




AutomationDirect Startup Guide



The documentation, best practices, and recommendations provided by READY Robotics do NOT constitute safety advice. Products sold through READY Robotics are not by themselves a fully integrated workcell. As required in ISO 10218-2, READY Robotics strongly recommends performing a complete risk assessment of the integrated workcell per ISO 12100. You may wish to use the methodology found in the ANSI/RIA TR R15.306 Task-based Risk Assessment Methodology.

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OVERVIEW

AutomationDirect Productivity Series 2000 PLCs are powerful devices for automating robotic cells.

This guide walks you through how to configure an AutomationDirect PLC in Productivity Suite and Forge/OS.

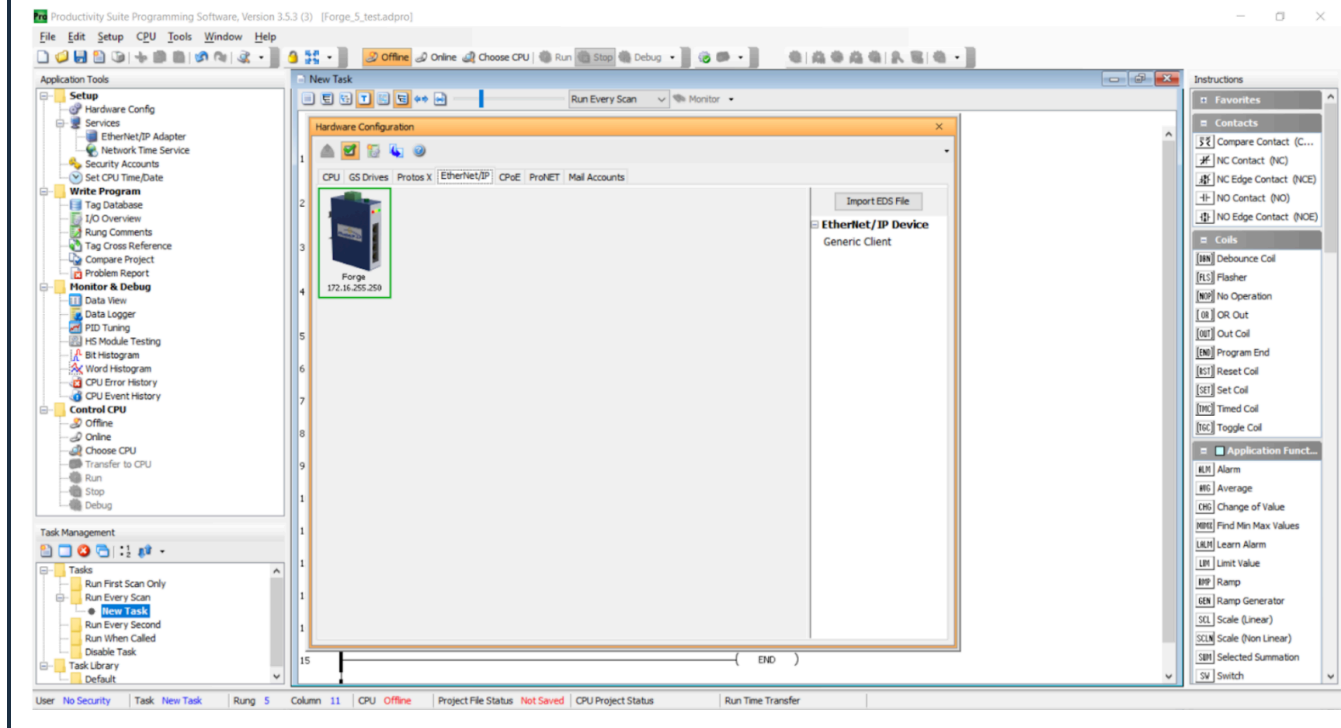
Let's get started!



CONFIGURING THE PLC IN PRODUCTIVITY SUITE

This section assumes that you have Productivity Suite installed on a computer.

- 1 Open Hardware Configuration and create a new Ethernet/IP Generic Client.



2 Add the Forge connection parameters and PLC Structures.

a At the top of the pop-up and in the **T->O (INPUT)** tab, fill in these values:

EtherNet/IP Client Properties

Use Structure Forge_EIP_Conn ...

