Migration solutions

SLC™ 500 to CompactLogix™ 5380 control system

## Getting started: Analyzing your automation system

With industry knowledge and worldwide services support, Rockwell Automation will partner with you to ensure a smooth transition from your SLC™ 500 to CompactLogix™ 5380 control system.

STEP 1: Document existing system layout and define future system requirements

Begin your migration planning by documenting your existing system as a reference point.

This will enable you to consider the available options and find a solution that best meets your existing and future requirements.
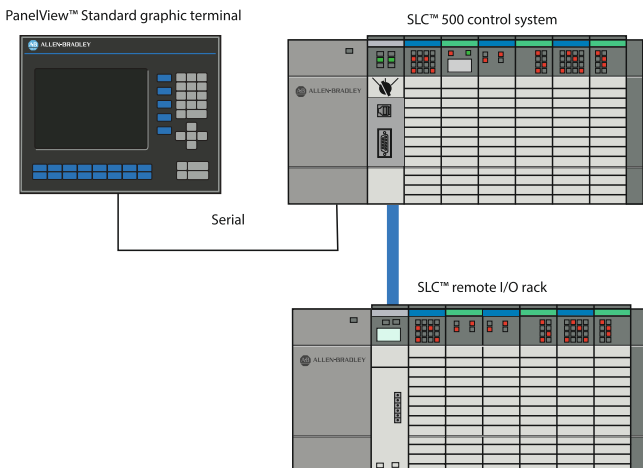
STEP 2: Plan migration

Once you have your overall migration approach, use Integrated Architecture® Builder (IAB) tool to help plan the details. The SLC migration wizard embedded in IAB will guide you through the system configuration process.

You can decide which are the components to reuse or replace. If you choose to reuse the SLC I/O, IAB will verify module support and power supply loading and help you lay out the new EtherNet/IP network. The 1492 I/O conversion system in IAB helps to minimize the risk of wiring errors by preserving existing field wiring connection during I/O conversion.

PanelView™ Standard graphic terminal

SLC™ 500 control system

Serial

SLC™ remote I/O rack
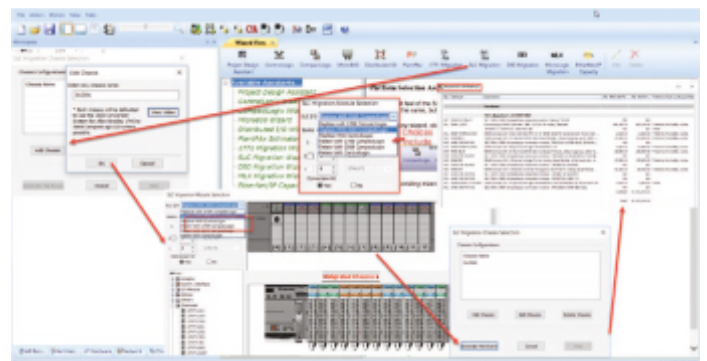
Moving forward: Executing your project

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.

PHASE 1: Application code conversion

Save time and engineering resources when converting your SLC™ 500 application code by using the embedded conversion utilities in RSLogix 5000® or Studio 5000 Logix Designer® application. Converting your PanelView™ Standard application to a PanelView Plus 7 application is as simple as importing the existing project into FactoryTalk® View Machine Edition software.
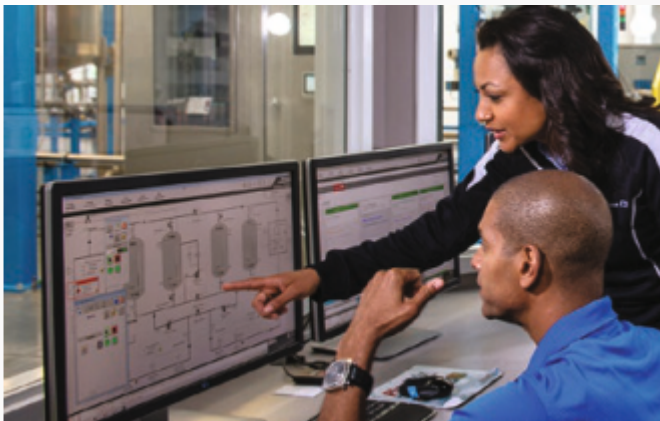
Advantages of application code:
- Converts code using automated code conversion
- Leverages powerful constructs and features to improve the application

