Rockwell Automation

Studio 5000
Automation Engineering
& Design Environment

▶ BEGIN

Studio 5000

ENHANCE PRODUCTIVITY THROUGH SIMPLIFIED SYSTEM DEVELOPMENT

OVERVIEW

The Studio 5000® design environment combines elements of design into one standard framework that optimizes productivity and reduces time to commission.

This intuitive integrated design environment focuses on rapid design, re-use, collaboration and virtual design.

The updated user interface provides a common, modern user experience across all Studio 5000 applications.

Studio 5000® Architect™
Enables simplified system design and data exchange

Studio 5000 Logix Designer®
Collaborative system programming and configuration

Studio 5000 View Designer®
Highly integrated HMI with Logix

Studio 5000® Application Code Manager
System reuse and quickly build projects

Studio 5000® Logix Emulate™
Virtual design and operator training systems

Studio 5000® Simulation Interface™
Connect logic to simulation models

Studio 5000
PG 2

Architect
PG 3

Logix Designer
PG 4

View Designer
PG 5

Application
Code Manager
PG 6

Logix Emulate
PG 7

Simulation
Interface
PG 8

Software
package options
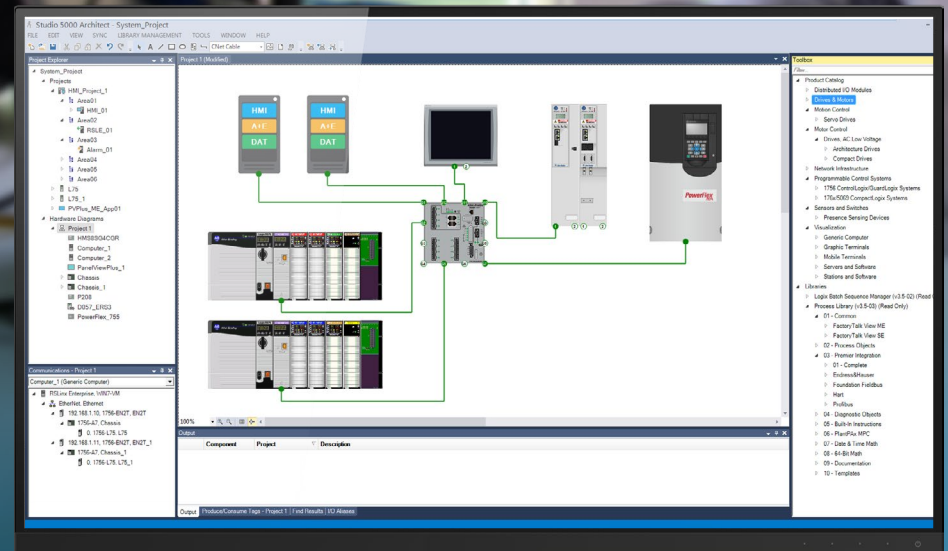PG 9

◀ 2 ▶

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Studio 5000 Architect

MANAGE THE SYSTEM LAYOUT

Studio 5000 Architect is the central point within the Studio 5000 environment where users can view the overall automation system; configure devices such as controllers, Human Machine Interface (HMI) and Electronic Operator Interface (EOI); and manage the communications between the devices. The Studio 5000 Architect application also exchanges data with other Studio 5000 applications and third-party CAD packages to simplify the development experience.

This helps streamline the time to build your Logix and View automation system and allows you to:

- Create a graphical representation of your system for easier system modifications

- Build Logix and View projects from an integrated environment

- Re-use Logix and View content as well as use content from the Rockwell Automation Library of Process Objects

- Exchange hardware configuration data, like Controller, I/O, and Communications modules, with third-party tools

- AutomationML import/export capabilities for bi-directional exchange of data between Studio 5000 and electrical CAD packages for robust data management

Studio 5000
PG 2

**Architect
PG 3**

Logix Designer
PG 4

View Designer
PG 5

Application
Code Manager
PG 6

Logix Emulate
PG 7

Simulation
Interface
PG 8

Software
package options
PG 9

◀ 3 ▶

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Studio 5000 Logix Designer

CONFIGURE, PROGRAM AND MAINTAIN YOUR CONTROLLERS

Studio 5000 Logix Designer is the one application to configure, program and maintain the entire Allen-Bradley® Logix 5000™ family of controller products and related devices. Its intuitive, modern programming environment allows users to work collaboratively to design and maintain their systems.

