The Migration Guide for the MGate MB3170-G2/MB3270-G2 Series

Moxa Technical Support Team

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Contents

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About Moxa

Moxa is a leading provider of edge connectivity, industrial computing, and network infrastructure solutions for enabling connectivity for the Industrial Internet of Things. With over 35 years of industry experience, Moxa has connected more than 111 million devices worldwide and has a distribution and service network that reaches customers in more than 91 countries. Moxa delivers lasting business value by empowering industry with reliable networks and sincere service for industrial communications infrastructures. Information about Moxa's solutions is available at www.moxa.com.

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1 Introduction

This document helps engineers conduct a comprehensive evaluation before purchasing the MGate MB3170/MB3270-G2 Series as a replacement for the MGate MB3170/3270. It addresses all aspects of the transition, from dimensions and mounting types to software configurations. We strongly recommend reviewing this guide and considering the MGate MB3170/MB3270-G2 Series as part of the next generation of your comprehensive solution.

2 Appearance, Dimensions, and Mounting Types

When considering upgrading from the MGate MB3170/3270 to the MGate MB3170/3270-G2 Series, you must first determine if the change is because of an application, system, or protocol gateway update.

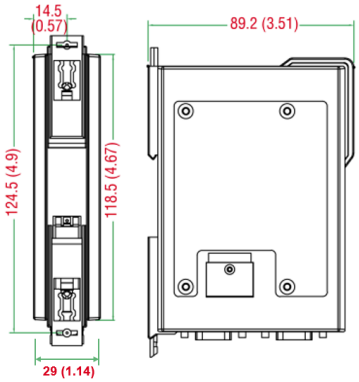
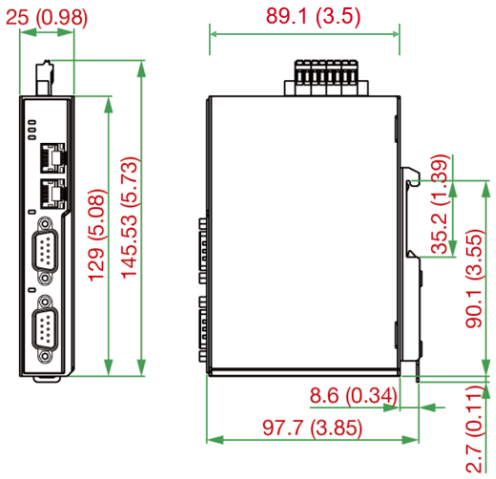
If the change affects the entire system, the specifics of appearance, size, or mounting might be less important since you can adapt to the new system. Find all the information you need to design a new system in Chapter 2.

Conversely, for applications where only the protocol gateway is upgraded, users should note the dimensions and physical interfaces of the MGate MB3170/3270-G2 Series. The refined design of the Gen 2 models, while providing enhanced features, introduces minor changes in external form factors or wiring egress. These differences may necessitate small modifications to specific wiring or cabinet layout. Comprehensive guidance on planning and implementing these modifications is detailed in Chapter 2 to facilitate seamless integration.

2.1 Dimensions

To maximize installation efficiency, we have integrated all essential connection ports onto the front panel. This design enhancement required a minor adjustment, resulting in a slight 10 mm increase in the product's overall height.

Despite this small increase, the new layout significantly improves user-friendliness, especially for serial port wiring. Compared with the MGate MB3170/MB3270 products, which required additional cable clearance for the DB9 connectors on the bottom side of the devices, the MGate MB3170/MB3270-G2 Series remains relatively compact and is easier to install inside a cabinet. The detailed dimensions for both the MGate MB3170/3270 and the MGate MB3170/3270-G2 are:

	MGate MB3170/MB3270	**MGate MB3170-G2/MB3270-G2**
Dimensions	29 x 89.2 x 118.5 mm 	25 x 89.1 x 129 mm (without DIN-rail kit) 

2.2 Appearance

The exterior and physical design of the second-gen protocol gateway have been intentionally and strategically redesigned. These enhancements, detailed in the following sections, address several key differences and focus on three primary areas: Material and Aesthetic Upgrade, Enhanced Usability and Port Layouts, New Interface Configurations, and Enhanced RS-485 Configuration and Flexibility.

