

# KINGSTAR 3.1.1

## SOFT PLC RUNTIME INSTALLATION AND USER GUIDE

KS-DOC-x64-0021-R1

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# KINGSTAR Soft PLC Runtime

KINGSTAR Soft PLC Runtime runs the PLC program created in ISaGRAF Workbench. KINGSTAR Soft PLC Runtime and ISaGRAF Workbench can be installed on different computer, because ISaGRAF Workbench can send the program to KINGSTAR Soft PLC Runtime over a network.

To install and use KINGSTAR Soft PLC Runtime, see these sections:

- **Install KINGSTAR Soft PLC Runtime** – The step-by-step tutorial about how to install KINGSTAR Soft PLC Runtime.
- **KINGSTAR Soft PLC Runtime user interface** – The user interface of KINGSTAR Soft PLC Runtime.
- **Work with KINGSTAR Soft PLC Runtime**

Describes how to use KINGSTAR Soft PLC Runtime to run your PLC program.

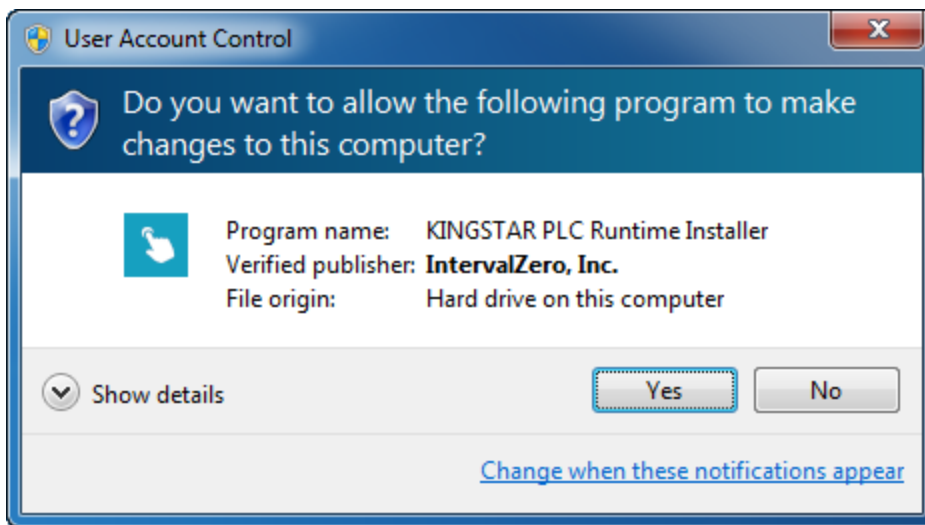
- **Settings** – Before using KINGSTAR Soft PLC Runtime, you need to change some settings.
  - **Run the PLC program** – Runs the PLC program.
  - **Select a processor core to run the KINGSTAR subsystem (optional)** – If you want KINGSTAR Soft Motion to run on a specific processor core, you can assign the core here.
  - **Work with KINGSTAR Soft PLC Runtime** – Exits KINGSTAR Soft PLC Runtime.
- **Uninstall KINGSTAR Soft PLC Runtime** – The step-by-step tutorial about how to uninstall KINGSTAR Soft PLC Runtime.

# Install KINGSTAR Soft PLC Runtime

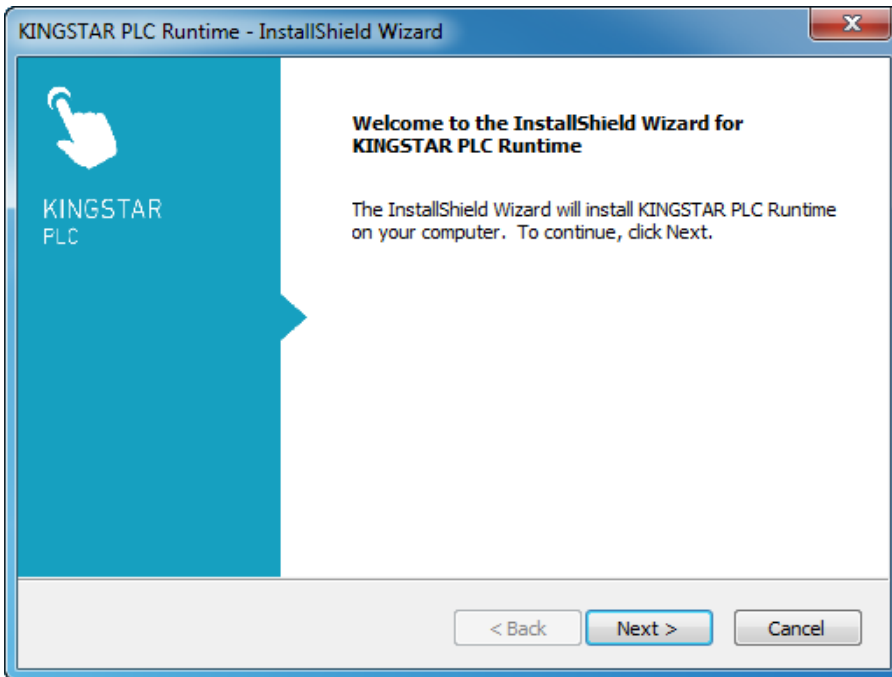
After purchasing KINGSTAR Soft PLC Runtime, you will receive an email confirmation that includes the activation key and a link to the KINGSTAR Soft PLC Runtime download page. After downloading KINGSTAR Soft PLC Runtime, complete the steps that follow to install it.

