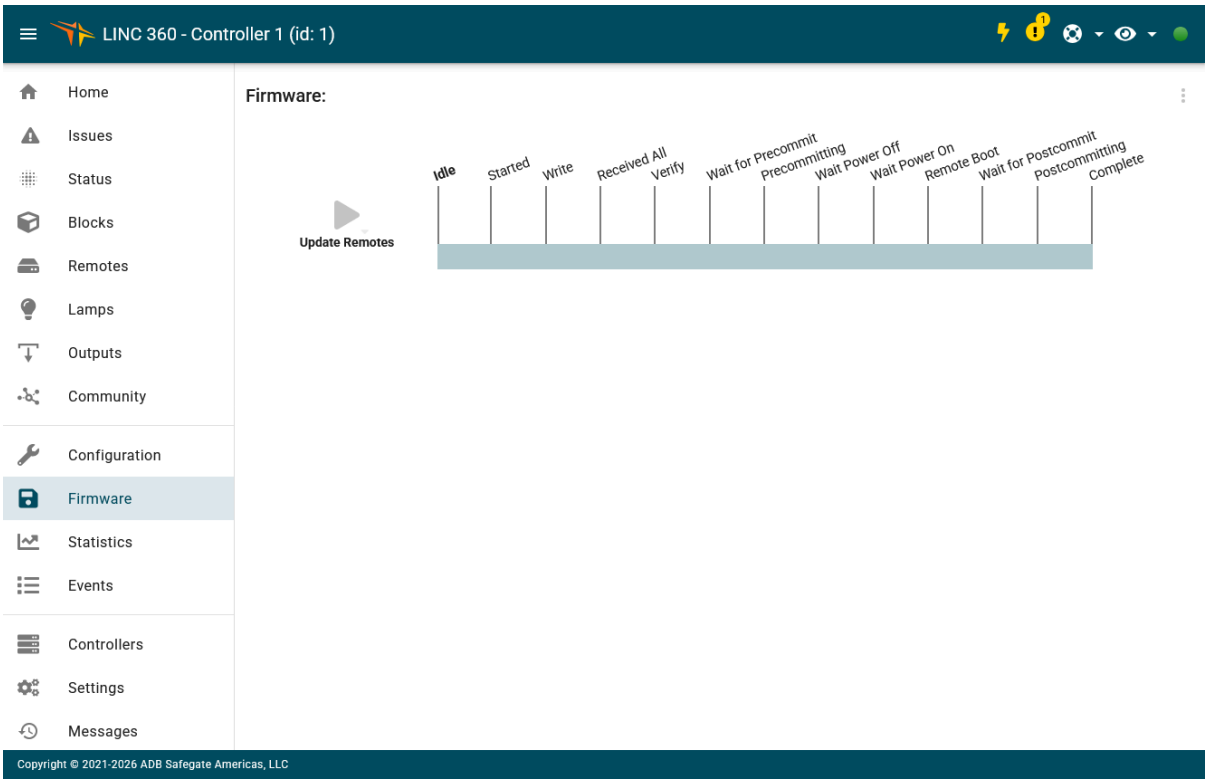
1. Connect to the controller.
   The eye icon in the upper-right corner indicates that the controller is in **Full Monitor**, which is the default state. The green dot next to the icon indicates an active connection.

   Example:

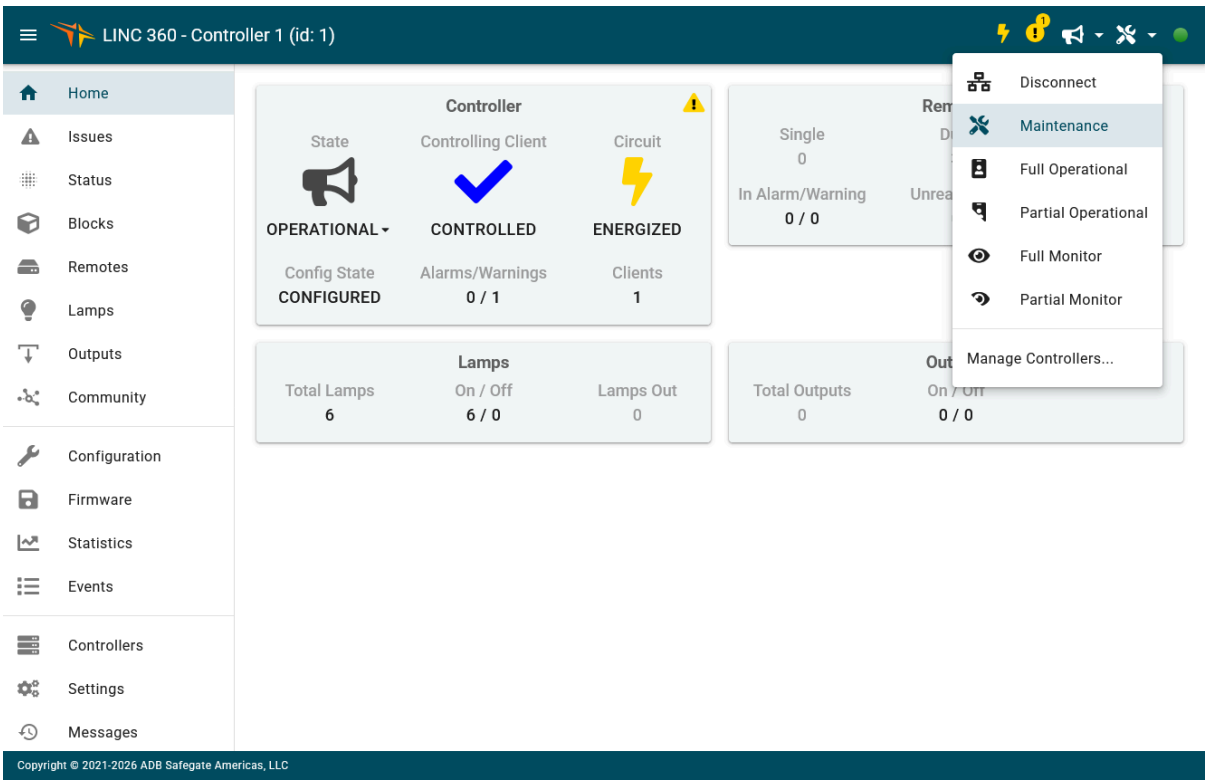


Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

2. In the navigation pane, select **Firmware**.
Example:



3. Select the eye icon in the upper-right corner, and then select the **Maintenance** role.
Example:

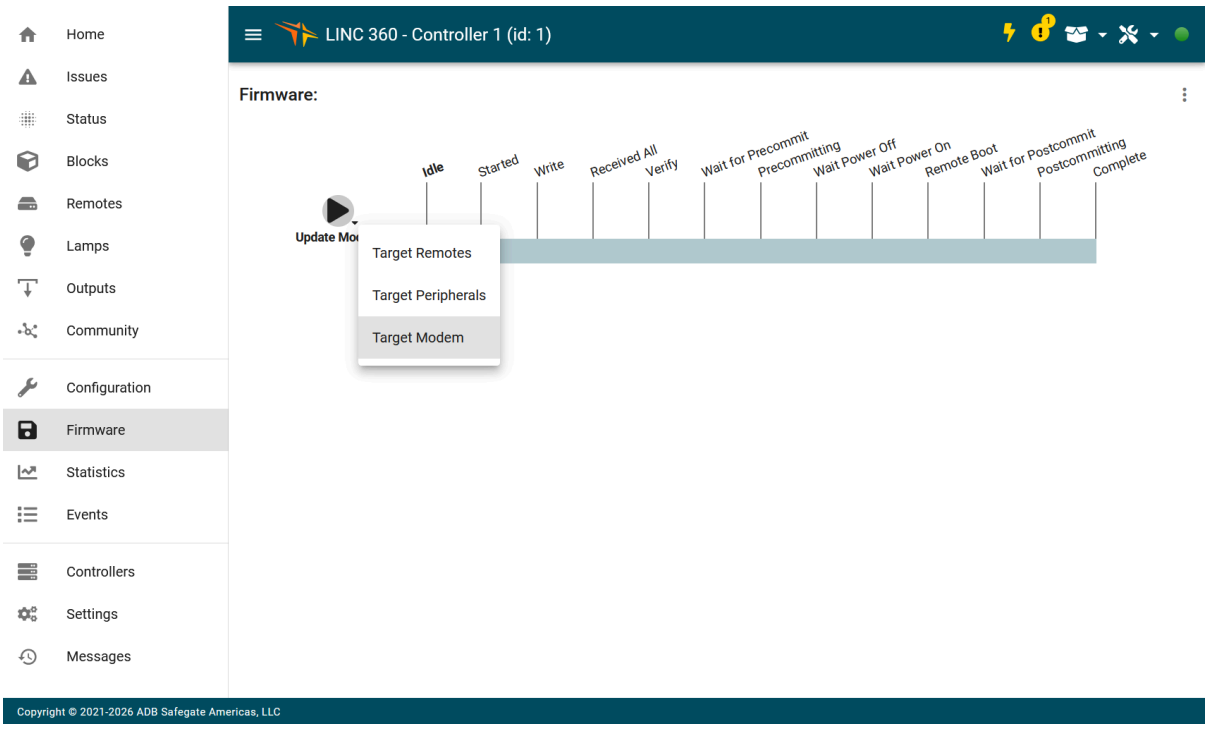


Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

4. Select the icon to the left of **Maintenance** to change the controller state to **Provisioning**.
   Example:



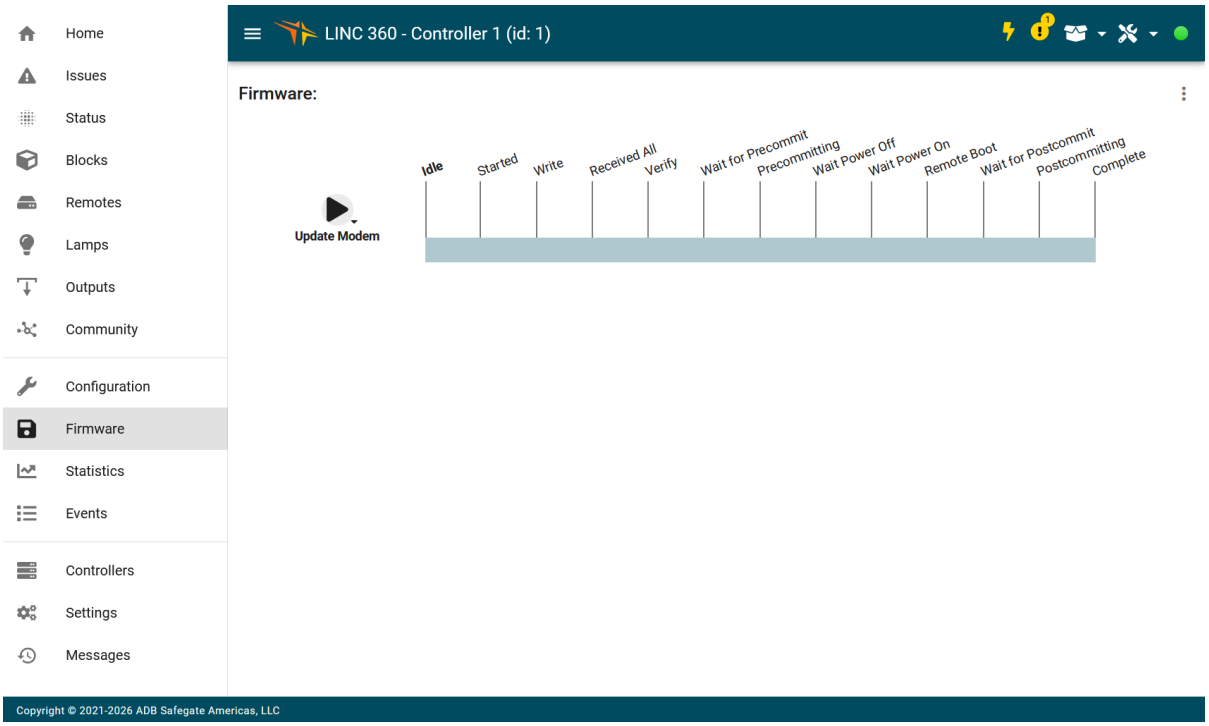
5. Select the arrow next to **Update**, and then select **Target Modem**.
   Example:



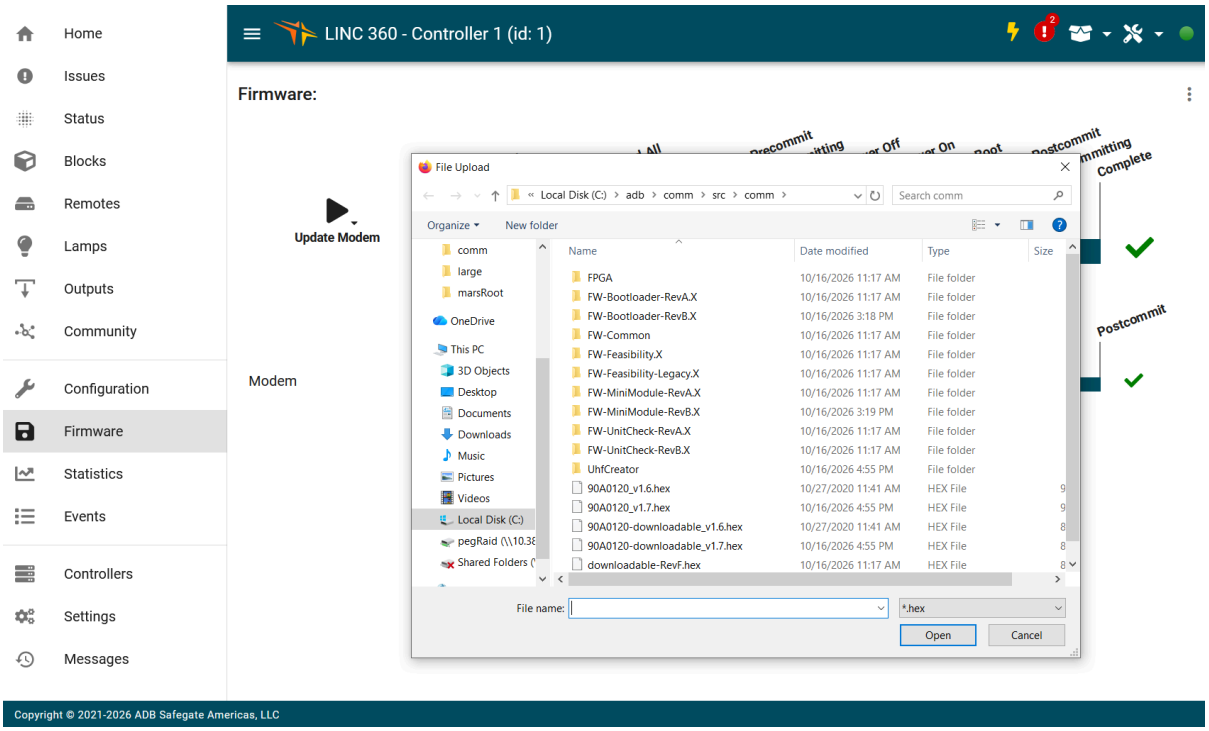
Result: The **Update** button changes to **Update Modem**.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

6. Select the **Play** button above **Update Modem**.
Example:



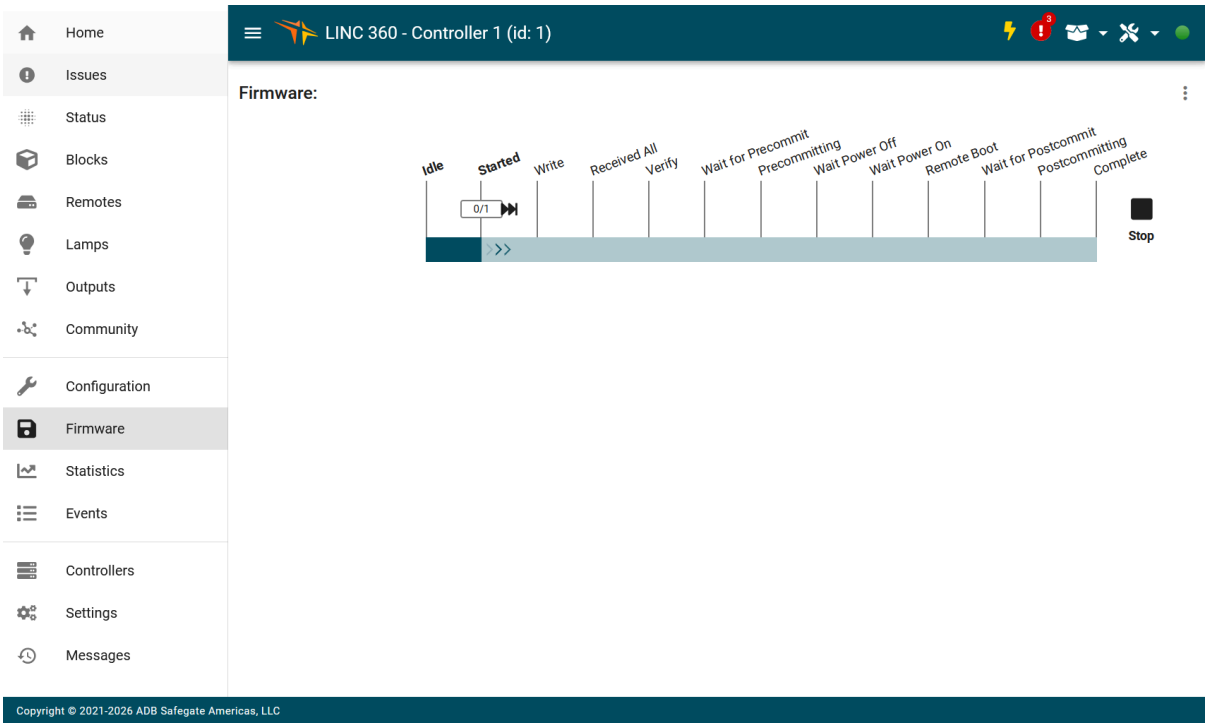
7. In the file selection window, select the .hex file of the modem firmware update to install.
Example:



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

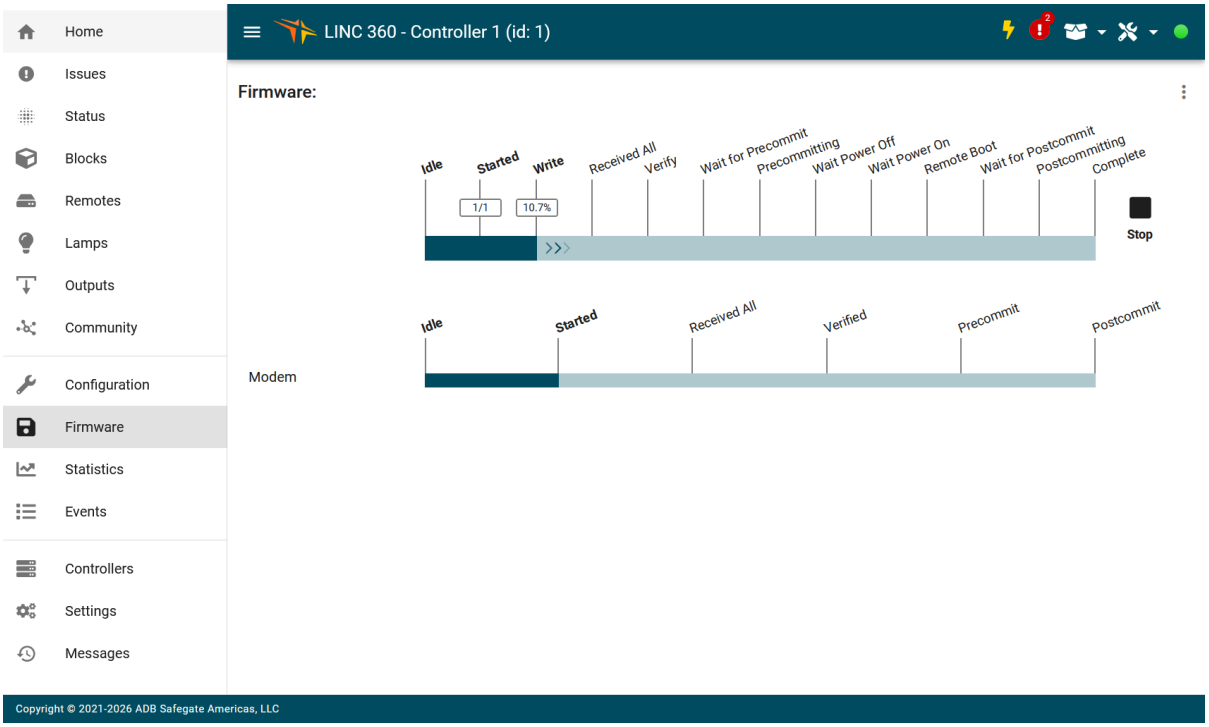
8. Follow the instructions on the screen.
   The firmware update starts and the progress bar displays **Started**. When the modem starts the update, the counter changes from **0/1** to **1/1**.

   Example:



9. Monitor the firmware update progress.
   The progress bar under **Write** indicates the percentage of firmware written to the modem. The **Modem** progress bar indicates the update progress reported by the modem.

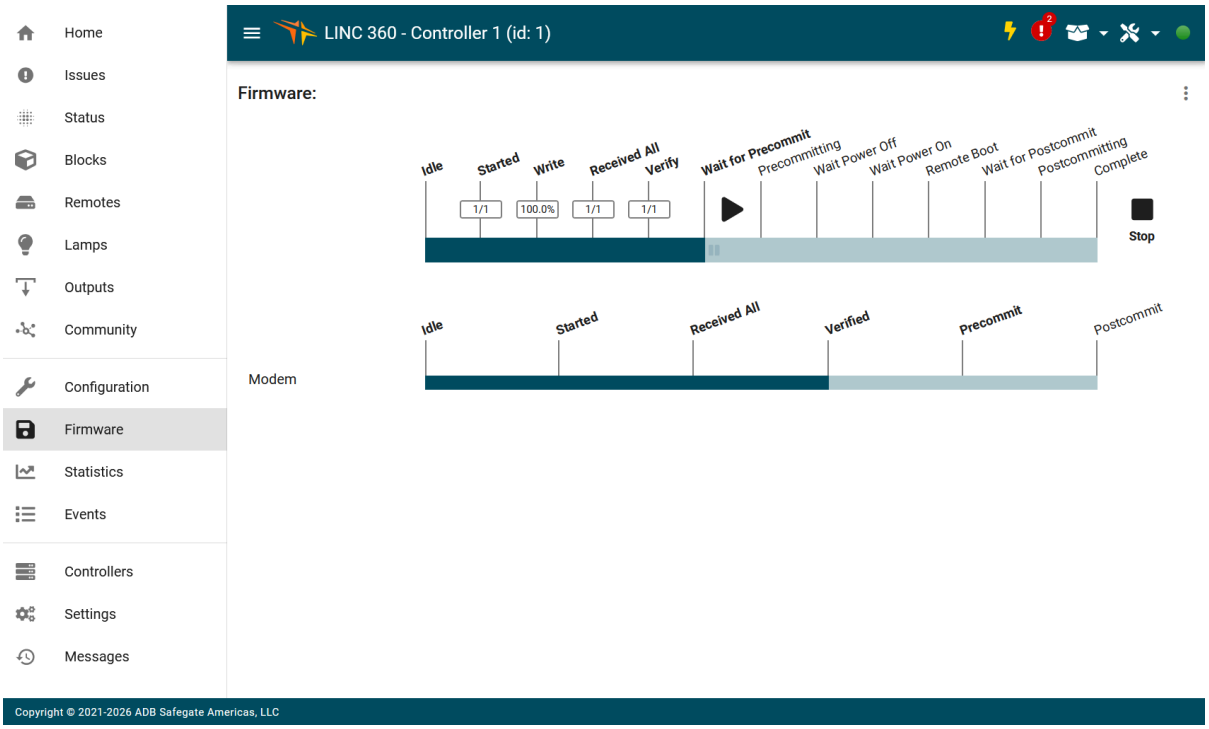
   Example:



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

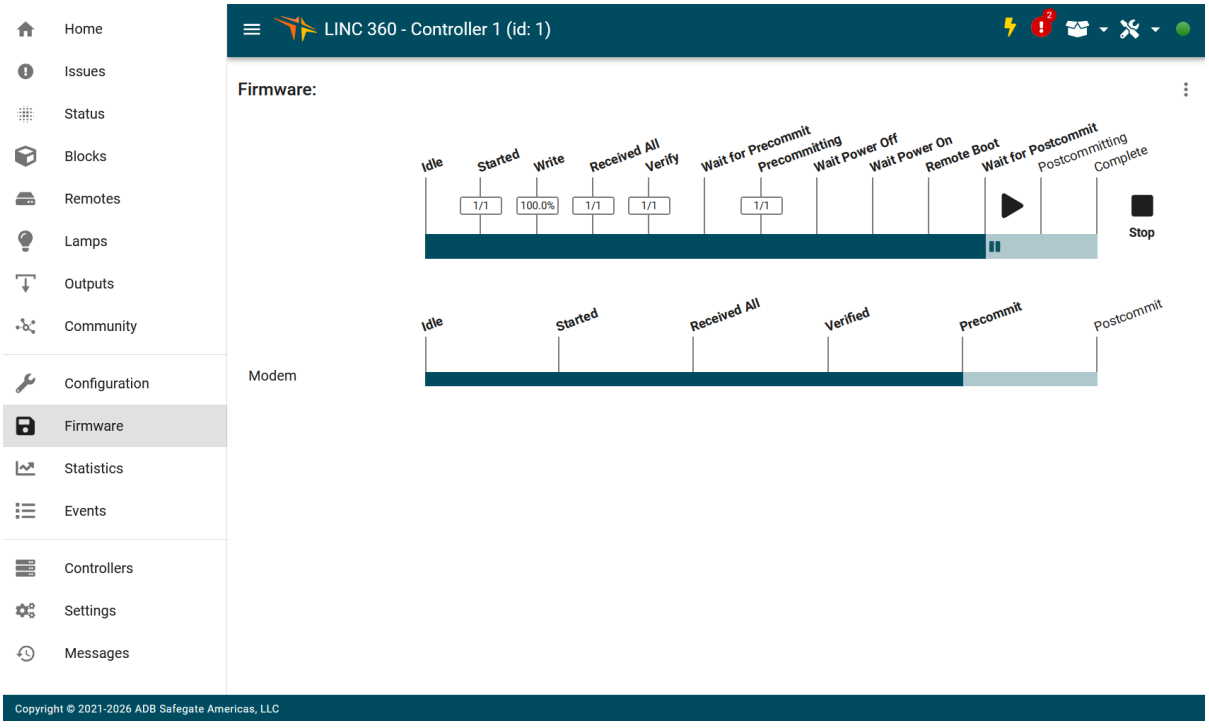
10. When the update reaches **Wait for Precommit**, select **Play** to continue.
    The update reaches **Wait for Precommit** after the firmware has been received and verified, as indicated by **Received All** and **Verify**.

    Example:



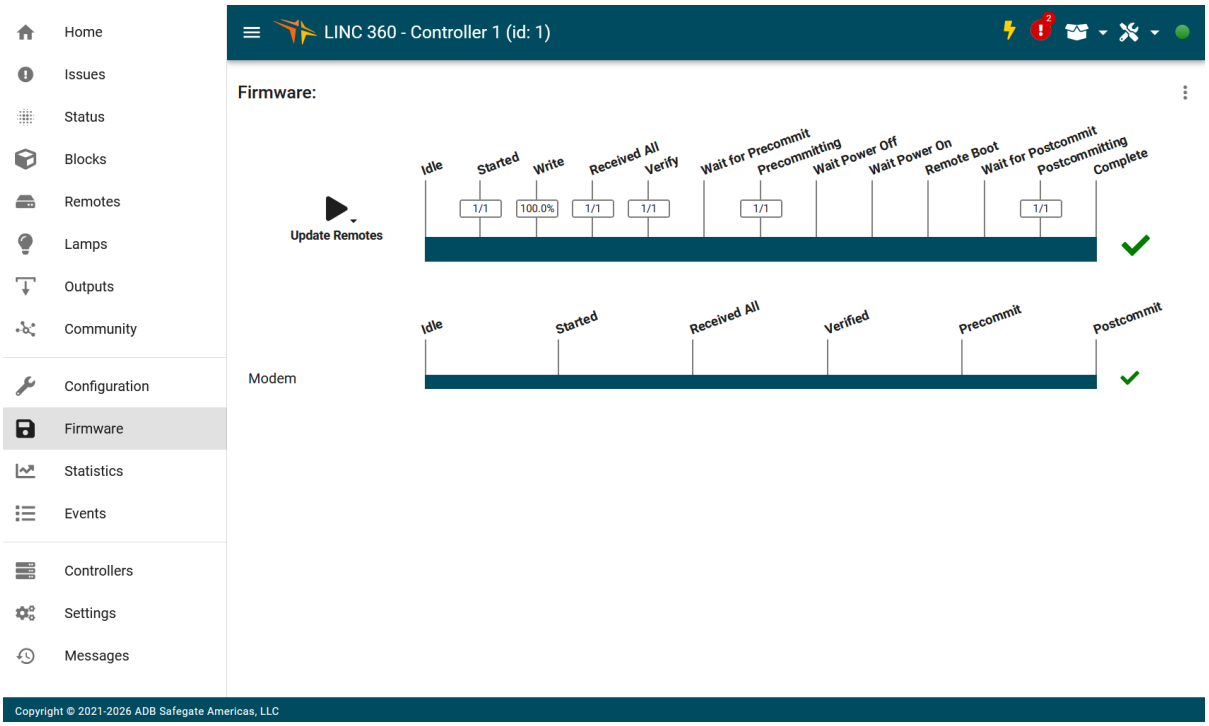
11. When the update reaches **Wait for Postcommit**, select **Play** to continue.

    Example:



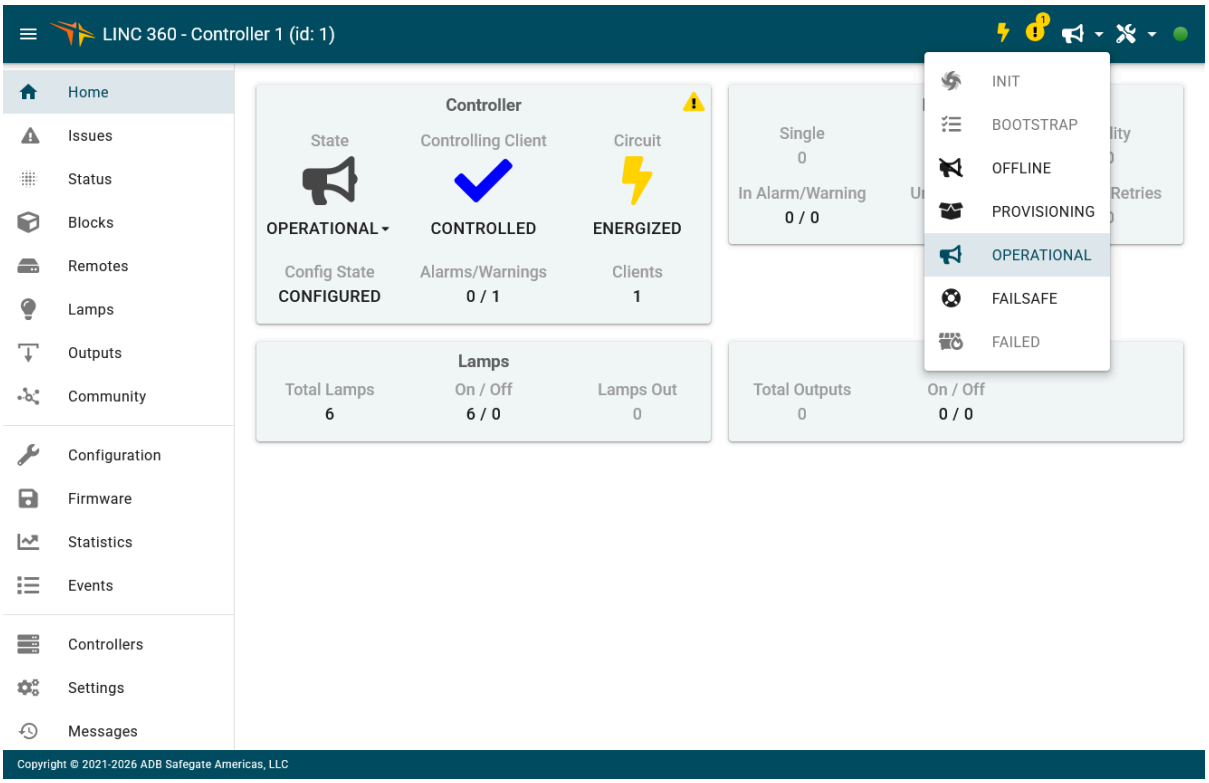
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