Advantages of Human Machine Interface (HMI) application:
- No further modification will be required, most of the time
- Utility generates conversion log, which identifies features that are not supported by the selected new hardware
- Enhanced features and graphics
- Better integration with controllers

PHASE 2: Replace the SLC controller and/or module

Mount and wire the CompactLogix™ 5380 system and replace the SLC first slot module (SLC processor or communication module) with the SLC EtherNet/IP™ communication module (1747-AENTR). Using this module helps you retain your existing SLC I/O and preserve existing field wiring, while allowing your SLC I/O chassis to be controlled from your new CompactLogix controller. This approach simplifies the migration process, reduces risks associated with rewiring the I/O and saves valuable time, which allows you to get your application into production quickly.

PanelView™ Plus 7 graphic terminal
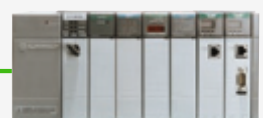
CompactLogix™ 5380 controller

EtherNet/IP™

SLC™ I/O with 1747-AENTR module
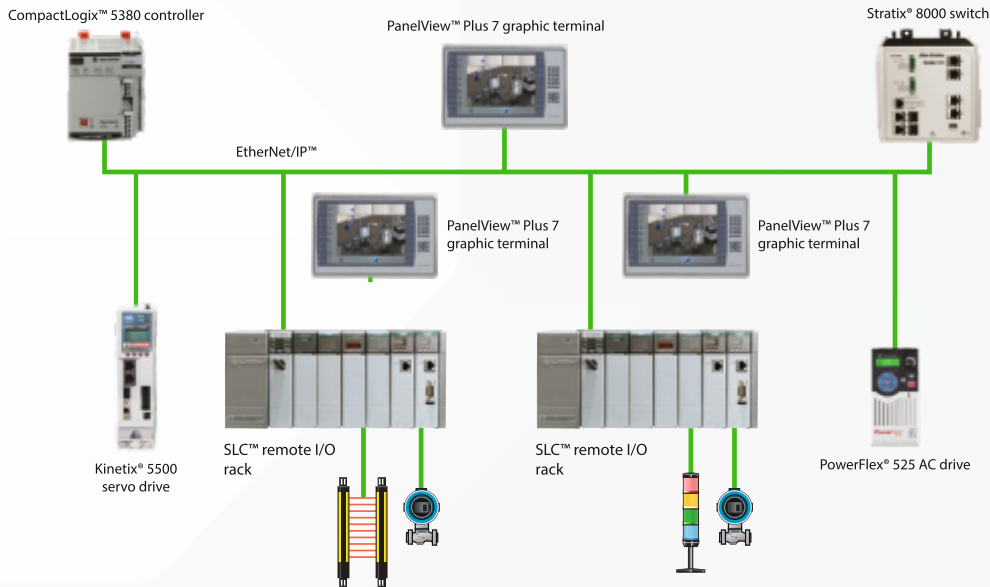
SLC™ I/O with 1747-AENTR module

Advantages:
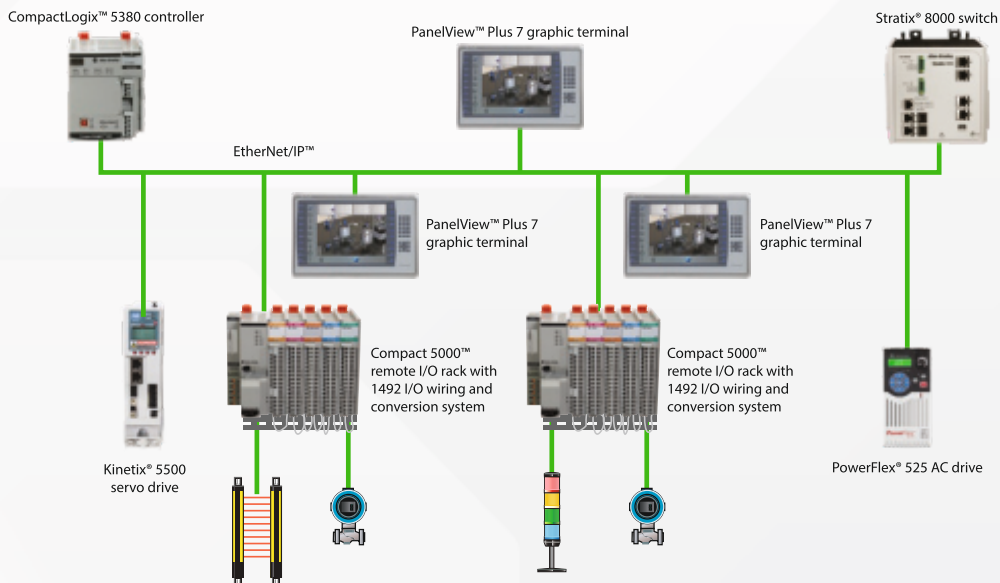- Maintain existing field wiring
- Ability to revert to SLC I/O, if needed