1. Make sure you have installed KINGSTAR Soft Motion. You need it to run KINGSTAR Soft PLC Runtime.
2. Double-click `KINGSTARPLCRuntimeInstaller.exe`.

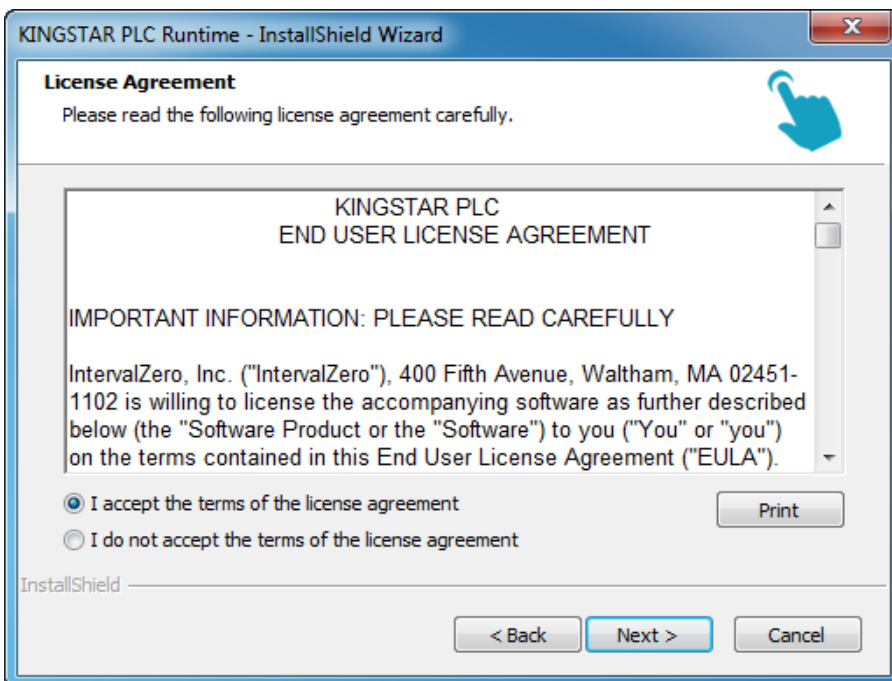
**NOTE:** You must have administrator permission to install KINGSTAR Soft PLC Runtime. Before the installation begins, the **User Account Control** dialog box may ask if you want the installer to make changes to your computer. Click **Yes** to continue the installation.



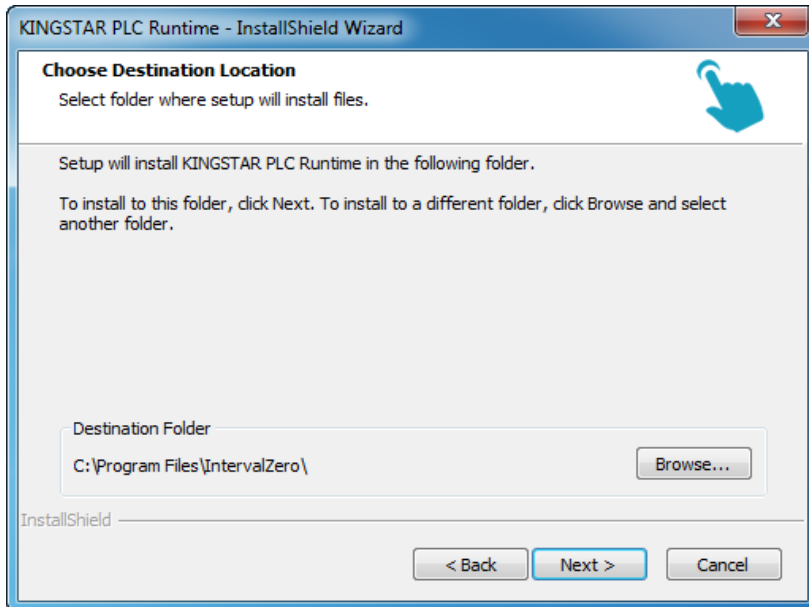
3. In the **KINGSTAR PLC Runtime - InstallShield Wizard** dialog box, click **Next** to begin the installation.



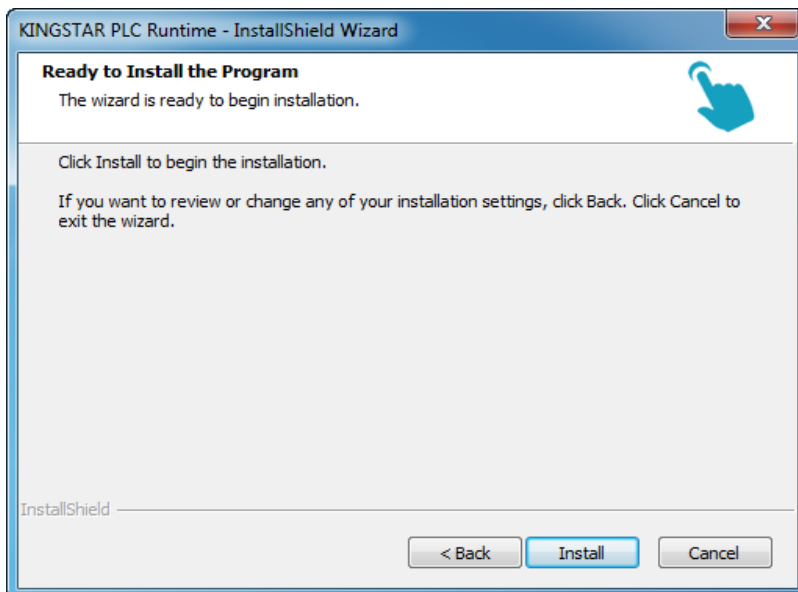
4. Read the End User License Agreement, select **I accept the terms of the license agreement** and click **Next**.