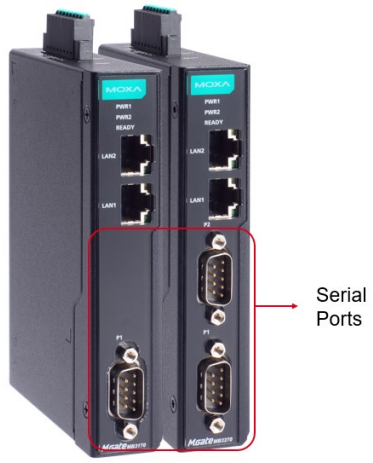
1. **Material and Aesthetic Upgrade**

   The most prominent change is the upgrade of the product enclosure material **from plastic to metal**. This transition serves a dual purpose: it significantly **enhances heat dissipation** for improved performance reliability and establishes a **uniform, consistent industrial aesthetic** across all second-generation protocol gateway models for future alignment.

MGate MB3170/MB3270	MGate MB3170-G2/MB3270-G2
	

2. **Enhanced Usability and Port Layout**

   To optimize ease of installation and field wiring, the **serial port** has been strategically **relocated from the bottom panel to the front-facing panel**. This key change in port placement provides clients with more convenient access during deployment and maintenance.

MGate MB3170/MB3270	MGate MB3170-G2/MB3270-G2
	

3. **New Interface Configurations (External Features)**

   While maintaining the core footprint, the second-generation lineup expands its external connectivity options:

   - **Terminal Block Integration:** We have introduced models featuring a **terminal block** connector on the exterior. This design allows for the **direct connection** of RS-422/485 cables, **removing the necessity of using external adapters**.
   - **SFP Ethernet Model:** To meet the increasing market demand for fiber connectivity, an **SFP (small form-factor pluggable)** model has been added to the Ethernet interface options.

4. **Enhanced RS-485 Configuration and Flexibility**

   A significant operational enhancement in the **MGate MB3170/3270-G2** is the transition from hardware-based configuration to software-selectable control for critical RS-485 parameters.

   In **Generation 1** devices, essential parameters like **Bus Termination Resistors** and **Bias Resistors (Pull-High/Pull-Low)** were configured using internal **DIP switches**. While these switches were accessible through a dedicated access door on the enclosure, the procedure still mandated the use of a **small screwdriver** to open the panel and manipulate the switches manually.

   The **Generation 2** device eliminates this requirement. Users **can** now remotely adjust these essential parameters directly via the device's **Configuration Utility** or web interface. This improvement drastically simplifies field deployment, troubleshooting, and maintenance tasks by **removing the need for physical access** and enabling real-time adjustments, resulting in significantly improved operational efficiency and flexibility.

Refer to the corresponding table/image in the FAQ section in Chapter 5 for comprehensive product compatibility and model mapping. If your specific requirements extend beyond our current offer, feel free to contact us directly.

2.3 Mounting Types

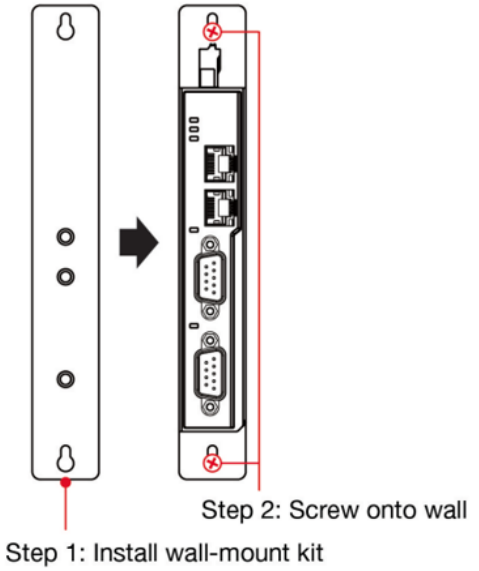
The transition to the MGate MB3170/3270-G2 Series introduces **enhanced flexibility** in product deployment.

