

Migration Profile

PLC-5 Controllers and 1771 I/O to ControlLogix

Why Modernize?

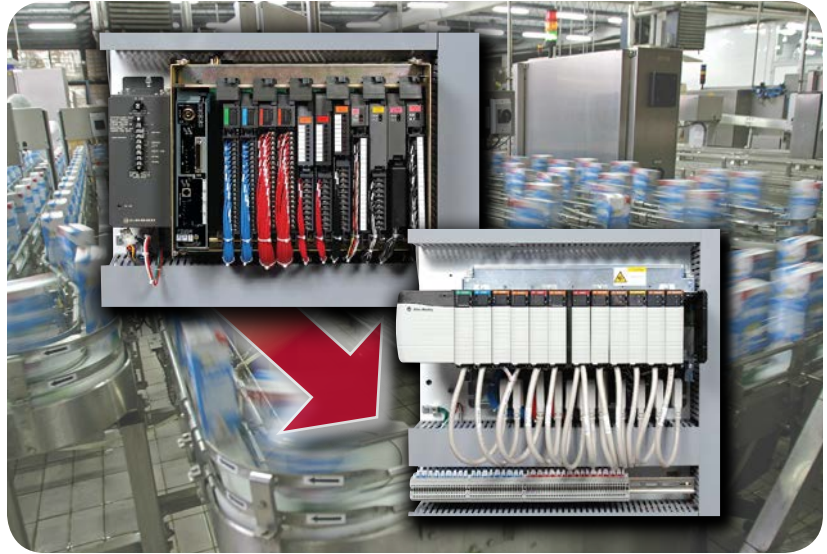
The PLC-5[®] programmable logic controller has been a valuable part of our portfolio for more than 30 years. But no technology can last forever. Now is the time to modernize your control system to the Rockwell Automation[®] ControlLogix[®] platform. This high performance platform allows you to converge your production disciplines (discrete, motion, process and safety), including extreme environments and high availability applications, into an integrated plant-wide architecture that enables you to achieve a connected enterprise.

Information shared between Information Technology (IT) and Operations Technology (OT) across a secure network enables:

- Greater production visibility, for quicker response to customer demand
- Higher profit margins through improved inventory management, cycle times and quality control
- Improved capacity and asset utilization, leading to greater Overall Equipment Effectiveness (OEE)
- Regulatory compliance and reduced exposure to security risks

ControlLogix Benefits

Migrating to the ControlLogix family of programmable automation controllers (PAC) allows you to leverage advancements in technology that provide access to information for more informed business decisions, faster performance for more throughput and more memory. The ControlLogix platform improves ease-of-use and enables scalability via a common control engine in a single development environment that helps eliminate the need for multiple discrete control systems.



Active: Most current offering within a product category.

Active Mature: Product is fully supported but a newer product family exists. Gain value by migrating.

End of Life: Discontinued date announced – execute migration projects and last time buys. Product generally orderable until the discontinued date.

Discontinued: Product no longer manufactured or procured. Repair and remanufacturing services may be available.

Moving Beyond the Risks of Automation Obsolescence

As seen in the graphic above, the lifecycle status of the PLC-5 platform is currently End of Life, projected to be Discontinued in June of 2017. When you are ready to modernize to the ControlLogix platform, Rockwell Automation and its partners have the products, tools and resources to help you outline and implement a plan that fits your application needs, budget and long-term goals. Whether you choose to modernize all at once or in phases, we have everything from self-service tools, to hardware and software conversion utilities, to a wide range of migration services to help guide you through the transition.



Faster Time to Market



Lower Total Cost of Ownership



Improved Asset Utilization



Enterprise Risk Management

LISTEN.
THINK.
SOLVE.

Getting Started: Analyzing your automation system

We recommend beginning with a lifecycle analysis of your production equipment and spares inventory. A thorough review of this information will help you prioritize your modernization needs and goals. There are several options to do this: you can conduct your own assessment, work with your local system integrator or Rockwell Automation.