- One programming software for all disciplines — safety, motion, drives, process and discrete

- Easily configure devices with graphical wizards and automatically create tags

- Simplified, modern programming with multiple editors and modular programming features for increased productivity

- View the system and easily find what you need with the Logical Organizer and Controller Organizer views — helping maintain uptime

- Create code simultaneously with others, and then compare and merge changes

- Protect the design and execution of your Logix content with license-based protection capabilities — to help ensure that only authorized users are able to view, modify or execute protected code

- Logix tag-based alarms functionality allows users to add alarms directly to any tag or structure with a simple right click; no additional programming required

- Expanded library of safety instructions for network-based safety and motion instructions for improved kinematics support

- Supports scalable safety offerings providing a more right-sized solution SIL 2 and SIL 3

- Offers AutomationML capabilities for bidirectional exchange of data between Studio 5000 Design Environment and electrical CAD packages for robust data exchange and flexibility

Project Explorer offers multiple views to help define organization and execution

Integrated Motion and Integrated Safety in an intuitive design environment

Instruction Palette contains over 250 predefined instructions

Feature-rich editors help users write modular code
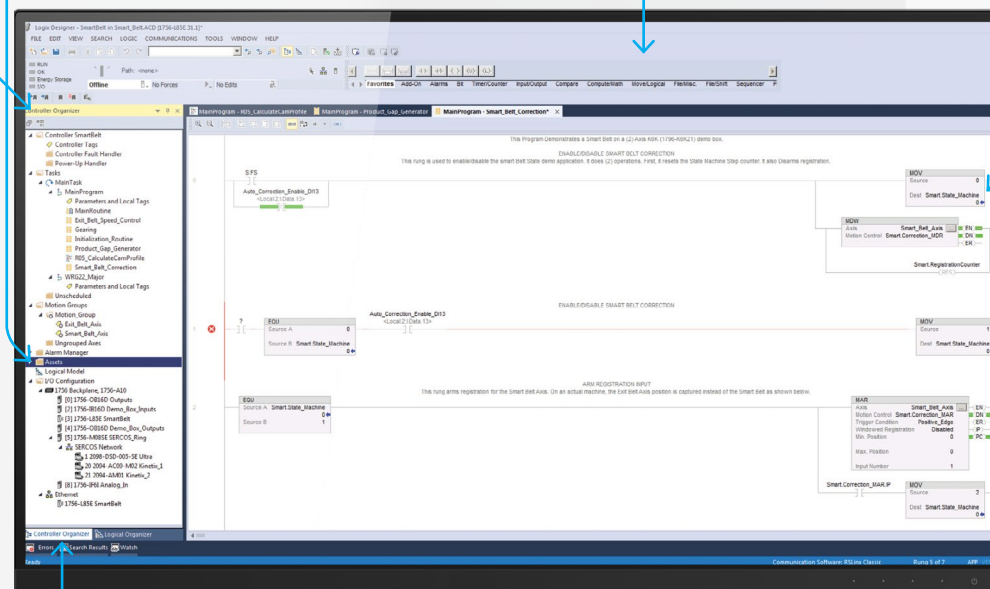
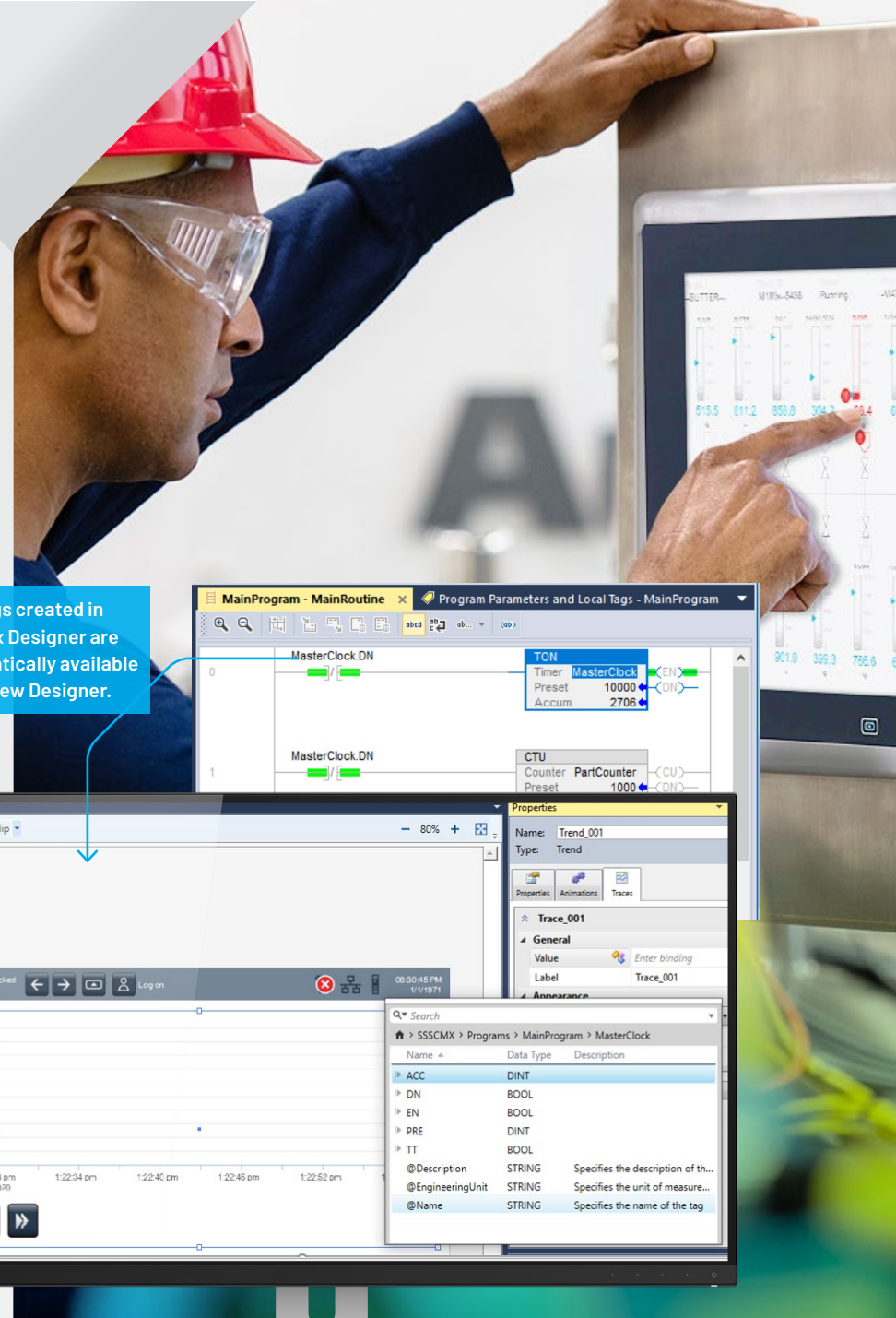Powerful and easy-to-use device configuration simplifies setup and integration