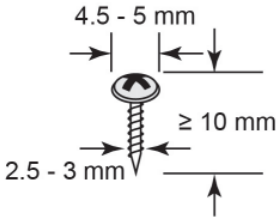
While the MGate MB3170/3270 provided the flexibility of wall-mount installation through an optional accessory kit, the Generation 2 Series elevates this capability significantly.

The G2 mounting components are not only included and readily available but have been re-engineered for superior robustness and long-term stability, ensuring a more secure and durable fit for demanding industrial environments.

- **Wall-mounting Installation:** Refer to the accompanying **installation guide** for detailed instructions on performing a wall-mounted setup.

  Wall or cabinet mounting: Installing wall-mount kit onto the MB3170-G2/MB3270-G2 Series requires three screws.





Refer to the dimensions above. Mounting the MGate MB3170-G2/MB3270-G2 Series on a wall requires two screws. The heads of the screws must be 4.5 to 5 mm in diameter, the shafts must be 2.5 to 3 mm in diameter, and the length of the screws must be over 10 mm.

Important Note:	**The wall-mount kit (WK-178-01) is required for this installation and must be purchased separately.**

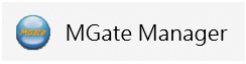
3 Software Transition

Regarding cybersecurity concerns, the MGate MB3170-G2/MB3270-G2 Series only supports Device Search Utility v3.x and later. Moxa developed the next generation of communication protocol between the Device Search Utility v3.x and the MGate MB3170-G2/MB3270-G2 Series. Most of the commands and responses are encrypted to secure communications. If you would like to further cooperate with Moxa about the new communication protocol, contact the sales representative in your region.

The Device Search Utility v3.x also supports the MGate 3000 Series and the MGate MB3170-G2/MB3270-G2 Series. If you want to manage the existing MGate products, we recommend you upgrade the Device Search Utility to version 3.x or later. It supports all the MGate products.

3.1 Device Search Utility

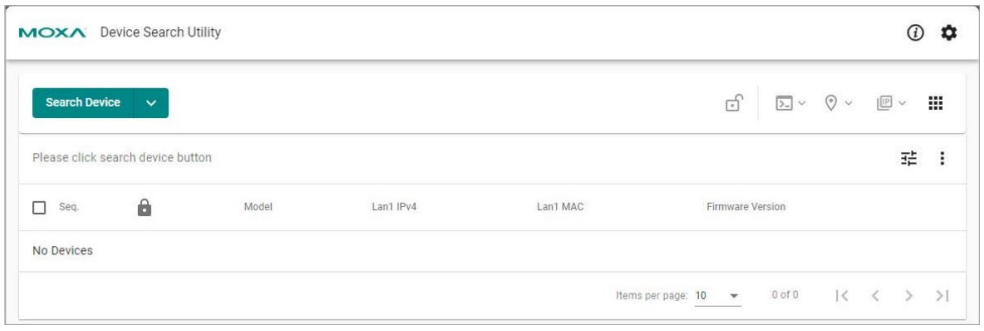
The MGate MB3170-G2/MB3270-G2 Series can only be supported by Device Search Utility v3.x. Be advised that the MGate Manager software will no longer support future updates, including the MGate MB3170-G2 and MGate MB3270-G2 models.



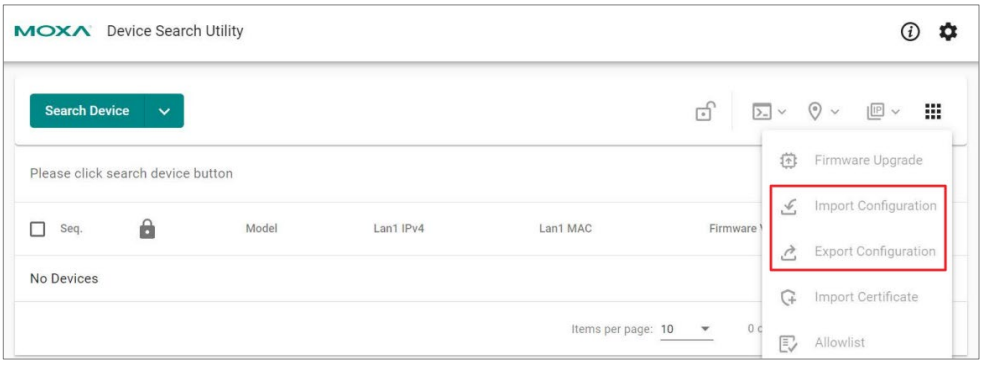
To ensure full and continued support for your latest devices, download the utility from MGate's product support page. The major changes in Device Search Utility v3.x are:

1. Web user interface
2. Supporting import certificates
3. Batch configuration, including import/export configuration, import certificate, firmware update, restart, reset, etc.
4. COM Mapping support
5. Multilingual support
6. Saving the search list to a file

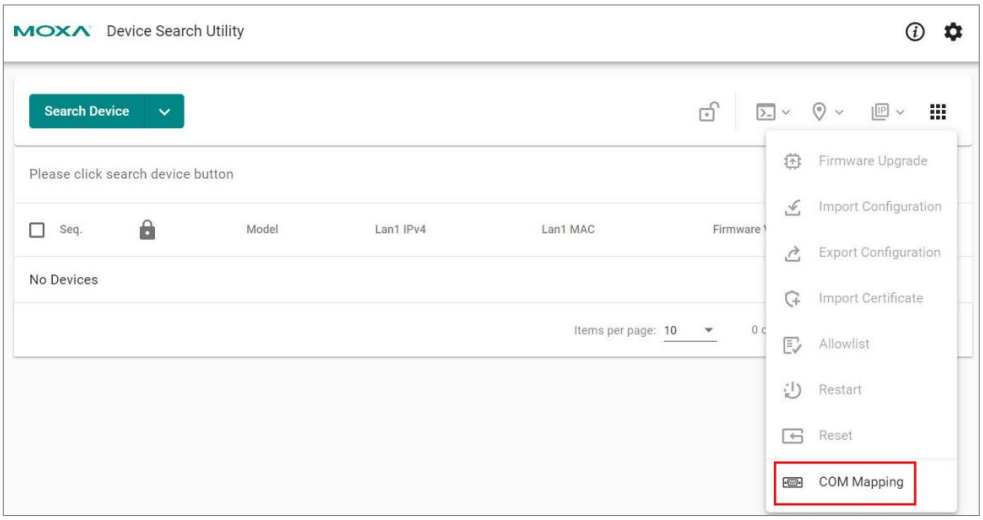
After upgrading to Device Search Utility v3.x, it's easy to find a new web user interface.



Upon execution, Device Search Utility v3.x instantly finds the available MGate protocol gateway on the network. Select the MGate MB3170 or MGate MB3270 devices and export the configuration files. Import them to the MGate MB3170-G2/MB3270-G2 models to complete the configuration transition.



If you want to add the MGate MB3170-G2/MB3270-G2 to the network and map new virtual COM ports, select the COM Mapping function to execute the NPort Windows Driver Manager (introduced in the next section) to complete it.



Refer to the Device Search Utility v3.x User Manual on the MGate's product support page for instructions.

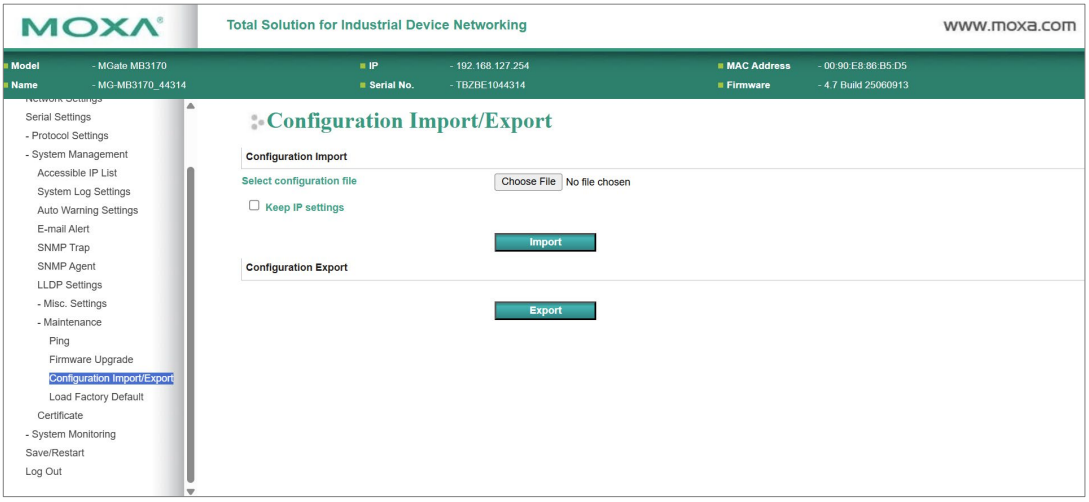
4 Configuration Transition From MGate MB3170/MB3270 to MGate MB3170-G2/MB3270-G2

