

# Product Release Notice

# KINGSTAR 4.5.1

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## General Availability Release Date

September 30, 2024

## Product Overview

KINGSTAR is an all-software, complete “plug-and-play” PC-based Machine Automation platform for IoT and Industry 4.0. Key pre-tested and pre-integrated industrial machine components include software-based motion control, machine vision, programmable logic controller (PLC) and the industry’s only plug-and-play EtherCAT master that auto-discovers any vendor’s EtherCAT drive, IO or device and auto-configures the EtherCAT environment at startup. Built on the EtherCAT standard and supported by a real-time 64-bit Windows operating-system (RTOS) from IntervalZero, KINGSTAR empowers engineers to design, develop and integrate machine control applications or a system of controllers on a single Industrial PC. The KINGSTAR platform can replace all hardware with software-only motion controllers and machine vision positioning systems quickly and cost-effectively.

KINGSTAR version 4.5.1 allows developers to select only the functionality they need. KINGSTAR’s flexibility is provided through feature packages that allow you to grow your product at any time by adding functionality to the existing KINGSTAR Runtime.

KINGSTAR Runtime feature packages:

- Core packages for: 1, 2, 3 or 7 KINGSTAR cores
- Motion Packages for: Point to Point, Synchronization, Blending, and Kinematics
- Axis Packages for: 8, 16, 32 or unlimited axis
- High Speed Timer
- Multiple Masters
- Hot Connect
- Cable Redundancy
- Programmable Logic Controller (PLC)

# New Features & Updates

## Hardware

- Adds support for safety tags in the Mitsubishi FSoE function. [KS-5553]
- Adds new supported hardware:
  - I/O modules
    - Beckhoff: EL6910 [KS-5558]
  - Couplers
    - Weidmueller: UR20-4COM-IO-LINK [KS-5557]

## APIs

- Adds featureDcShift to KsFeature, which allows users to change the DC shift time at PreOp. This enables users to offset the Sync0 signal to synchronize it with an external source. [KS-5545]
- Adds featureSyncMultiMaster to KsFeature, which allows multiple masters to use the same transmit timer to trigger packets. [KS-5544]
- Adds featureBulkSynchronization to KsFeature, which allows users to enable or disable sending extra packets every HAL timer period to improve clock synchronization during startup. [KS-5543]

## Tools

- Configuration Tool:
  - Adds support for displaying the Explicit ID value. [KS-5556]
  - Adds support for configuring virtual axis resolution. [KS-5555]
  - Adds support for SDO byte array read/write. [KS-5554]
- Control Panel:
  - Adds a feature that displays a warning message on the Control Panel if the Subsystem is not booted from the RTX64 boot configuration. This message instructs users to configure the RTSS boot configuration through the **Activation Utility** on the **Control Panel**. [KS-5552]

# Issues Resolved

## Hardware

- Resolves an issue where one of the outputs of Leadshine drives fail to control the connected motor. [KS-5564]
- Resolves an issue where the EtherCAT communication fails when working with the OMRON NX-ECC module and devices with different PDO lengths. [KS-5567]

## APIs

- Resolves an issue where AddModuleConfiguration fails to support hardware devices within an ESI file cloned using the ESI Import Tool. [KS-5603]
- Resolves an issue where using ReadAxisInputByte and ReadAxisInputbit would cause an exception. [KS-5560]
- Resolves an issue in ReadMemoryByte where it fails to return an error code when the read value is outside the valid range. [KS-5562]
- Resolves an issue where GetCommandStatus may randomly read an invalid KsCommandStatus value. [KS-5540]
- Resolved an issue where SetAxisCamSwitch consistently returns errVariableUnavailable when McOutput is an axis output. [KS-5541]

## Tools

- Resolves an issue in the ESI Import Tool that causes a crash when canceling the addition of an entry. [KS-5580]
- Resolves an issue in the Diagnostic Tool where the topology view would disappear when the secondary cable for redundancy was disconnected. This issue appeared on the Omron GX-JC06. [KS-5542]

## Install

- Resolves an issue where the system failed to perform direct upgrades between KINGSTAR version 4.4.1 and 4.5. Users can now upgrade to 4.5.1 without uninstalling the previous version. [KS-5602]

## Availability

KINGSTAR 4.5.1 is available beginning September 30, 2024 through Partners and by contacting Sales: [sales@intervalzero.com](mailto:sales@intervalzero.com).

We look forward to any comments and feedback. If you have any recommendations, or wish to suggest any product enhancements, please contact Product Management at: [productmanagement@intervalzero.com](mailto:productmanagement@intervalzero.com).