12. Wait until the firmware update is complete.
Example:



Result: Both progress bars are full and display a green check mark when the update is complete.

13. Return the controller to **Operational** state.
Example:



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

14. Restore the user role to **Full Monitor**.
Example:



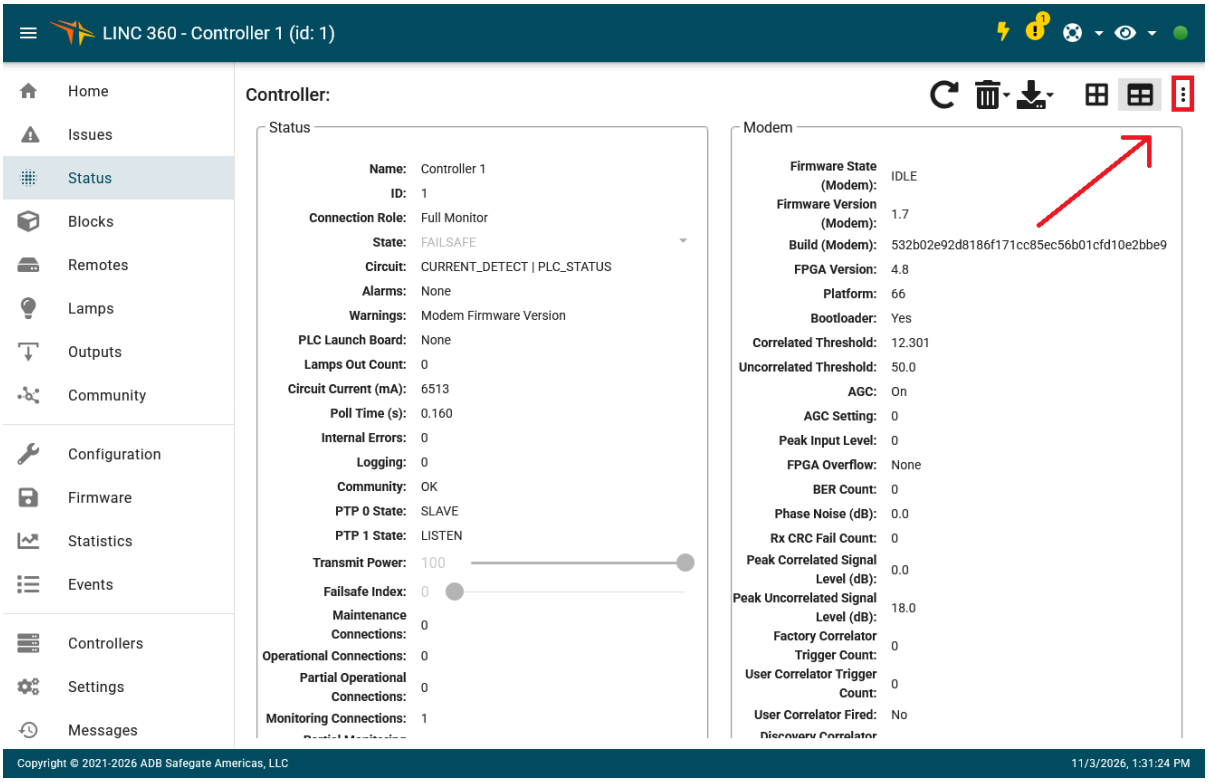
Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

15. In the navigation pane, select **Status**, and then select the **Table** view.
Verify that the new modem firmware version is displayed in the **Modem** panel under **Firmware Version (Modem)**.

Note

If **Firmware Version (Modem)** is not displayed, select **More options** (⋮) to open the **Settings** pane, and then enable the **Firmware Version (Modem)** field.

Example:



Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

6.0 Controller Configuration

Configure the Controller IP Address

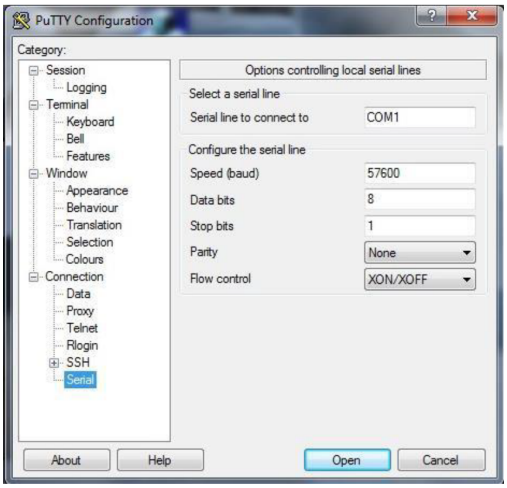
Configuration of the IP address for the controller unit should only be performed by an ADB SAFEGATE representative. The following items are required to complete this activity:

1. Connect a 9-pin null modem cable (pins 2 and 3 crossed) between the "Console" port of the LINC 360 Controller and a serial port on your laptop. This cable needs to have female connections at both ends.
2. A terminal program such as PuTTy or HyperTerminal is required to send commands to the LINC 360 Controller. PuTTY is a free application: https://www.putty.org/
3. Note the two MAC addresses indicated on the status tab of the LINC 360 Controller touchscreen display.
4. Identify the ALCS IP address, subnet mask and gateway to be used for each MAC address port (defined in the Controller XML config file).