The MGate MB3170/MB3270 has a notably long product life cycle. Given its extensive history, engineers may not be familiar with every detail of its configuration settings. This unfamiliarity can lead to hesitation when transitioning to the new MGate MB3170-G2/MB3270-G2 Series, as engineers might be concerned about replicating the settings of the original MGate MB3170/MB3270.

To address this issue, the MGate MB3170-G2/MB3270-G2 Series offers a solution by allowing engineers to directly import configuration files from the MGate MB3170/MB3270 Series. This feature facilitates the seamless transfer of existing settings from the MGate MB3170/MB3270 to the new MGate MB3170-G2/MB3270-G2 Series.

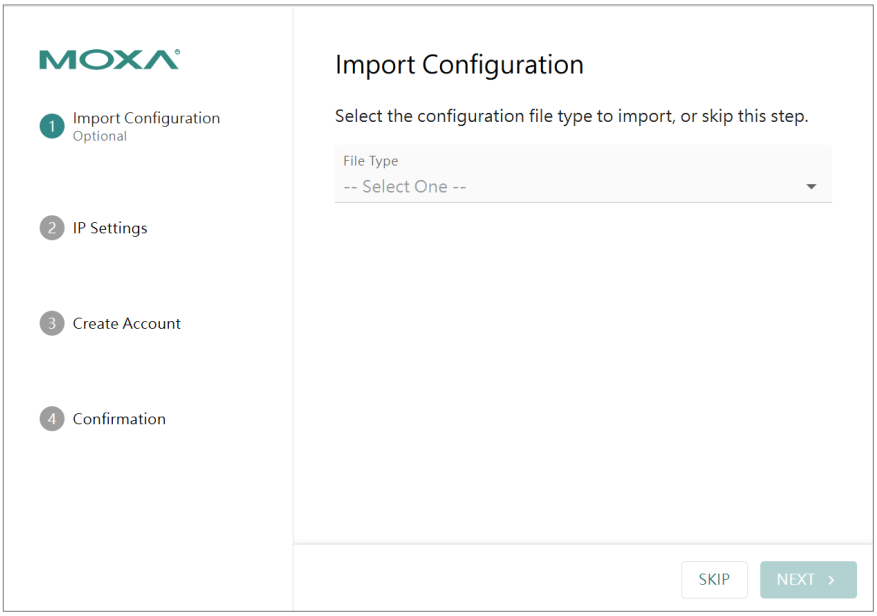
4.1 Export Configuration File From MGate MB3170/MB3270

Log in to the web console of the MGate MB3170/MB3270 and navigate to the **System Management > Maintenance > Configuration Import/Export** page. Click the export button.