PHASE 3: Replace other system hardware and review investment

If your control system has legacy or competitive variable speed drives, motion control, sensors, or motor control centers, Rockwell Automation can help migrate those products as well. We have a worldwide service group that can do the migration work, assist and train operators or provide the maintenance services once the migration is complete. We can also review your network needs and asset management for your entire facility.

CompactLogix™ 5380 controller
PanelView™ Plus 7 graphic terminal
Stratix® 8000 switch
EtherNet/IP™
PanelView™ Plus 7 graphic terminal
PanelView™ Plus 7 graphic terminal
Kinetix® 5500 servo drive
SLC™ remote I/O rack
SLC™ remote I/O rack
PowerFlex® 525 AC drive

PHASE 4: I/O replacement

In the final phase of the migration process, the 1492 I/O conversion system is used to replace SLC™ 500 with CompactLogix™ 5380 control system. Because I/O replacement represents a large investment, we provide an approach that is right for your schedule and budget. The 1492 I/O conversion system allows I/O conversion from SLC™ I/O to the Compact 5000™ I/O without removing existing field wiring connections. This helps to reduce conversion time, labor costs and reduce potential downtime risk that could result from wiring mistakes during the migration. Planning your migration is more manageable as the I/O can be swapped one rack at a time or all at once. In either case, you can run both new and old I/O architectures simultaneously. Additionally, I/O cross-reference documentation assures correctness and provides historical backup for future troubleshooting or diagnostics.

CompactLogix™ 5380 controller
PanelView™ Plus 7 graphic terminal
Stratix® 8000 switch
EtherNet/IP™
PanelView™ Plus 7 graphic terminal
PanelView™ Plus 7 graphic terminal
Kinetix® 5500 servo drive
Compact 5000™ remote I/O rack with 1492 I/O wiring and conversion system
Compact 5000™ remote I/O rack with 1492 I/O wiring and conversion system
PowerFlex® 525 AC drive

Supporting Your Migration

With industry knowledge and worldwide service and support, Rockwell Automation will collaborate with you to help ensure a smooth transition from your MicroLogix 1500 controllers to either MicroLogix 1400 or CompactLogix controllers. Here's how:

STEP 1: Plan Your Migration

Once you planned your overall migration approach, let the Integrated Architecture Builder (IAB) help plan the details. The MicroLogix migration wizard that is embedded in IAB will step you through the system configuration process, helping you to decide on the components you prefer to keep and reuse, and the components you prefer to replace.

Tools: Integrated Architecture Builder (IAB), SLC/MicroLogix 1500 to CompactLogix Migration Guide (Publication 1769-AP001).
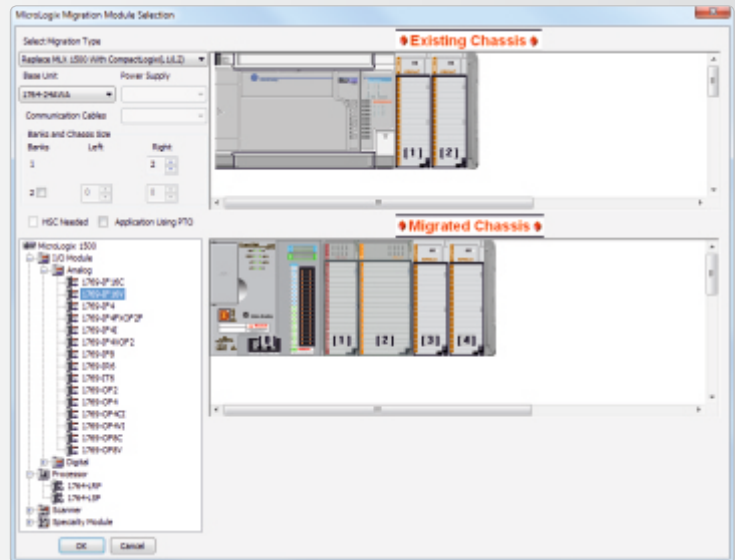
STEP 2: Application Code Conversion