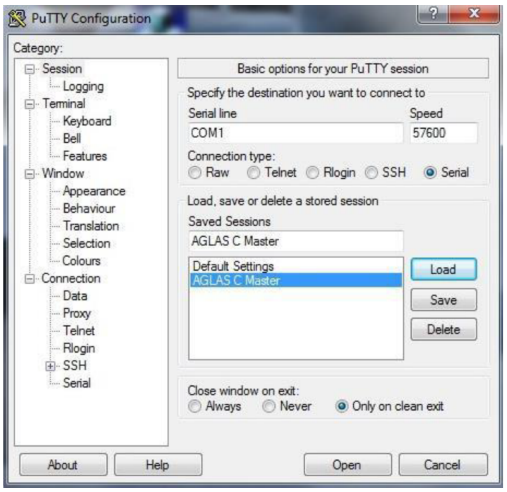
No field circuit connections are necessary for configuration of the IP addresses. The following steps can be used as a guide:

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

1. Using PuTTy (or your preferred serial console application), connect to the front panel console port using these SERIAL settings:
   a. 57600, 8, 1, n, XON / XOFF



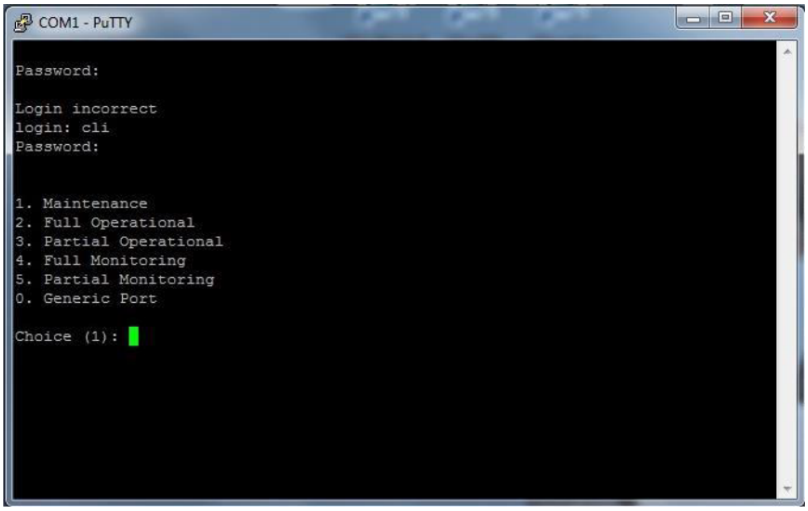
Putty SESSION settings should look like this:



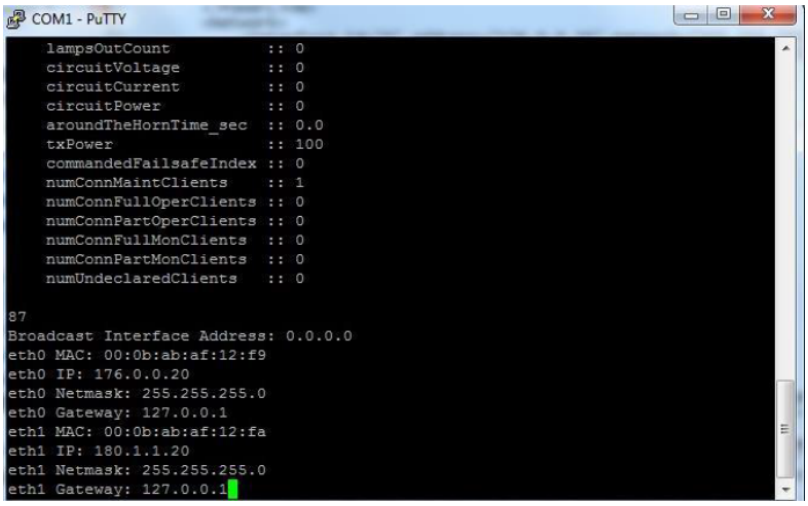
   b. Click **Open** to open a command prompt. Press **Enter** a few times until prompted for a password.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

c. Login to the controller using the following credentials:
   - Login: 'cli'
   - Password: 'adb'
   - Select (1) Maintenance Role



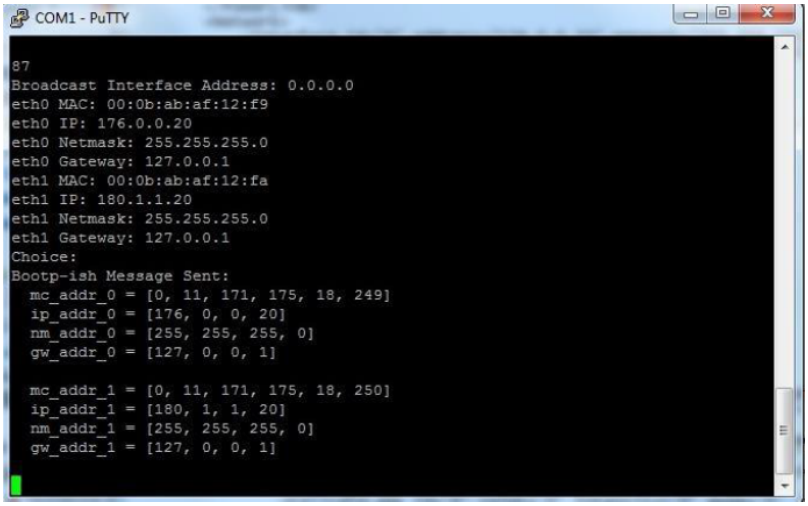
Enter a question mark (?) to list all possible commands.



d. Select menu item command "87" (Send BootP-ish Message) and press **Enter**.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

e. Enter the following data for each when prompted:
   - Broadcast Interface, enter '0.0.0.0'
   - Eth0 MAC, enter the address of Eth0 from the front panel display 'About' page
   - Eth0 IP, enter '176.0.0.201' – ALCS Dependent
   - Eth0 Netmask, enter '255.255.0.0' – ALCS Dependent
   - Eth0 Gateway, enter '127.0.0.1 – ALCS Dependent
   - Eth1 MAC, enter the address of Eth1 from the front panel display 'About' page
   - Eth1 IP, enter '180.1.1.201' – ALCS Dependent
   - Eth1 Netmask, enter '255.255.0.0' – ALCS Dependent
   - Eth1 Gateway, enter '127.0.0.1 – ALCS Dependent
   - Press **Enter**.