Device Name

Ethernet Port CPU-ETH-Ext

IP Address

TCP Port Number

Close unused CIP Session after secs

Swap Byte Order

+ **MSG(1) [I/O]**

Enable Msg1Enable ...

Enable Routing Slot Number

Connection Online Msg1ConnOnline ...

General Status Msg1GenStatus ...

Extended Status ...

Status Description Msg1StatusDesc ...

T->O (INPUT) | O->T (OUTPUT) | CONFIG DATA

Target To Originator (INPUT) Data

Delivery Option Unicast

RPI Time (msec)

Assembly Instance/Connection Point (0x64)

Message Size from Array (bytes)

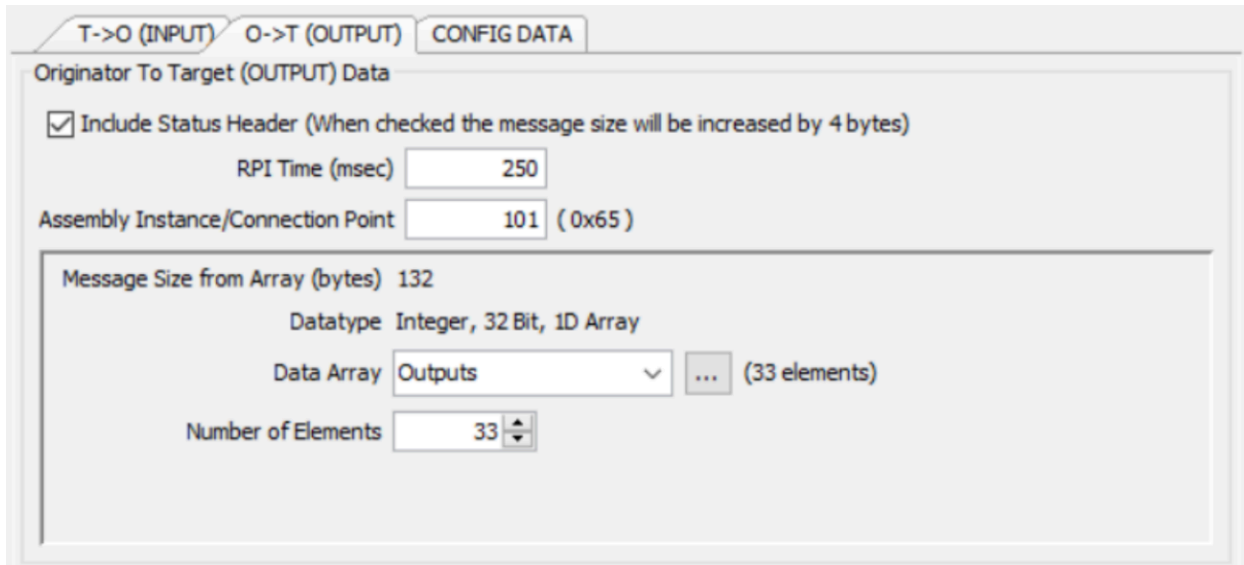
Datatype Integer, 32 Bit, 1D Array

Data Array Inputs ... (33 elements)