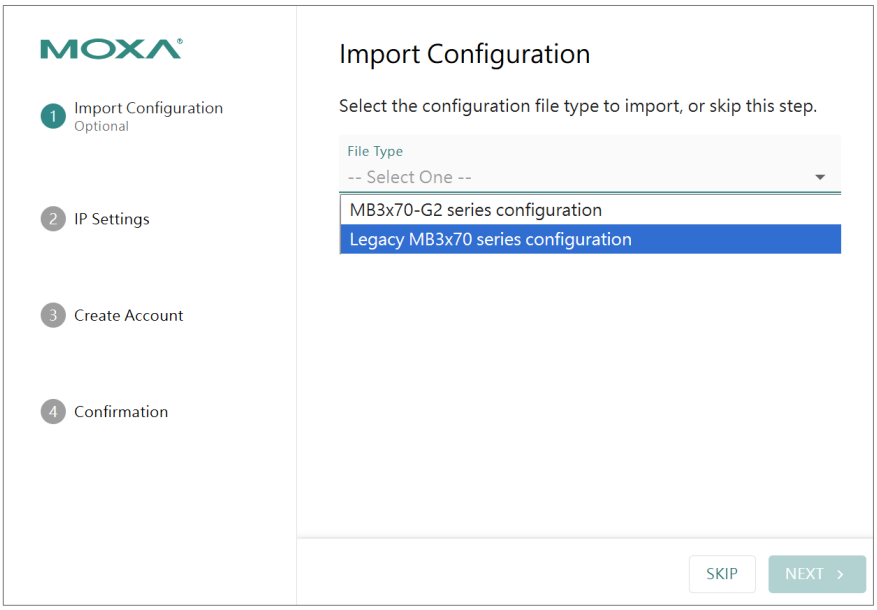


4.2 Import Configuration File to the MGate MB3170-G2/MB3270-G2

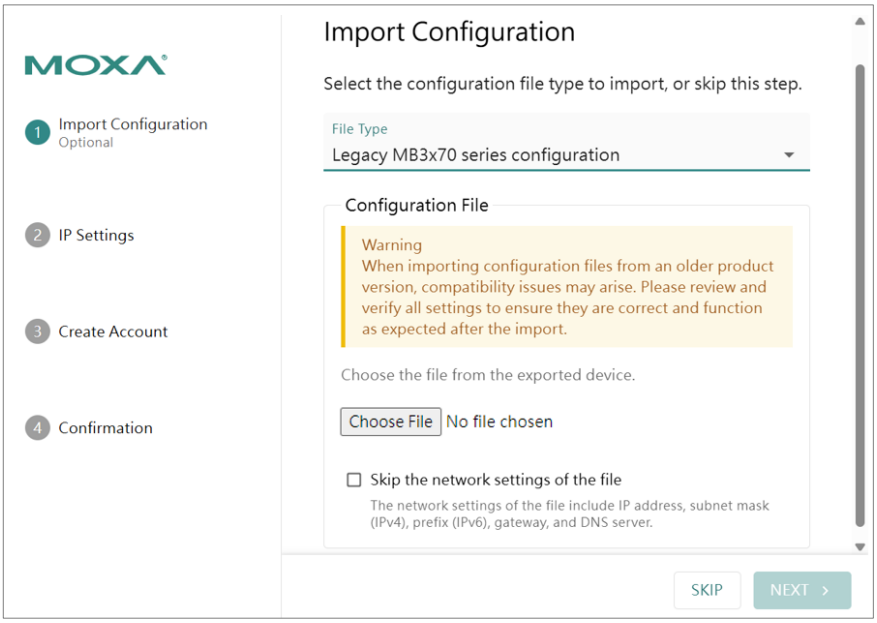
When you log into the web console of the MGate MB3170-G2/MB3270-G2 for the first time by entering **https://192.168.127.254**, you will trigger the first-time login process. The first step is to prompt you to import an existing configuration file.