Studio 5000
PG 2

Architect
PG 3

**Logix Designer
PG 4**

View Designer
PG 5

Application
Code Manager
PG 6

Logix Emulate
PG 7

Simulation
Interface
PG 8

Software
package options
PG 9

◀ 4 ▶

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Studio 5000 View Designer

CONFIGURE, PROGRAM AND MAINTAIN YOUR OPERATOR INTERFACES

Studio 5000 View Designer is the design environment for the PanelView™ 5000 family of operator terminals. The integration of the PanelView 5000 terminals with Studio 5000 View Designer helps build modern applications more easily and improve operator performance.

The View Designer application provides an intuitive, modern design environment and enhances integration between the control system and operator interface to improve programming efficiency and runtime performance.

- Preconfigured banner, alarm summary and diagnostic displays help reduce design time

- Simplify your engineering with shared tags between HMI and controller

- Eliminate alarm programming and reduce network traffic with Logix-tag based alarms

- High-speed button control provides quick response and feedback for machine jogging applications

- Create custom, re-usable add-on graphics to save engineering time and promote consistency

- Multi-language support with a language switching feature enables users to switch between languages on the PanelView 5000 terminals to support global user needs

- Emulation capabilities enable users to test run a project without downloading to decrease overall project risks

- Data logging and historical trending features show historical data immediately when the screen is displayed, helping decrease troubleshooting time

- Built-in VNC server enables a remote VNC client for monitoring and troubleshooting

Tags created in Logix Designer are automatically available in View Designer.