The controller should reboot, when it comes back it will have the IP addresses assigned.
This can be verified on the **Status** tab on the front touchscreen display of the controller.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

7.0 Troubleshooting

If any difficulty is encountered replacing a failed remote unit, there are five likely causes:

1. The field circuit is not energized.
2. The serial number entered in the replace remote field of the GUI does not match the serial number of the remote unit that was installed on the field circuit.
3. The associated isolation transformer has failed or is "noisy" (producing harmonic distortion or interference) and preventing optimum communication.
4. The replacement remote unit installed is failed out of the box, or currently "logged-in" as another unit and not scanning all available communication frequencies
5. Another user is logged in in a Maintenance role from a different network location and is creating conflicts.

Additional troubleshooting guidance can be found in the individual manuals for the MLC and ILC.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Appendix A: Support

Your airport needs fast, reliable support when technical issues affect operations. ADB SAFEGATE provides 24/7 phone support by experienced technical service and support teams to help you troubleshoot issues and reduce disruption.

For general product information, solutions and more, visit the ADB SAFEGATE website, www.adbsafegate.com.

Global Technical Service & Support

For support in Europe, the Middle East, Africa and Asia Pacific, contact ADB SAFEGATE's technical support specialists. Trained in all areas of system issues, troubleshooting, quality control and technical assistance, our highly experienced Technical support specialists offers 24/7 phone support.

- Europe: **+32-2-722-17-11**
- China: **+86-10-8476-0106**
- Middle East and Africa: **+971-4-452-7575**

Live Technical Support – Americas

For support in the Americas, contact ADB SAFEGATE's U.S.-based technical support specialists. The team provides support for airfield lighting products, power and control systems, weather systems, and Safedock A-VDGS.

Phone support is available 24/7.

- United States: **+1-800-545-4157**
- Canada: **+1-905-631-1597**

You can also reach the Americas support team by email during regular business hours:

- Airfield Technical Service: techservice.us@adbsafegate.com
- Apron (previously Gate) Technical Service: gateservice.us@adbsafegate.com
- Weather Customer Service: CustomerServiceWeather@adbsafegate.com

Before You Call

Help us resolve your issue faster by having the right information ready before you contact Technical Support.

For Airfield Lighting, Control Systems, and Weather Product Issues

Please review the following before calling:

- Review the product manual and troubleshooting guide.
- Be near the product and ready to troubleshoot.
- Have a True RMS Multimeter available, along with any other necessary tools.
- Have the following information ready:
  - Airport code
  - Company name, phone number, and email address
  - Product number or part number, if available

For Safedock A-VDGS Issues

Please collect the following information before calling:

- Gate number
- Flight number
- Aircraft type
- Time of the event
- Description of the issue
- Any actions already taken to resolve the issue
- CCTV footage of the incident, if available, to help align the event with the Safedock log file

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

A.1 ADB SAFEGATE Website

The ADB SAFEGATE website, www.adbsafegate.com, offers information regarding our airport solutions, products, company, news, links, downloads, references, contacts and more.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

A.2 Recycling

A.2.1 Local Authority Recycling

The disposal of ADB SAFEGATE products is to be made at an applicable collection point for the recycling of electrical and electronic equipment. The correct disposal of equipment prevents any potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling. The recycling of materials helps to conserve natural resources. For more detailed information about recycling of products, contact your local authority city office.

A.2.2 ADB SAFEGATE Recycling

ADB SAFEGATE is fully committed to environmentally-conscious manufacturing with strict monitoring of our own processes as well as supplier components and sub-contractor operations. ADB SAFEGATE offers a recycling program for our products to all customers worldwide, whether or not the products were sold within the European Union (EU).

ADB SAFEGATE products and/or specific electrical and electronic component parts which are fully removed/separated from any customer equipment and returned will be accepted for our recycling program.

All items returned must be clearly labeled as follows:

- For Restriction of Hazardous Substances (*RoHS*)/Waste Electrical and Electronic Equipment (*WEEE*) Recycling
- Sender contact information (Name, Business Address, Phone number).
- Main Unit Serial Number.

ADB SAFEGATE will continue to monitor and update according for any future requirements for *EU directives* as and when *EU member states* implement new *regulations* and or *amendments*. It is our aim to maintain our *compliance plan* and assist our customers.

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Company Addresses

ADB SAFEGATE, Belgium	ADB SAFEGATE BV Leuvensesteenweg 585 B-1930 Zaventem Belgium
Contact:	
Tel.: +32 2 722 17 11	Email: marketing@adbsafegate.com
Fax: +32 2 722 17 64	Internet: www.adbsafegate.com
ADB SAFEGATE, Americas	ADB SAFEGATE Americas, LLC 700 Science Blvd. Gahanna, OH 43230 USA
	ADB SAFEGATE 1065 National Dr., Suite 1 Sacramento, CA 95834 USA
Contact:	
Tel.: +1 (614) 861 1304	Email:sales.us@adbsafegate.com
Fax: +1 (614) 864 2069	Internet: www.adbsafegate.com
ADB SAFEGATE, Sweden	ADB SAFEGATE Sweden AB Djurhagegatan 19 SE-213 76 Malmö Sweden
Contact:	
Tel.: +46 (0)40 699 17 00	Email: marketing@adbsafegate.com
Fax: +46 (0)40 699 17 30	Internet: www.adbsafegate.com
ADB SAFEGATE, China	ADB SAFEGATE Airfield Technologies Ltd. China Unit 603, D Block, CAMIC International Convention Center, No 3, Hua Jia Di East road, ChaoYang district, Beijing 100102 P.R. China
Contact:	
Tel.: +86 (10) 8476 0106	Email: china@safegate.com
Fax: +86 (10) 8476 0090	Internet: www.adbsafegate.com
ADB SAFEGATE, Germany	ADB SAFEGATE Germany GmbH Konrad-Zuse-Ring 6, D-68163 Mannheim Germany
Contact:	
Tel.: +49 (621) 87 55 76-0	Email: marketing@adbsafegate.com
Fax: +49 (621) 87 55 76-55	Internet: www.adbsafegate.com

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved

Empowering the Airside Evolution

WWW.ADBSAFEGATE.COM

SMARTER. BETTER. NOW.

ADB SAFEGATE

Copyright ©2023—2026 ADB SAFEGATE, All Rights Reserved