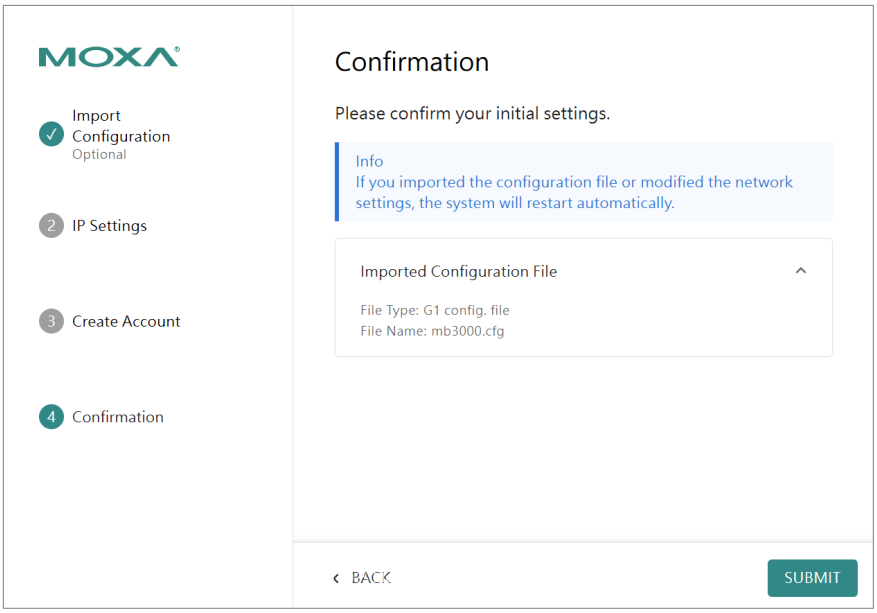
Select the **File Type > legacy MB3x70 series configuration** to display the advanced options.



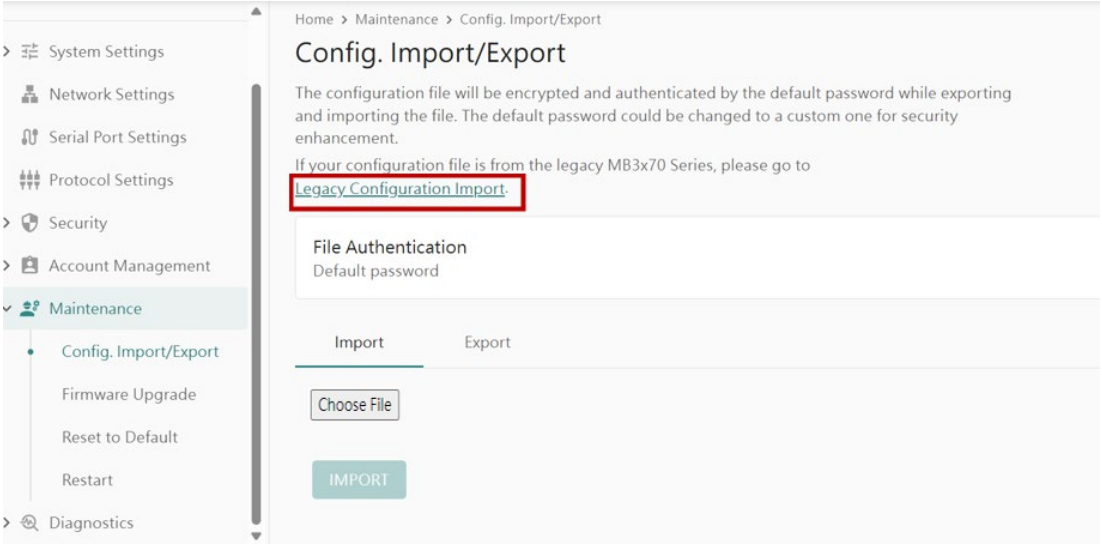
Select the **Choose File** button to select the configuration file from the MGate MB3170-G2/MB3270-G2. Select the **NEXT** button.