5. Choose the location you want to install KINGSTAR Soft PLC Runtime. You can accept the default installation path, or click **Browse** to choose a different location. When you finished, click **Next**.

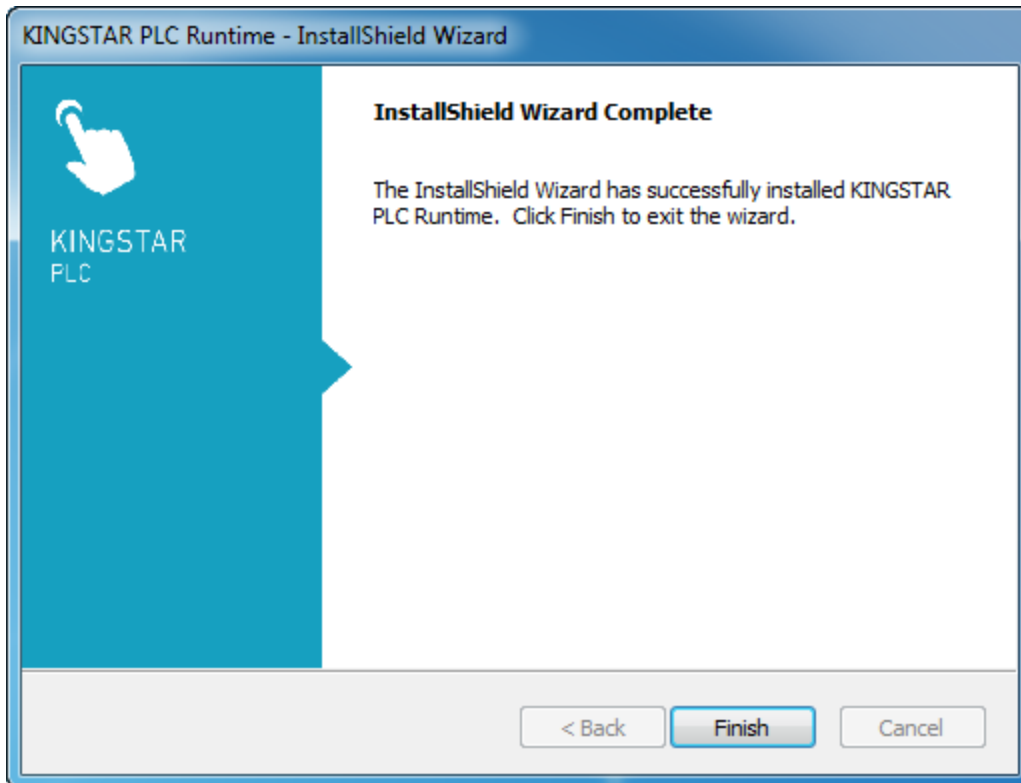


6. Click **Install** to install KINGSTAR Soft PLC Runtime.



7. After completing the installation, click **Finish** to close the wizard. For more information about activating your KINGSTAR Soft PLC Runtime components, see *Activate and configure KINGSTAR*.

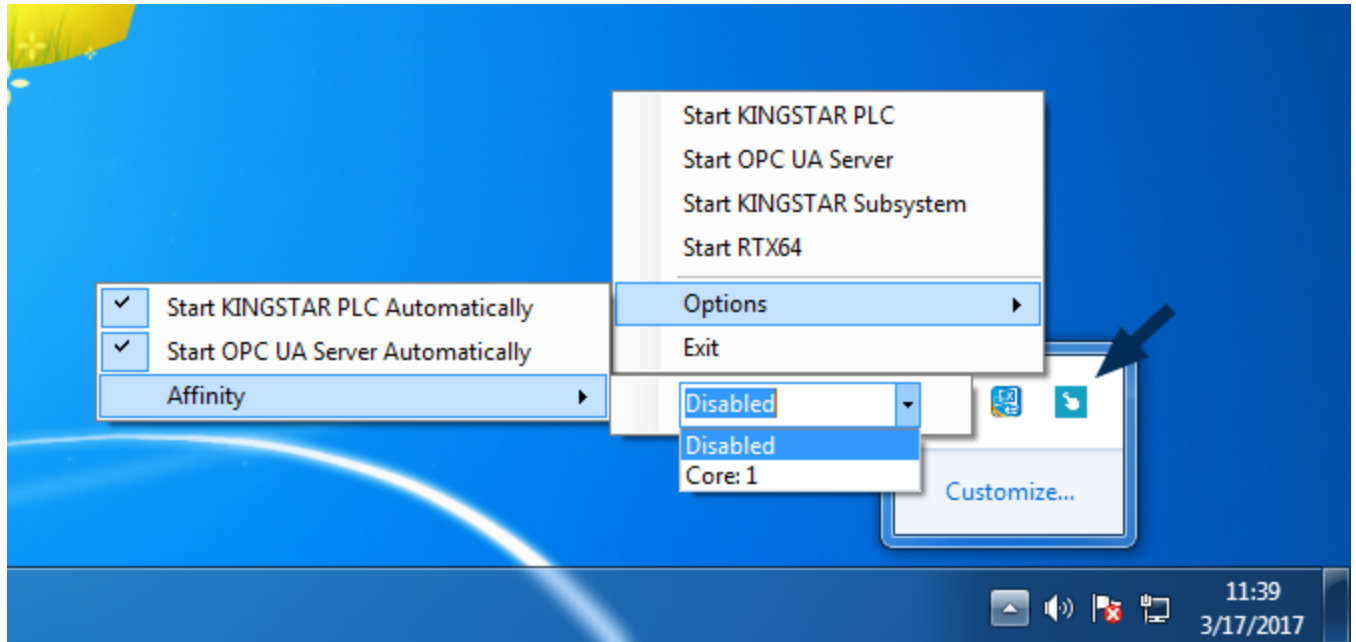
**NOTE:** KINGSTAR Soft PLC Runtime and ISaGRAF Workbench can be installed on different computers, but the computer that runs KINGSTAR Soft PLC Runtime must have KINGSTAR Soft Motion Runtime installed.