Knowing the current lifecycle status of your existing control and information equipment makes it easier to plan the transition to leading-edge technologies. Our online Product Lifecycle Status tool can help you determine the lifecycle data of your existing equipment. To access the Product Lifecycle Status, go to:
<http://www.rockwellautomation.com/global/solutions-services/capabilities/migration-solutions/product-search/overview.page?>

Our Installed Base Evaluation™ (IBE) provides a thorough analysis of your critical plant assets and their condition. This site-delivered service provides detailed reports by site, area, line, machine and panel. For more information on IBEs, go to:
<http://www.rockwellautomation.com/global/services/consulting-assessment/installed-base.page?>

As you plan your PLC-5 migration, there are several options to help mitigate the growing risk of operating obsolete equipment:

- Last Time Buy Options
- Lifecycle Extension Agreements
- Remanufacturing Services

To learn more, contact your local authorized Allen-Bradley distributor or Rockwell Automation sales office.

Evaluating Options: Planning your migration

When planning your migration, you can evaluate options to develop a proactive lifecycle plan, including our unique phased approach.

From complete custom turnkey solutions, to pre-configured packages to simply providing you with the tools to do it yourself, we will help you get the highest possible return on your automation investment.

Migration Resources available from Rockwell Automation

- **Custom Solutions**

Reduce lifecycle risks before, during and after the migration process with migration services that are tailored to your specific needs. Our modernization services and support are available to help you realize the benefits of ControlLogix System and a modern control architecture. Our factory-trained Field Service Professionals are experienced and prepared to provide on-site assessments, migration planning services, start-up and commissioning of your modernized control architecture. From project management to start-up, we will help define and implement an effective modernization strategy for your facility that goes beyond simply addressing your legacy equipment to truly optimizing your operation. For more information on our Solutions and Services, go to:

<http://www.rockwellautomation.com/global/services/onsite/conversion-migration.page?>

- **Migration Packages**

For less complex upgrades, an easy, affordable option is a ControlLogix System packaged migration in which Rockwell Automation or a system integrator helps migrate your end of life or discontinued system using recommended replacement products. Under this package, the PLC-5 controller is migrated using a packaged ControlLogix system complete with application code conversion. This migration package includes the hardware: chassis, controller, Wiring Conversion System, I/O modules, Communications Module and one-year of 24/7 support. In addition, Rockwell Automation offers options including: additional rungs of code conversion and start-up assistance. For more information on our Migration Packages, go to:

<http://www.rockwellautomation.com/global/solutions-services/capabilities/migration-solutions/plc-5-migration-package.page?>

- **Do-It-Yourself**

If you prefer to migrate from PLC-5 controller and 1771 I/O to ControlLogix system without assistance, Rockwell Automation provides a number of tools free of charge to help you plan and migrate with as little disruption as possible.

Tools to plan and execute the migration

Rockwell Automation provides migration tools for hardware selection, code conversion and hardware conversion that practically eliminate the need to modify any field device wiring. These are available free of charge and include the following:

All tools, phases and migration packages are available regardless of who performs the migration:

- Rockwell Automation
- A System Integrator
- You Do-It-Yourself

Product Lifecycle Status

The online Product Lifecycle Status tool can help you determine the lifecycle of your existing equipment and identify the most contemporary Rockwell Automation products, bringing you advancements in performance, flexibility and security. Having this knowledge makes it easier to plan and manage the transition from legacy or obsolete equipment to leading-edge technologies.

Integrated Architecture Builder

The Integrated Architecture Builder (IAB) is a graphical, user-friendly software tool that allows you to automatically define and configure a contemporary ControlLogix based architecture including a detailed bill of materials based on your current PLC-5 based control system. Simply enter the legacy PLC-5 based Bill of Materials into the tool and it automatically generates the new system Bill of Materials.

RSLogix™ Project Migrator

The RSLogix Project Migrator tool is a standalone software tool for converting an RSLogix 5 or 500 project export file for import into Studio 5000 Logix Designer®. By launching the RSLogix Project Migrator tool you are only steps away from converting your application.

Controller and I/O Wiring Conversion Systems

I/O Conversion Modules provide a fast and efficient method for converting from legacy I/O to contemporary I/O. The I/O conversion is accomplished without removing any field wires from the existing Bulletin 1771 Swing Arm, virtually eliminating the risk of wiring errors. The existing Bulletin 1771 Swing Arms fit directly onto the edge connector of the Bulletin 1492 Conversion Modules.

Network Interface Modules

The 1756-RIO (Remote I/O network) module enables communication and data transfer between a ControlLogix controller and other devices on your existing RIO network. It can be used to upgrade an existing PLC-5, PLC-3® or SLC™ system to a ControlLogix system. The advantages of using the 1756-RIO module in a phased modernization include allowing the existing Remote I/O network to remain in place and allows the new application to be tested before switch over and to switch back to the old application in minutes.