Studio 5000
PG 2

Architect
PG 3

Logix Designer
PG 4

View Designer
PG 5

Application
Code Manager
PG 6

Logix Emulate
PG 7

Simulation
Interface
PG 8

Software
package options
PG 9

◄ 5 ►

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Studio 5000 Application Code Manager

## ACCELERATE PROJECT CREATION USING RE-USABLE CONTENT

Studio 5000 Application Code Manager helps speed system development by building libraries of re-usable code that can be managed and deployed across the entire enterprise. Creating projects with Application Code Manager helps improve design consistency, reduce engineering costs and achieve faster commissioning.

- Easily create and configure objects in bulk using re-usable libraries of code to increase application development, without any additional programming

- Effortlessly import and export configuration data using Microsoft Excel

- The auto content generation feature creates not only the controller code for the modular object, but also the associated visualization, historical and alarming data — helping to build projects more efficiently

- Easily instantiate complex re-usable library objects into a new or an existing project

- Use standardized, application-focused libraries of code at no cost, including PlantPAx® Process Object Libraries and our Machine Builder Libraries, to save time and more easily maintain your systems

A no-cost Lite Edition is available from PCDC (Product Compatibility and Download Center) and includes the ability to use Rockwell Automation libraries and create custom libraries, but is limited to a single controller and local database. Studio 5000 Application Code Manager Standard Edition is available as a low cost, annual subscription.