# KINGSTAR Soft PLC Runtime user interface

KINGSTAR Soft PLC Runtime resides in the notification area. Right-click its icon to see the menu.



**Start KINGSTAR PLC:** Starts or stops KINGSTAR Soft PLC Runtime manually. It displays **Stop KINGSTAR PLC** after you start it. To run a PLC program, the KINGSTAR Soft PLC Runtime must be started. By default, it is started.

**Start OPC UA Server:** Starts or stops OPC UA Server manually. It displays **Stop OPC UA Server** after you start it. To use ScanBus in ISaGRAF Workbench, the OPC UA Server must be started. For more information about ScanBus, see [Automatically add devices in Work with ISaGRAF Workbench](#). By default, it is stopped.

**Start KINGSTAR Subsystem:** Starts the KINGSTAR Subsystem. When KINGSTAR Soft PLC Runtime is started, this option appears dimmed. By default, it is stopped.

**Start RTX64:** Starts RTX64. When KINGSTAR Soft PLC Runtime is started, this option appears dimmed. By default, it is started.

## Options

**Start KINGSTAR PLC Automatically:** Starts KINGSTAR Soft PLC Runtime automatically next time you start KINGSTAR Soft PLC Runtime. By default, it is enabled.

**Start OPC UA Server Automatically:** Starts OPC UA Server automatically next time you start KINGSTAR Soft PLC Runtime. By default, it is enabled.

**Affinity:** Assigns a processor core to run the KINGSTAR Subsystem. When KINGSTAR Soft PLC Runtime is started, this option appears dimmed. By default, it is disabled.

If you change the setting and exit KINGSTAR Soft PLC Runtime, Windows will record the change, which takes effect next time you start KINGSTAR Soft PLC Runtime.

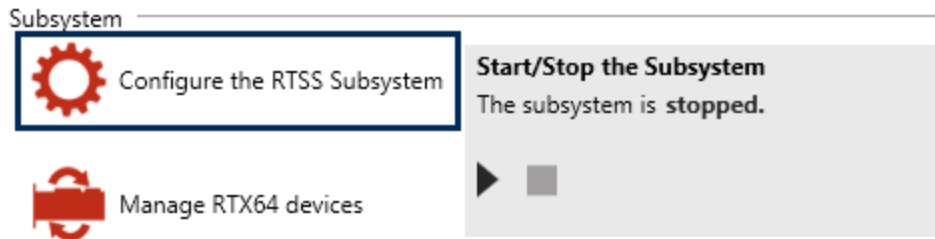
# Work with KINGSTAR Soft PLC Runtime

KINGSTAR Soft PLC Runtime is simple and easy to use. The following steps are required to configure and run the KINGSTAR Soft PLC Runtime.

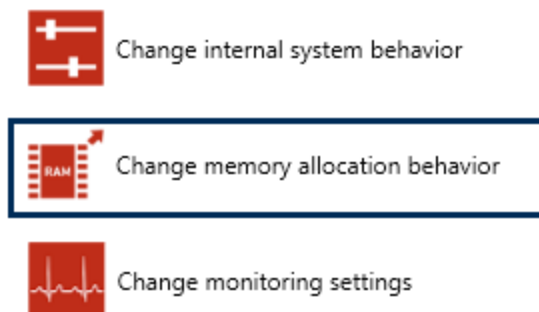
## Settings

You need to change the following settings before using KINGSTAR Soft PLC Runtime.

1. Click **Start > All Programs > RTX64 3.1 Runtime > Control Panel**.
2. In the **Subsystem** area, click **Configure the RTSS Subsystem**.



3. Click **Change memory allocation behavior**.



4. Click **Request from local memory pool (deterministic)**, and select the **Auto expand** check box.

**IMPORTANT:** You must change these settings before using KINGSTAR Soft PLC


Runtime, or a blue screen will occur when exiting KINGSTAR Soft PLC Runtime.