Number of Elements

Monitor OK Cancel Help

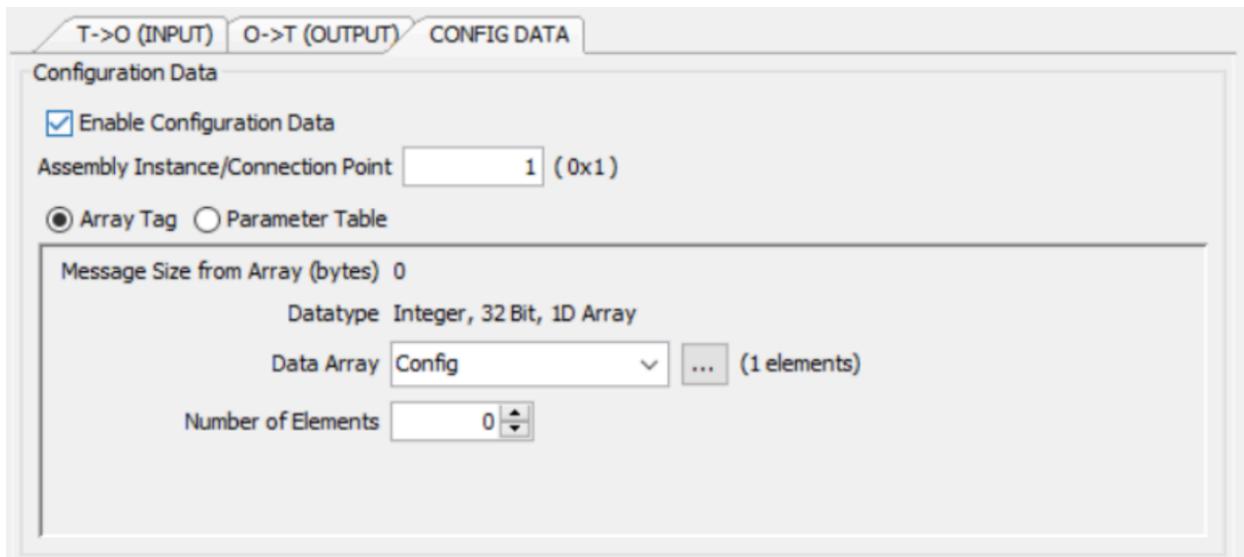
b In the **O->T (OUTPUT)** tab, fill in these values:



The screenshot shows the 'O->T (OUTPUT)' configuration tab. It includes the following fields and settings:

- Originator To Target (OUTPUT) Data**
 - Include Status Header (When checked the message size will be increased by 4 bytes)
 - RPI Time (msec):
 - Assembly Instance/Connection Point: (0x65)
- Message Size from Array (bytes)**:
 - Datatype: Integer, 32 Bit, 1D Array
 - Data Array: (33 elements)
 - Number of Elements:

c In the **CONFIG DATA** tab, fill in these values:



The screenshot shows the 'CONFIG DATA' configuration tab. It includes the following fields and settings:

- Configuration Data**
 - Enable Configuration Data
 - Assembly Instance/Connection Point: (0x1)
 - Array Tag Parameter Table
- Message Size from Array (bytes)**:
 - Datatype: Integer, 32 Bit, 1D Array
 - Data Array: (1 elements)
 - Number of Elements:

3 Toggle the enable bit high in the program to start the connection.

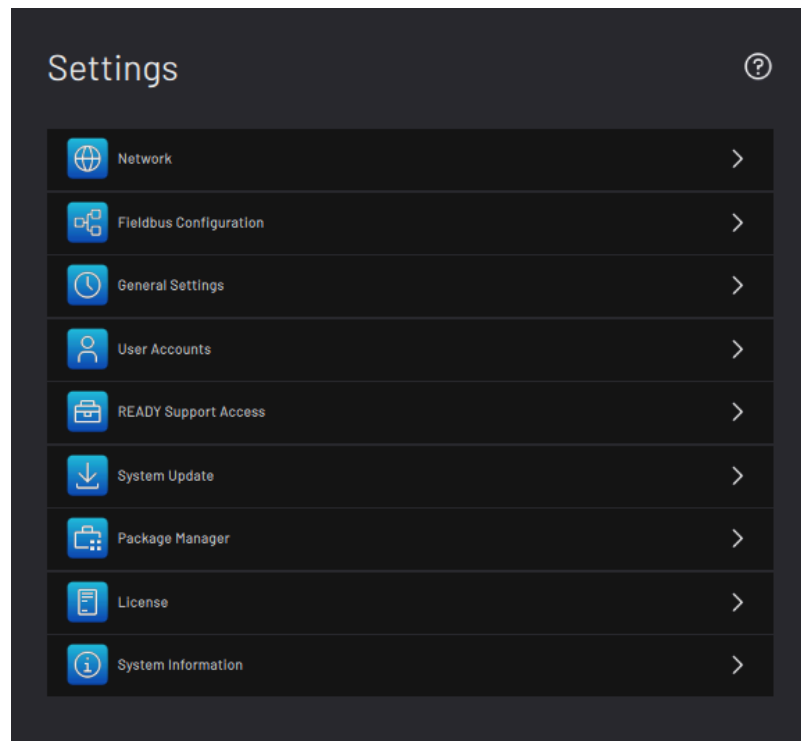
4 Use the created data structure in the user program to send and receive data over Ethernet/IP.

CONFIGURING THE PLC IN FORGE/OS

Once the PLC is configured in Productivity Suite, you can add it in Forge/OS.