Project Explorer shows all of the configured objects in your automation project

Quickly and easily configure modular objects through simple parameter configuration
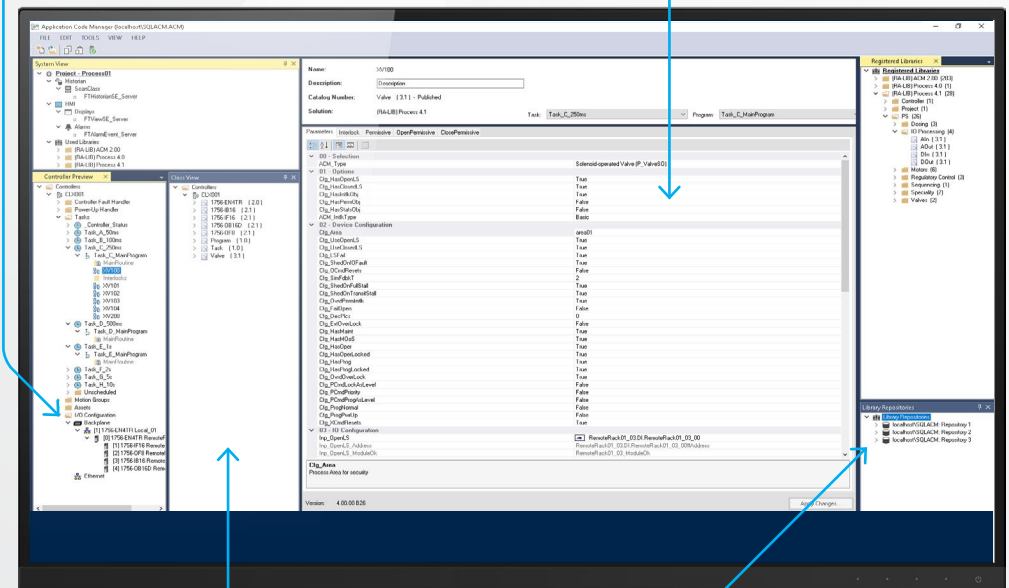
Add, edit and delete project content by Library Objects with Class View
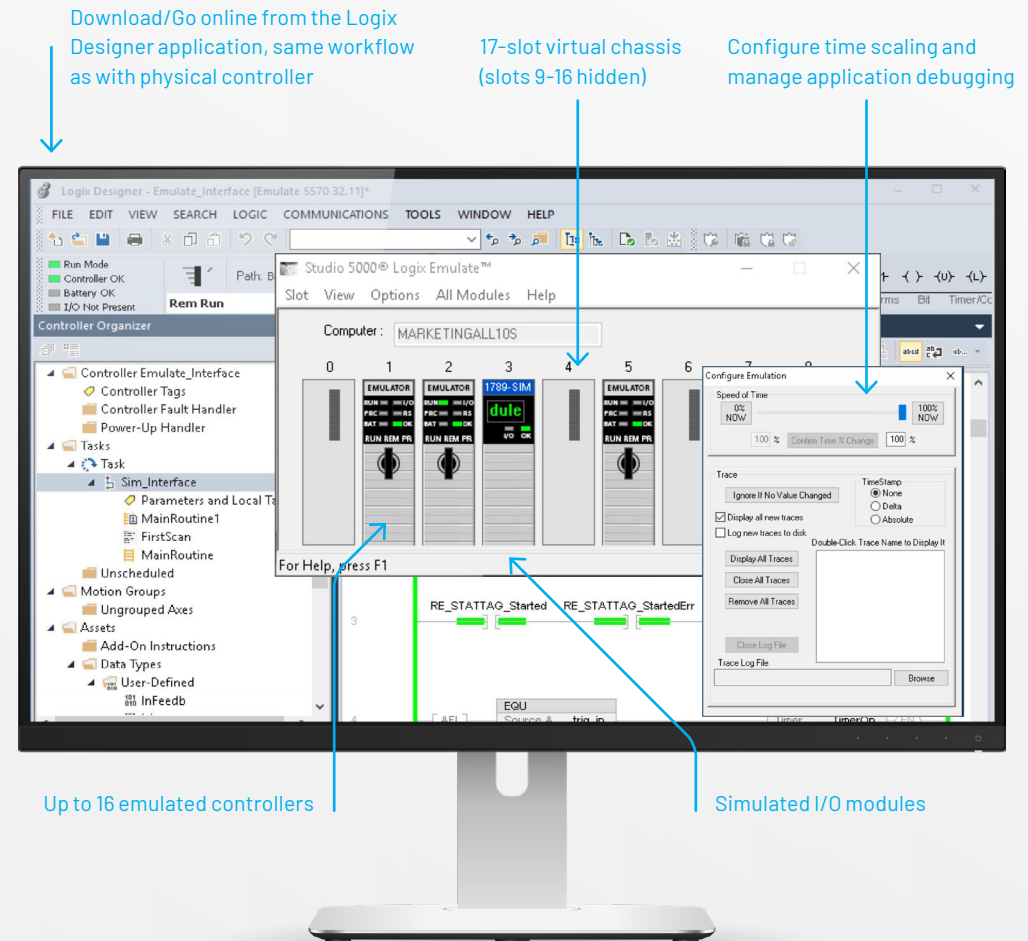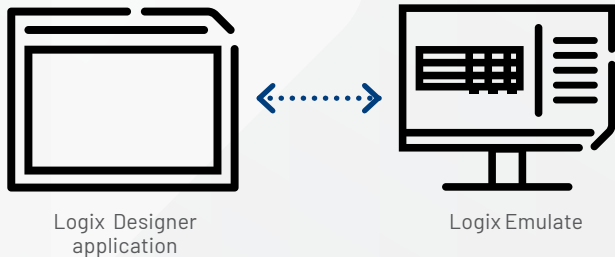
Manage your comprehensive library of reusable content across projects

Studio 5000
PG 2

Architect
PG 3

Logix Designer
PG 4

View Designer
PG 5

**Application
Code Manager
PG 6**

Logix Emulate
PG 7

Simulation
Interface
PG 8

Software
package options
PG 9

◄ **6** ►

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Studio 5000 Logix Emulate

SIMULATE YOUR SYSTEM IN A SAFE, VIRTUAL ENVIRONMENT

Studio 5000 Logix Emulate increases design productivity, reduces risk and decreases overall project costs. It is the core of Studio 5000 virtual design; enabling Machine Prototyping, Throughput Analysis, Virtual Commissioning and Operator Training Systems (OTS). Logix Emulate provides the ability to validate, test and optimize application code independent of physical hardware. Interface capabilities provide connectivity to 3rd party simulation and OTS, enabling users to simulate their entire process and train teams in a safe, virtual environment.