Set the default behavior for Subsystem and application memory allocation:


Request from Windows (non-deterministic)

Request from local memory pool (deterministic)

Customize the initial size of the RTX64 local memory pool, and choose whether to have it automatically expand.

Local memory pool size (kilobytes): 64  6218049

Auto expand

Expand size (kilobytes): 64  6218049

Auto Shrink

## Run the PLC program

To run your PLC program, you need to download it to the KINGSTAR Soft PLC Runtime folder. For more information about how to download and run the PLC program, see [Compile, download and run the programs in Work with ISaGRAF Workbench](#).

By default, KINGSTAR Soft PLC Runtime will be running automatically after you install it. After you download the PLC program, KINGSTAR Soft PLC Runtime will run your program automatically. For more information about how to start and stop KINGSTAR Soft PLC Runtime, see [KINGSTAR Soft PLC Runtime user interface](#).

Every time you start KINGSTAR Soft PLC Runtime, it automatically runs the program you downloaded last time. If you want to run a different program, you need to delete the existed files and download another program. For more information about how to delete files, see [Delete the downloaded files in Work with ISaGRAF Workbench](#).

## Select a processor core to run the KINGSTAR subsystem

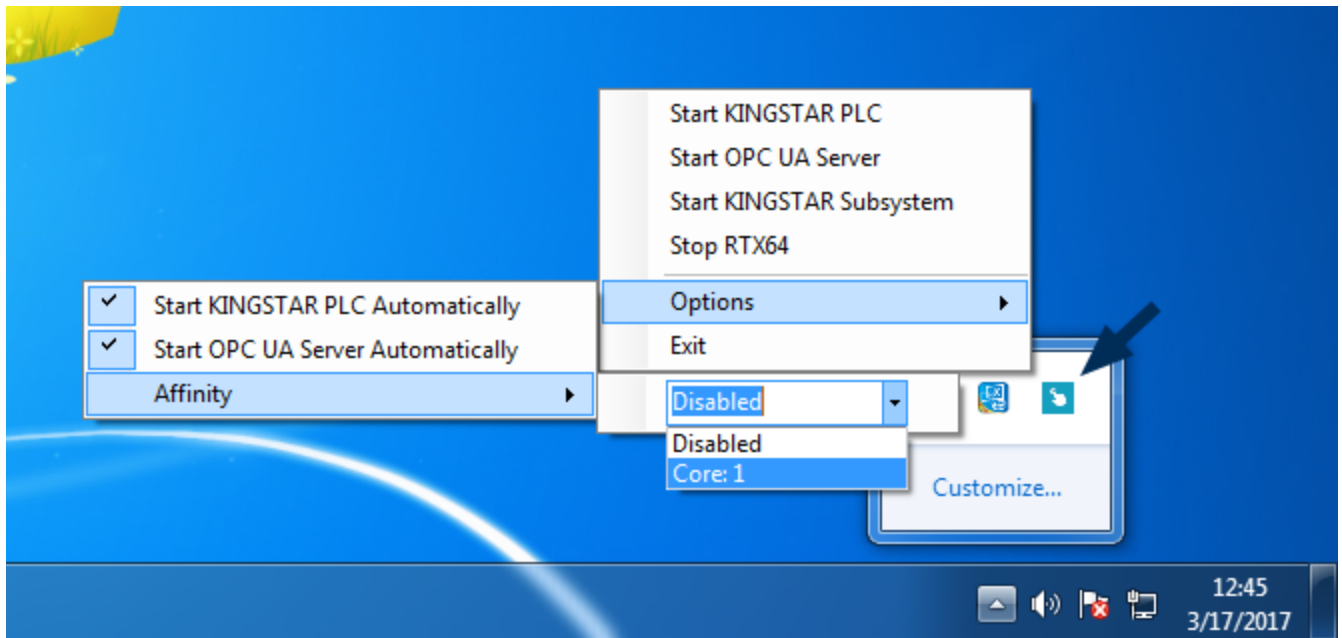
You can assign a processor core to run the KINGSTAR Subsystem through KINGSTAR Soft PLC Runtime. To assign a core:

1. In the notification area, click **Show hidden icons**, and right-click the KINGSTAR Soft PLC Runtime icon.

- In the shortcut menu, click **Stop KINGSTAR PLC** and **Stop KINGSTAR Subsystem** if they are running.

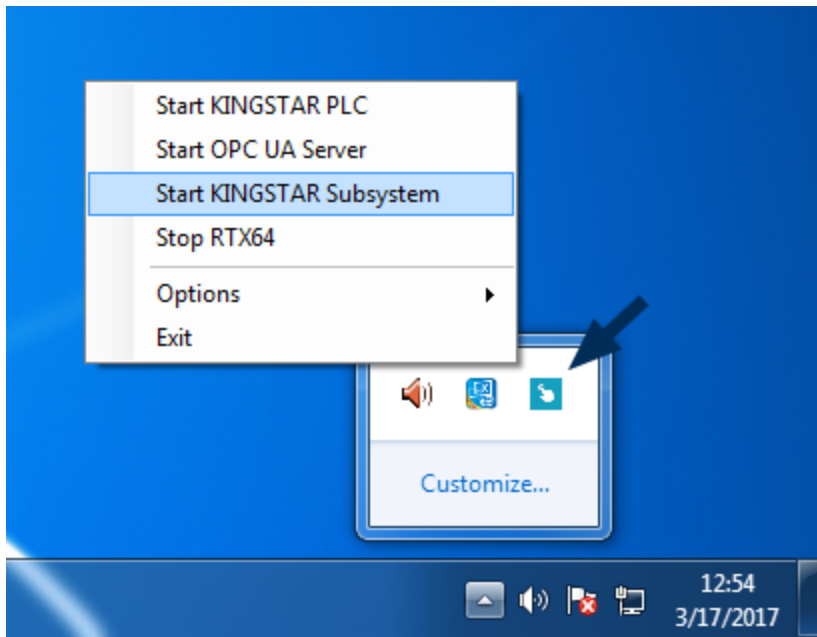
**NOTE:** You must stop KINGSTAR PLC Runtime first, and then can stop KINGSTAR Subsystem.