For more information, please visit:



[Product Lifecycle Status](#)

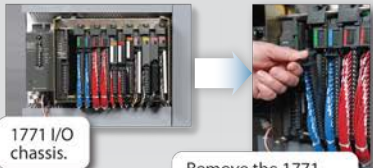
[Integrated Architecture Builder](#)

[RSLogix Project Migrator](#)

[I/O Conversion Modules](#)

[1756-RIO Module](#)

Using the I/O Wiring Conversion System can save you hours and eliminate the risk of costly rewiring mistakes.



1771 I/O chassis.

Remove the 1771 swing-arms from the 1771 modules.



Remove the 1771 chassis from the control cabinet.



Install the I/O conversion base plate in the control panel. Attach conversion base plate.



Install the conversion modules into the baseplate.



Insert the 1771 swing-arm with attached field wires to the conversion module.



Attach the Bulletin 1492 conversion interface cable to the conversion module and 1756 I/O module.



Converted system.

Moving Forward: Executing your project

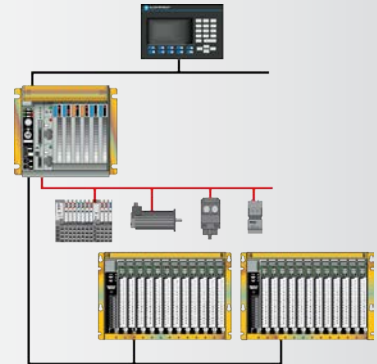
Whether you choose to migrate all at once or in phases, we have the tools and experience to guide you through the transition.

Our approach to modular automation coupled with backward compatibility allows you to maintain productivity as you upgrade portions of your automation system. Migrate in phases at a pace that's right for you.

PHASE I: Application Code Conversion

Phase I often begins by converting PLC-5 processor code to Logix code. Our free logic and tag database conversion utility, RSLogix Project Migrator, will help you quickly upgrade your processor code allowing you to take full advantage of the Rockwell Automation Logix family of PACs. Once the converted code has been downloaded to the Logix PAC, the new 1756-RIO Remote I/O module can be used as the network interface to the 1771 I/O over the existing Remote I/O network.

Phase I Tools: Logic Code Conversion Services and 1756-RIO Module



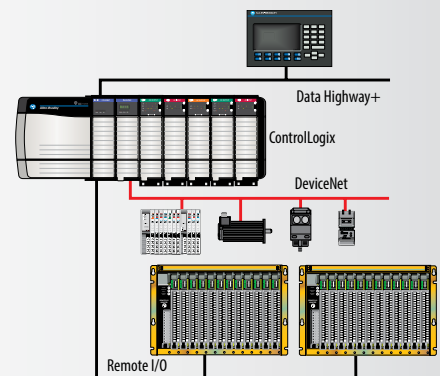
Benefits:

- Develop and confirm your Migration plan
- Test application code before implementation
- Convert 80-100% of code using automated code conversion (may need to manually convert messages, special instructions, such as PID, and potential timing/scan differences)
- Take advantage of powerful constructs and features (like structures and integrated motion) that you can leverage to improve the application

PHASE II: Replace PLC-5 Controllers

Phase II involves replacing the existing PLC-5 controller(s), while continuing to use the 1771 Remote I/O. This is also called a Rack Zero Migration. Replace the PLC-5 controller with the Logix PAC and the 1756-RIO Module. The same 1756-RIO Module used in Phase I is now configured to perform as the master instead of the monitor. The Logix PAC can now control any I/O that resides in the local and distributed 1771 chassis.

Phase II Tools: 1756-RIO Module



Benefits:

- Maintain existing field wiring
- Minimize commissioning time and effort
- Ability to return to PLC-5 control, if needed

PHASE III: HMI/EOI Migration

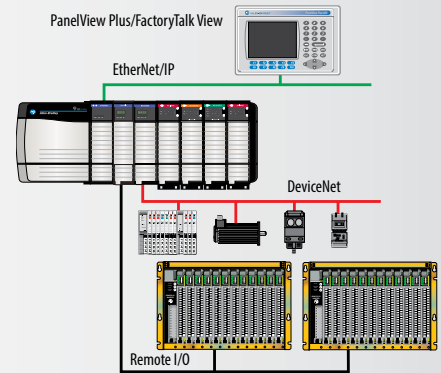
During this phase of the migration, existing HMIs or EOIs can be replaced with FactoryTalk® View products using Application Conversion Utilities (ACU). ACUs not only make operator interface conversion much more cost effective, but give you greater flexibility regarding the final product. This means that you can account for how operators use your equipment and design interfaces that help maximize their productivity. In the end, this will allow you to give your operators the tools they need to get quality product to your customers.