- Simulate discrete Input/Output (I/O) and Logix5000 based controllers

- Simplify troubleshooting by utilizing advanced debugging to support code validation and virtual commissioning

- Easily adjust execution speeds to identify potential issues long before they are found in a production system

- Integrate into high fidelity process simulation systems for operator and situational based training

Logix Designer application

Logix Emulate

Download/Go online from the Logix Designer application, same workflow as with physical controller

17-slot virtual chassis (slots 9-16 hidden)

Configure time scaling and manage application debugging

Up to 16 emulated controllers

Simulated I/O modules

Studio 5000
PG 2

Architect
PG 3

Logix Designer
PG 4

View Designer
PG 5

Application
Code Manager
PG 6

**Logix Emulate
PG 7**

Simulation
Interface
PG 8

Software
package options
PG 9

◀ 7 ▶

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Studio 5000 Simulation interface

CONNECTIVITY TO SUPPORT SMART MACHINES AND DIGITAL DESIGN

Studio 5000 Simulation Interface connects controllers — physical or emulated — to simulation and modeling tools to enable virtual commissioning and model-based design. This can help you design, test, validate and commission smart machines before they are put into service.

- Uses Functional Mock-up, a tool-independent standard, to support both model exchange and co-simulation of dynamic models to design and test smart machines easier
- Supports Matlab Simulink, allowing bi-directional communication with Simulink Models
- Simulate discrete Input/Output (I/O) and Logix 5000 based controllers
- Simplify troubleshooting by utilizing advanced debugging to support code validation and virtual commissioning
- Easily adjust execution speeds to identify potential issues long before they are found in a production system
- Integrate into high fidelity process simulation systems for operator and situational based training

Start in a model, either MATLAB directly, or with a modeling software that uses the FMI standard

Connect values in your model to tags in your PLC Program with Simulation Interface

SIMULATION INTERFACE

Logix Designer application

Logix Emulate

OR
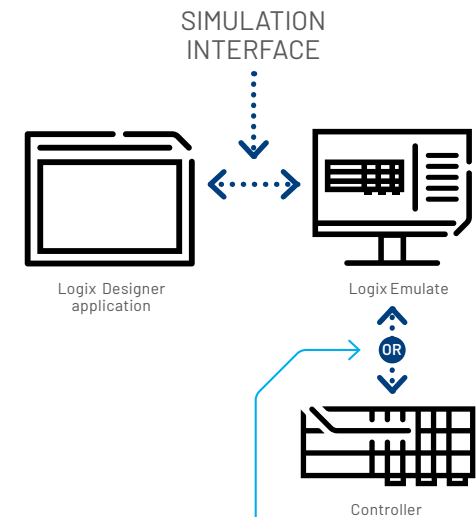
Controller

Download to either an emulated controller with Logix Emulate or a physical controller, such as ControlLogix® or CompactLogix™

Import FMU or Matlab Models

Controls to Start/ Stop/Step the simulation

Status information on the simulation

Import controller projects and connect tags to the models

Studio 5000
PG 2

Architect
PG 3

Logix Designer
PG 4

View Designer
PG 5

Application
Code Manager
PG 6

Logix Emulate
PG 7

**Simulation
Interface
PG 8**

Software
package options
PG 9

◀ 8 ▶

Rockwell Automation

Studio 5000 software package options

	Studio 5000 edition		
	PROFESSIONAL	**STANDARD**	**LITE**
Architect	✅	✅	✅
Logix Designer	✅	✅	✅
Controllers supported	all	all	CompactLogix only
Editors included (before add-ons[1])	all	ladder only	all
View Designer	✅	✅	✅
Logix Emulate[2]	✅	➕	N/A
Application Code Manager Lite[3]	✅	✅	✅
Simulation Interface			
Simulation Interface Developer	➕	➕	➕
Simulation Interface Run-time	➕	➕	➕

✅ included   ➕ add-on purchase

[1]Additional add-ons are available. For complete offering, consult the **Studio 5000 Ordering Information Guide.**
[2]Logix Emulate is included in the Professional Edition, however Logix Emulate for Operator Training is a standalone license and must be purchased separately.
[3]Application Code Manager Lite is available at no charge on PCDC, Standard Edition is available as an add-on purchase.

PURCHASING OPTIONS

Perpetual software license and maintenance bundle
Work more confidently with automatic access to software version updates for a full year. Rockwell Automation software licenses are bundled with first year maintenance benefits to deliver important version updates. Perpetual licenses never expire.

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Studio 5000
PG 2

Architect
PG 3

Logix Designer
PG 4

View Designer
PG 5

Application
Code Manager
PG 6

Logix Emulate
PG 7

Simulation
Interface
PG 8

**Software
package options
PG 9**

◀ 9 ▶

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