PLC-5® and 1771 I/O Migration to ControlLogix®
The Solution: PLC-5 and 1771 I/O Migrations Made Easy
Unmatched Value: Time Savings and Risk Reduction!

I/O Wiring Conversion system:
• Typically saves 10 hours per rack of ten, 40-point I/O modules
• Lowers engineering and labor costs
• Reduces production downtime

• Reduces risk by eliminating potential wiring errors
  • Preserves existing field wiring connections by using existing 1771 swing-arms
• No need to drill new holes in the control panel
Understanding the Product Lifecycle

**ACTIVE**
Most current product offering within a category. Product does not have to be recently launched.

**ACTIVE MATURE**
Product is fully supported and available, but a newer family exists. Gain Value by migrating to the newer family.

**END OF LIFE**
Discontinued date announced – actively execute migrations and last time buys. Product available until the Discontinued date.\(^1\)

**DISCONTINUED**
New product no longer available. Repair/exchange services may still be available.

\(^1\)Discontinued date may be extended, based on available inventory. Stockouts on specific inventory may occur prior to Discontinued date.

- Product Launch
- A Newer Product in that Category is Launched
- Announcement that Product will be Discontinued
- Discontinued Date
Product Lifecycle Status Webpage

Product Lifecycle Status

Phased Migration: Existing Control System

Enabling Migration Tools:
• Installed Base Evaluation
• Integrated Architecture Builder
Phase 1: Logic Code Conversion & Monitor Mode

Making the decision to keep or replace HMI before performing controller code conversion will save time and money.

Using the 1756-RIO Module in “Monitor Mode” allows you check your logix before going live. The module reads the inputs but outputs are disabled.

Enabling Migration Tools:
- Logic Code Conversion Services or embedded software translation tools
- 1756-RIO Module
Phase 2: Controller Replacement

Making the decision to keep or replace HMI before performing controller code conversion will save time and money.

1756-DHRIO allows communication over the existing DH+ network.

Enabling Migration Tools:
- I/O Wiring Conversion System
- 1756-RIO Module

The I/O wiring conversion system allows replacement using existing wiring and mounting holes.

1756-RIO module configured as a scanner allows ControlLogix communications to RIO Adaptors located in remote racks.
Phase 3: HMI/EOI Migration

Enabling Migration Tools:
- HMI Application Code Conversion Services or embedded software conversion utilities
Phase 4: Remote I/O Replacement

With the I/O wiring conversion system, 1771 I/O racks can quickly be replaced with 1756 I/O without disturbing the field wiring...one rack at a time if necessary.

Enabling Migration Tools:
• I/O Wiring Conversion System
• 1756-RIO
Phase 4: Remote I/O Replacement & Network Upgrade

Enabling Migration Tools:
- I/O Wiring Conversion System
Enabling Migration Tools

- Installed Base Evaluation with Lifecycle Reporting
- Integrated Architecture Builder
- ProposalWorks™
- 1756-RIO Module
- Logic Code Conversion Services and Utilities
- HMI Application Conversion Services and Utilities
- I/O Wiring Conversion System
Migration Tools: Installed Base Evaluation

- Document the current system and Define the Final System Architecture
  - Determine scope of project
  - Identify reliability and longevity issues
  - Identify technical issues before they become major concerns
  - Perform an Installed Base Evaluation with Lifecycle Reporting:
    - Lifecycle Site Report
    - Lifecycle Location/Line Report
    - Lifecycle Machine Report
    - Lifecycle Panel Report
    - Plant Bill of Materials
    - Product by Location
    - Inventory Analysis

Red-Yellow-Green lifecycle coding identifies production status associated service risk

Documenting the Existing System and Defining the Final System Creates a Migration Roadmap.
Migration Tools: Integrated Architecture Builder (IAB)

- IAB includes a Migration Wizard specifically created for PLC-5 to ControlLogix migrations
  - helps you accurately convert an existing 1771 chassis to the equivalent 1756 counterpart
  - helps you determine any critical application considerations
  - picks out the necessary 1771 wiring conversion system components to greatly reduce your conversion time
    - selection of a mounting base
    - conversion modules for each I/O module
    - appropriate cabling
  - allows you to convert multiple chasses through a series of dialogs
Migration Tools: Integrated Architecture Builder (continued)