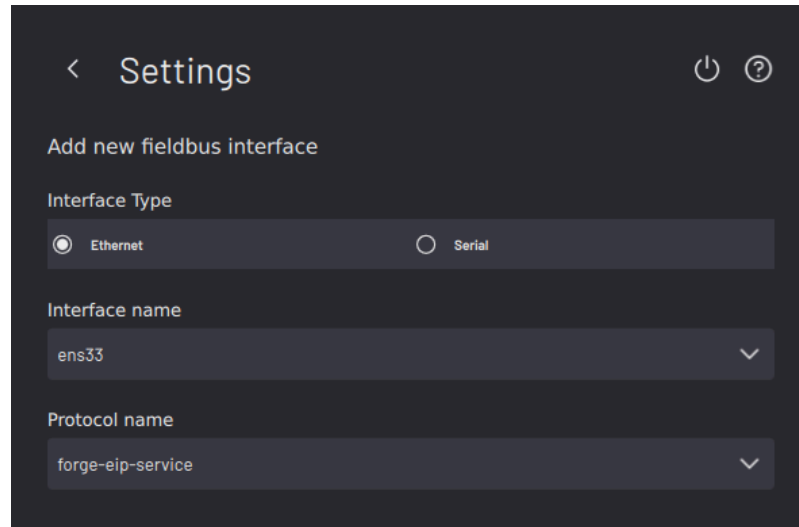
1 Follow these substeps to add an Ethernet/IP fieldbus interface.

a In the **Settings App**, tap **Fieldbus Configuration**.

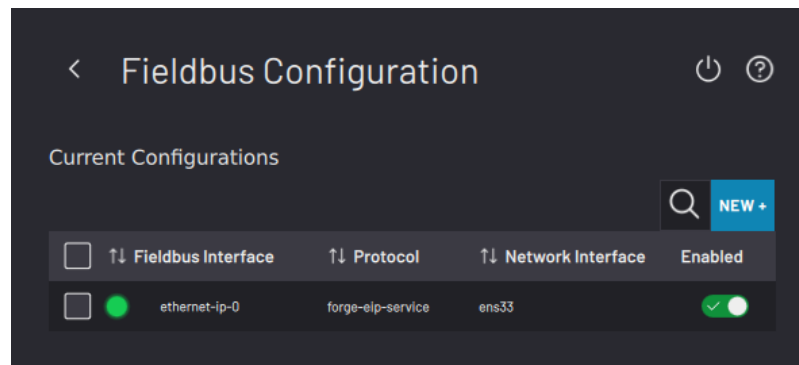


b Tap **NEW +** to create a new fieldbus configuration.

c Create an interface with a type of **Ethernet**.

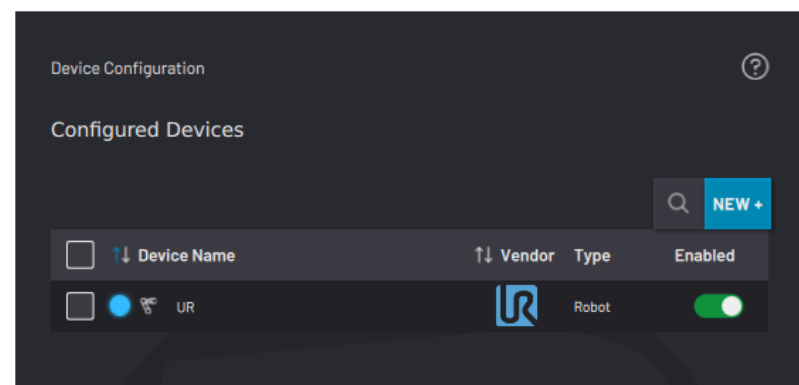


d Tap **SAVE**. Make sure that the new Ethernet/IP fieldbus interface appears in the list of current configurations and is enabled.



2 In the Forge/OS **Device Configuration** app, follow these substeps:

a Tap **NEW+**.



b Select **EtherNet/IP Forge/OS Adapter** (Network device type).