- Click **Options > Affinity > Core: N**. N is the core number you want to assign. The more cores your processor has, the more are listed in the menu.



- Click **Start KINGSTAR Subsystem**. After you assign the core, KINGSTAR Subsystem will run on that core every time you start the Subsystem.

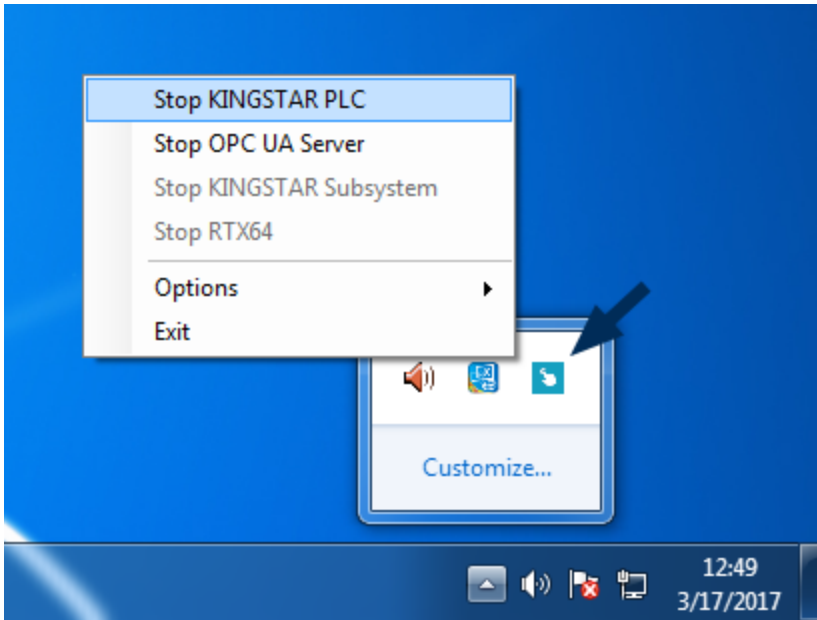
**NOTE:** If you want to take the core back, just select **Disabled** in the menu.



## Exit KINGSTAR Soft PLC Runtime

To exit KINGSTAR Soft PLC Runtime:

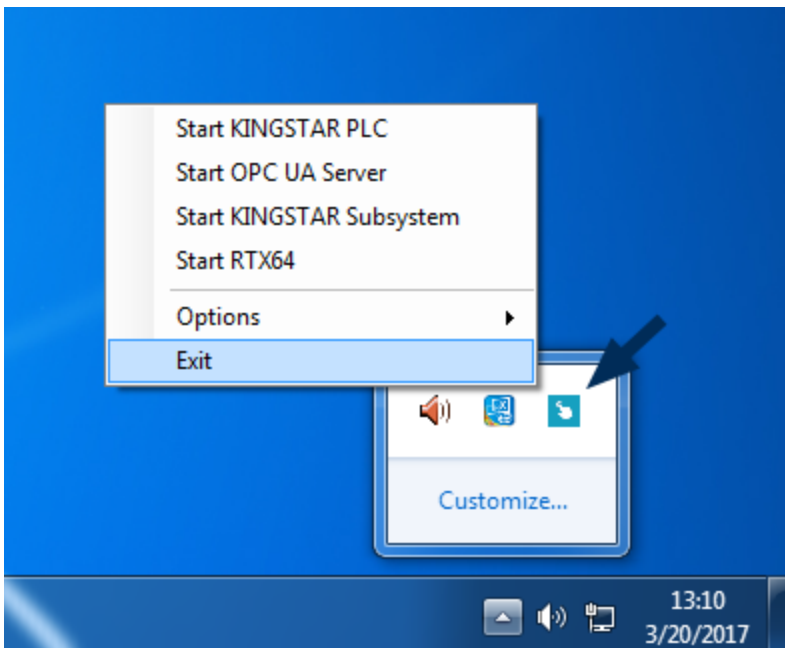
1. In the notification area, click **Show hidden icons**, and right-click the KINGSTAR Soft PLC Runtime icon.
2. In the shortcut menu, click **Stop KINGSTAR PLC** and **Stop OPC UA Server**, and then click **Stop KINGSTAR Subsystem**. Finally, click **Stop RTX64**.