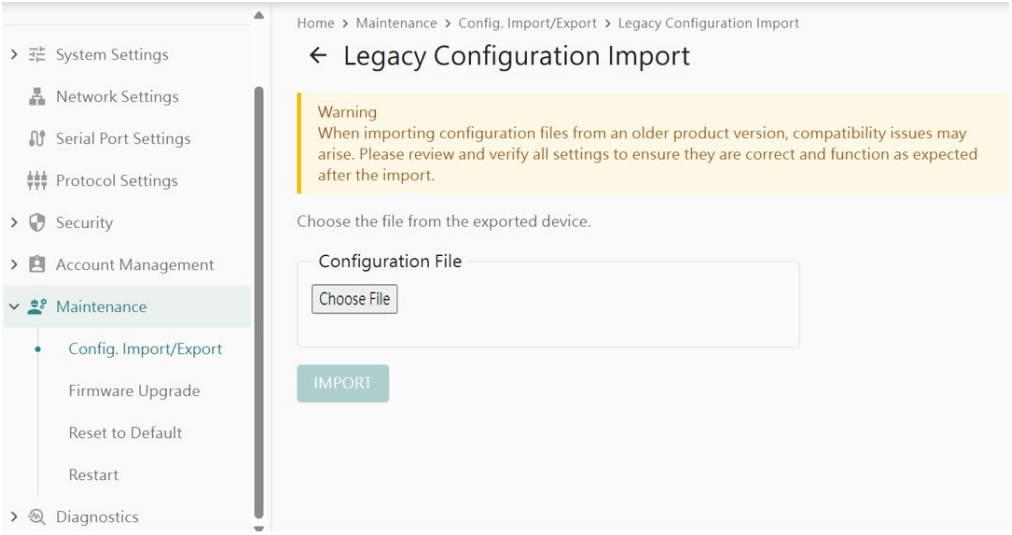
Select the **SUBMIT** button. The device will import the configuration file and restart itself. The configuration settings will be imported after the process.



If you missed the first-time login process, you could still log in to the web console and navigate to **Maintenance > Config. Import/Export**. Locate the **Legacy Configuration Import** function and click the hyperlink.



Select the **Choose File** button to select the configuration file from the MGate MB3170-G2/MB3270-G2. Select the **IMPORT** button to replicate the configuration settings.



5 Frequently Asked Questions

5.1 Why some configurations may not be imported from the MGate MB3170/MB3270 to the MGate MB3170-G2/MB3270-G2

Note the critical constraint regarding configuration file migration between product generations:

- Configuration files from **1-port devices** are compatible only with their corresponding **second-generation 1-port variants**.
- Similarly, configuration files from **2-port devices** are restricted to their corresponding **second-generation 2-port variants**.

Cross-migration of configuration files (e.g., 1-port configuration to a 2-port device) is not recommended as it will cause an incomplete import of the settings.

5.2 What's the model mapping from Generation 1 to Generation 2?

No. of ports	G1 Model	G2 Successor Model	Note
1 Serial Port	MGate MB3170	MGate MB3170-G2	
	MGate MB3170-T	MGate MB3170-G2-T	
	MGate MB3170I	MGate MB3170I-G2	
	MGate MB3170I-T	MGate MB3170I-G2-T	
	MGate MB3170-S-SC	MGate MB3170-S-SC-G2	
	MGate MB3170-S-SC-T	MGate MB3170-S-SC-G2-T	
	MGate MB3170I-S-SC	N/A	Please contact Moxa to discuss potential options and feasible approaches.
	MGate MB3170I-S-SC-T	N/A	
	MGate MB3170-M-SC	MGate MB3170-M-SC-G2	
	MGate MB3170-M-SC-T	MGate MB3170-M-SC-G2-T	
	MGate MB3170I-M-SC	N/A	Please contact Moxa to discuss potential options and feasible approaches.
	MGate MB3170I-M-SC-T	N/A	
	MGate MB3170-M-ST	MGate MB3170-M-ST-G2	
	MGate MB3170-M-ST-T	MGate MB3170-M-ST-G2-T	
	N/A	**NEW:** MGate MB3170-SFP-G2	Fully support Moxa 1-port Fast Ethernet SFP module SFP-1FE Series: ➢ SFP-1FEMLC-T: multi-mode, LC connector ➢ SFP-1FESLC-T: single-mode, LC connector ➢ SFP-1FELLC-T: single-mode, LC connector
	N/A	**NEW:** MGate MB3170-SFP-G2-T	
2 serial port	MGate MB3270	MGate MB3270-G2	
		NEW: MGate MB3270-TB-G2	
	MGate MB3270-T	MGate MB3270-G2-T	
		NEW: MGate MB3270-TB-G2-T	
	MGate MB3270I	MGate MB3270I-G2	
		NEW: MGate MB3270I-TB-G2	
	MGate MB3270I-T	MGate MB3270I-G2-T	
		NEW: MGate MB3270I-TB-G2-T	

Besides the DB9 serial connector for the serial port, support for a terminal block serial connector(-TB) has now been added.