- IAB includes a Migration Wizard specifically created for PLC-5 to ControlLogix migrations
  - creates Bill of Material including:
    - fully configured 1756 chassis and modules
    - 1771 Wiring Conversion System accessories
    - 1756 swing arms (if Conversion Kit was not selected)
  - creates a Project Report detailing specification differences by module for Engineering to verify application concerns (see next slide for more details)
    - Full Bill of Material
    - Graphic representation of populated chassis
    - Cross reference table including 1771 module to 1756 equivalent (and any 1771 Wiring Conversion System accessories)
    - Application Considerations for each 1756 module included in Appendix at the end of the report
Migration Tools: 1756-RIO (Remote I/O) Module

- Communication performance equal to the existing PLC-5 system that it replaces
- Ideal solution for phased migrations
  - Allows the reuse of the Remote I/O network when multiple racks of PLC-5 and ControlLogix products will be communicating to one another
  - Can be configured as:
    - Scanner which allows migration of master PLC-5 rack first
    - Adapter which allows migration of remote 1771 I/O racks first (note that a processor is still required in the ControlLogix rack)
1756-RIO Performance

Full rack of Block Transfers

- 1756-RIO 56K
- PLC-5 56K

1756-RIO communication speed is equal to the PLC-5
1756-RIO Module (more detail)

- The 1756-RIO provides a Logix solution for communications over RIO
  - Transfer all data to/from module as normal I/O
    - Eliminates the MSG instructions and the confusion over tag names
    - Improved performance for data exchange with controller
  - Create a thin RSLogix 5000 I/O profile for the module
    - Allows you to configure how the controller talks to the module
    - Simplifies a portion of the configuration process (instance IDs and Sizes)
    - Provides a direct link to the module’s configuration tool
  - Communicate all chassis and module data in native INT (16 bit) format
    - Reduces data conversion processing by module which increases the performance of the module
    - Avoids conversion issues resulting from Boolean data
  - Embed Block Transfer Control and Status information into the data
    - Provides better visibility and control
    - Allows communications with all modules requiring Block Transfers
Migration Tools: Logic Code Translation Tool in RSLogix 5000

“Wizard-style” step-by-step dialogs guide the user through the translation process.

Updated and updateable controller list.
Migration Tools: I/O Wiring Conversion System
I/O Wiring Conversion System Components

- Cover Plate to attach 1756 Chassis
- Base Plate to house Conversion Modules
- D-shell Connector for 1492 Cable
- Conversion Modules

1756 Chassis and I/O
I/O Wiring Conversion System

Components

Mounting Assembly

Base Plate

Cover Plate

Conversion Modules

Cables
Migration Tools: EXPANDED I/O Conversion Cable Assemblies

Extension set of conversion cables for digital and analog modules

- Converts field terminations to match the compatible 1756 I/O module
- More information available in the I/O Wiring Conversion System Selection Guide

Digital Inputs and Outputs

Analog Inputs & Outputs
We give you notice, we give you options!

Rockwell Automation offers:
- Superior product longevity and communication throughout the lifecycle
- Phased Migration Strategy and Extensive Migrations Toolkit
- Global Solutions and Services

PLC-5 and 1771 I/O Migration Strategy from Rockwell Automation offers unmatched value:
- Typically saves 10 hours per rack of ten, 40-point I/O modules
- Lowers engineering and labor costs
- Reduces production downtime
- Reduces risk by eliminating potential wiring errors (preservation of existing field wiring)
For more information

- Visit the Literature Library:
  - Rockwell Automation Migration Solutions Brochure MIGRAT-BR002A-EN-P (May)
  - PLC-5 > ControlLogix Phased Migration Solution Profile
  - 1756-RIO Product Profile
  - 1492 I/O Wiring Conversion System Selection Guide
- Visit the E-tools Website:
  - Install Integrated Architecture Builder
  - Install ProposalWorks
- Visit the Silver Series Website
- Visit the Migration Solutions Website
- Visit the IA Tools Website
Thank you