3. Right-click the KINGSTAR Soft PLC Runtime icon and click **Exit**.

**NOTE:** **Exit** doesn't stop KINGSTAR Soft PLC Runtime and OPC UA Server. You need to stop them manually.

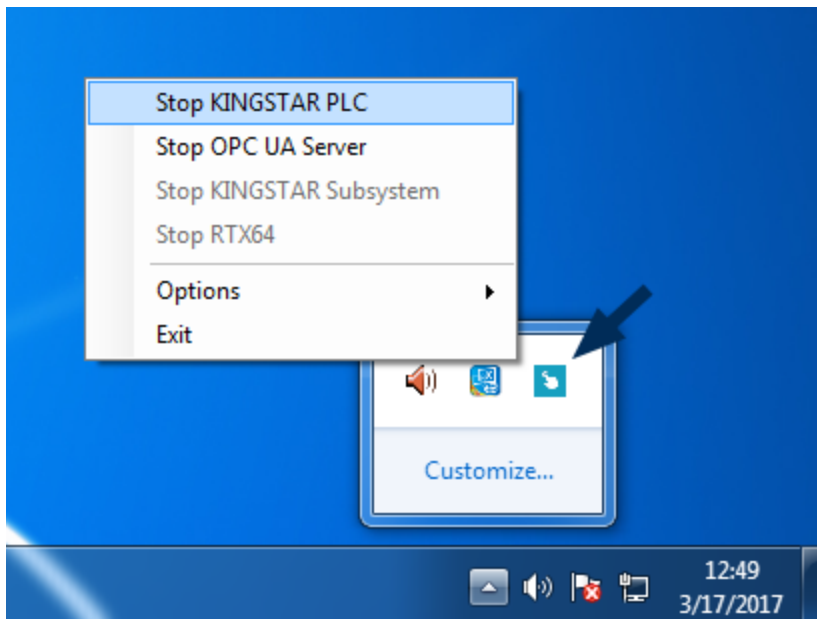
**NOTE:** If you want to start KINGSTAR Soft PLC Runtime after exiting it, click **Start > All Programs > KINGSTAR Runtime > KINGSTAR PLC**.



# Uninstall KINGSTAR Soft PLC Runtime

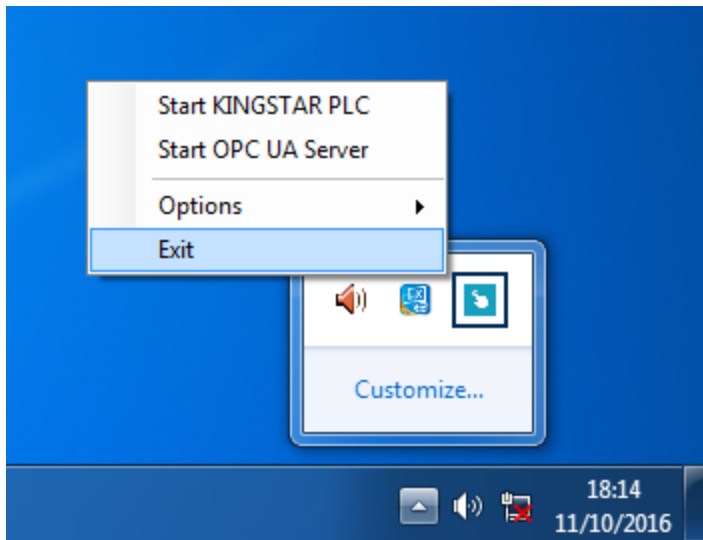
To uninstall KINGSTAR Soft PLC Runtime:

1. In the notification area, click **Show hidden icons**.
2. Right-click the KINGSTAR Soft PLC Runtime icon, click **Stop KINGSTAR PLC** and **Stop OPC UA Server**, and then click **Stop KINGSTAR Subsystem**. Finally, click **Stop RTX64**.