Rockwell Automation currently offers free conversion from WonderWare and Intellution iFIX HMI interfaces.

Phase III Tools: HMI Application Conversion Utility (ACU)

Benefits:

- 80% of the time no further modification is required
- Utility generates conversion log identifying features not supported by new hardware selected
- Option to take advantage of enhanced features and graphics
- Better integration with controllers



PHASE IV: I/O Replacement

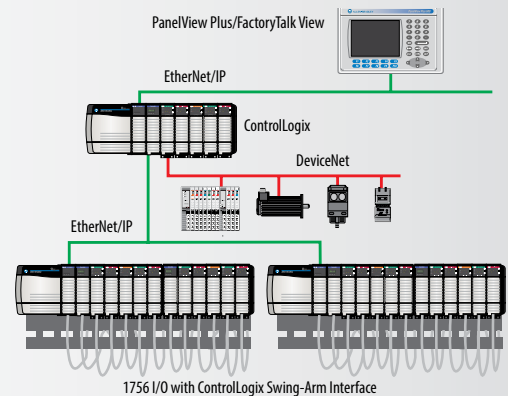
In the final phase of the migration process, the I/O Wiring Conversion System is used to replace the 1771 I/O with the ControlLogix I/O. Because I/O replacement represents a large investment, we provide an approach that's right for your schedule and budget.

The I/O Wiring Conversion System provides a method to connect the existing 1771 I/O wiring to the 1756 I/O modules without disturbing the field wiring, dramatically reducing labor time and eliminating the potential for downtime that could result from wiring mistakes during the migration. Planning your migration is more manageable as I/O can be swapped one rack at a time or all at once based on your schedule and budget. In either case, you can run both new and old I/O networks simultaneously. Additionally, I/O cross reference documentation assures correctness and provides historical back-up for future troubleshooting or diagnostics.

Phase IV Tools: I/O Wiring Conversion System, and ProposalWorks Selection Software

Benefits:

- Maintain existing field wiring
- Minimize commissioning time and effort
- Cross reference documentation to assure correct selection and historical back-up for future troubleshooting and/or diagnostics



Proven Results

Customer Testimonial

CommScope, a leading cable manufacturer needed to find a cost-effective way to modernize their production line and incorporate new equipment. When Rockwell Automation first began working with CommScope, the facility was controlled only by Allen-Bradley PLC-5 controllers and 1771 I/O. After the migration, the facility uses ControlLogix PACs, 1756 chassis I/O and FLEX™ I/O on EtherNet/IP.

“These new products allow us to shrink our equipment footprint, move equipment around and cut installation and maintenance costs.”

King Lewis, control engineering supervisor at CommScope

“I didn’t know how long this transition would take when we first started the project, but going from mechanical drawings to product in just four months with only a few days of downtime was faster than I thought it could be done,” said King Lewis, control engineering supervisor at CommScope. “The Rockwell Automation migration tools obviously helped make the process relatively fast and painless.”

To stay competitive, CommScope needed the ability to produce multiple types of cables. This required precision and flexibility as lines change over frequently. Lewis said, “Our sister plants and competitors overseas can run single cables for a long period of time at low costs to the customer. We have to keep our plant up to date, so we can push product through more quickly and maintain the best quality. This system migration not only allowed us to produce a new cable, saving more than \$6 million in shipping costs annually, but it also improves production on the other five to ten types of cable we make on this same line.”

“Using EtherNet/IP means we don’t have to deal with gateways and can more easily share information throughout the company. We’ve removed push buttons and added functionality. And all the migration support and tools from Rockwell Automation reduced the risk of our transition,” Lewis said.

Migrate Now to Achieve These Benefits

Greater equipment utilization
More production flexibility and scalability
Higher performance
Access to plant-wide information
Increased integration for plant-wide control
Increased ability to meet global standards
Increased competitive advantage



Reduced maintenance and energy costs
Reduced operations costs
Reduced risk
Reduced spares for obsolete equipment

To request a migration quote, please contact your local authorized Allen-Bradley distributor or Rockwell Automation sales office.

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