Device Library

Filter by

Network

1 item(s) selected Cancel

Device Name	Vendor	Type	Version
<input checked="" type="radio"/> EtherNet/IP Forge/OS adapter		Network	1.1.0
<input type="radio"/> EtherNet/IP Forge/OS device		Network	1.1.0
<input type="radio"/> EtherNet/IP Generic Device		Network	1.3.0
<input type="radio"/> Modbus TCP Generic Device		Network	1.1.0
<input type="radio"/> Rockwell Automation Logix PAC		Network	1.0.0
<input type="radio"/> Teknic ClearLink 4-13 Ethernet/IP Motion Controller		Network	1.0.0

- c Give the device a name, select the Ethernet/IP fieldbus interface that you created at the beginning of this section, and tap **NEXT**.

EtherNet/IP Forge/OS adapter ?

Device Name

 *

Description

Fieldbus Interface

ethernet-ip-0
▼

 *

Fieldbus Interfaces are configured in the Settings App

Runtime Fault on Device Error

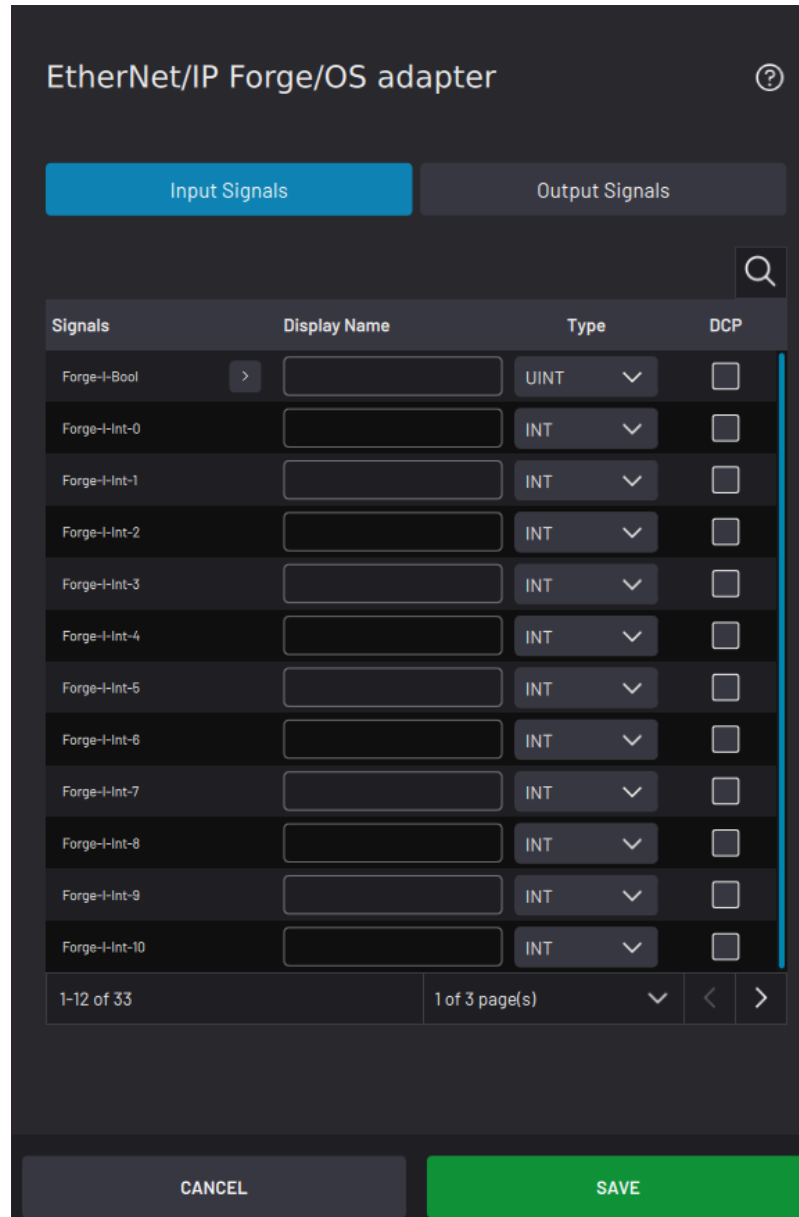
Name	Assembly Instance	Size	Data Type Size
Input	100	33	32-bit
Output	101	33	32-bit
Config	1	0	Unknown

* Required Field

CANCEL

NEXT

d Configure any **Input/Output (I/O)** signals that you want to view in the Device Control app.



e Tap **SAVE**.