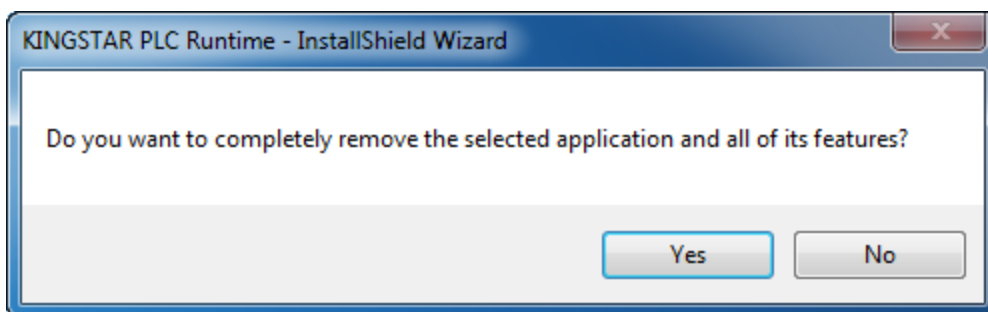


3. Click **Exit** to exit KINGSTAR Soft PLC Runtime.

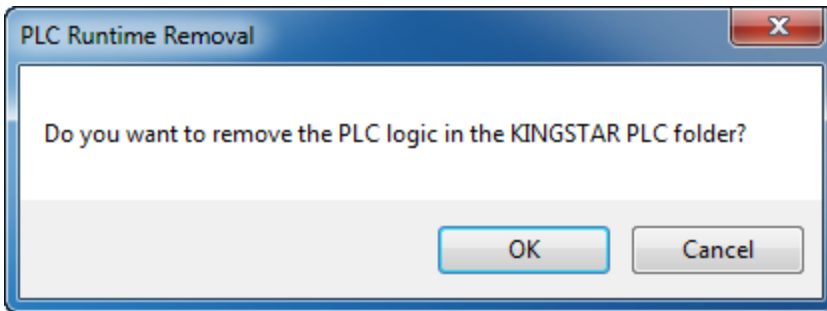




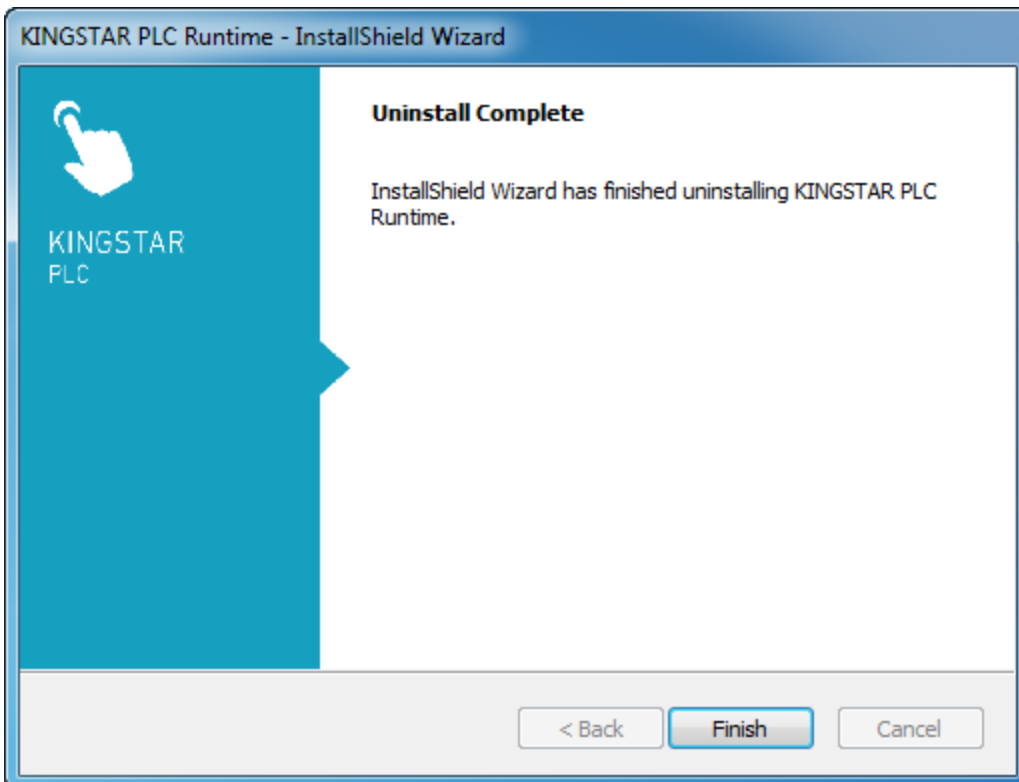
4. Go to **Control Panel > All Control Panel Items > Programs and Features**.
5. In the **Uninstall or change a program** list, select **KINGSTAR PLC Runtime**, and click **Uninstall**.
6. You are prompted to remove KINGSTAR Soft PLC Runtime. Click **Yes**.



7. Windows starts to remove KINGSTAR Soft PLC Runtime, and then you're prompted to decide whether to remove the PLC logic in the KINGSTAR Soft PLC Runtime folder.
  - **OK**: Remove the KINGSTAR Soft PLC Runtime folder and all files in it.
  - **Cancel**: Keep the KINGSTAR Soft PLC Runtime folder and the PLC logic in it, but remove other files. If there's no PLC logic in the KINGSTAR Soft PLC Runtime folder and you click **Cancel**, the folder is still removed.



8. After uninstalling KINGSTAR Soft PLC Runtime, click **Finish**.



# Get support

KINGSTAR offers a number of support options for KINGSTAR users, including third-party, online and phone support.

## Third-party support

If you are a customer who purchased a KINGSTAR product through a third-party reseller, contact the reseller for support.

## Online support

The KINGSTAR Customer Support web page is located at:

<http://kingstar.com/support/>

The KINGSTAR support web pages provide electronic access to the latest product releases, documentation, and release notes. You can access the online support ticketing system to submit issues or questions.

## Before calling technical support

Please have the following information ready before calling KINGSTAR Technical Support:

### The version number of your RTX64 and KINGSTAR software

To obtain the RTX64 version number:

1. Click **Start > All Programs > RTX64 3.1 Runtime > Control Panel**.
2. In the **RTX64 3.1 Control Panel**, record **Version** shown in the **Runtime Information** area.

To obtain the KINGSTAR version number:

1. Click **Start > All Programs > KINGSTAR > Runtime**.
2. In **Windows Explorer**, click the `ksm64.rtdll` file, and right-click the same file again.
3. On the shortcut menu, click **Properties**.

4. In the **ksm64.rtdll Properties** window, click the **Details** tab, and record **Product version**.

## Phone support

For technical support related to installing and using KINGSTAR, please call technical support at this number:

+886-2-2556-8117

Hours are Monday-Friday from 9:30 to 18:30, UTC+08:00, excluding holidays.