Save time and engineering resources by using the conversion utility for RSLogix Project Migrator. This tool converts your existing RSLogix 500 program to Logix project. Using this tool makes the conversion more cost effective and provides greater flexibility regarding the final product. Download this tool, which is a product add-on for Studio 5000® environment, from the Product Compatibility and Download Center.

Tools: RSLogix Project Migrator, SLC/MicroLogix 1500 to CompactLogix Migration Guide (Publication 1769-AP001).
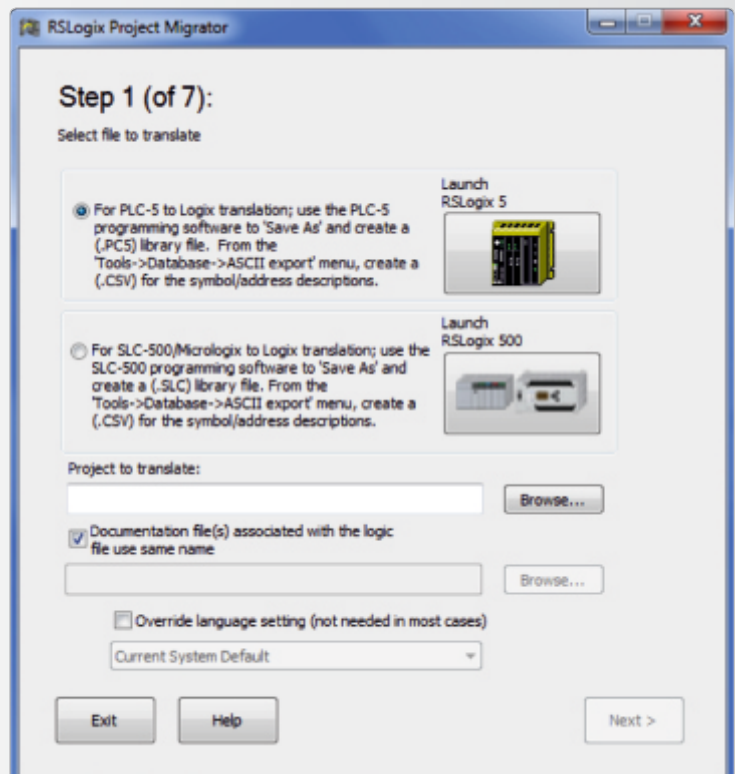
MicroLogix 1500 Controller Compared to MicroLogix 1400 Controller and CompactLogix Controller

Features	MicroLogix 1500 Controller	MicroLogix 1400 Controller	CompactLogix 5370 L1 Controller	CompactLogix 5370 L2 Controller
Memory (in user words)				
Memory (user program / user data)	3.6 KB / 4 KB 1764-LSP, 10 KB / 4 KB 1764-LRP	10 K / 10 KB	384 KB / 512 KB (User memory)	750 KB / 1 MB (User memory)
Online editing	N/A	Yes	Yes	Yes
Inputs/ Outputs				
Embedded Digital I/O, max	28	32	32	32
Embedded Analog I/O	N/A	Four 0…10V DC inputs Two 0…10V DC outputs	N/A	Four universal analog inputs Two analog outputs
Local Expansion I/O Supported	512	256	Max. six / eight 1734 POINT I/O Modules Use 1769-AENTR with 1769 I/O modules	Up to four 1769 I/O modules
Networked Expansion I/O, max	DeviceNet™ network using 1769-SDN scanner	N/A	Multiple I/O module product lines over an EtherNet/IP™ network via built-in EtherNet/IP Network ports	Multiple I/O module product lines over DeviceNet via a 1769-SDN module and EtherNet/IP networks via built-in EtherNet/IP Network ports
Added Functionality				
Trim Potentiometers	2	2 (digital)	N/A	N/A
PID	Yes	Yes	Yes	Yes
High Speed Counters (embedded)	Two @ 20 kHz	Up to six @ 100 kHz	N/A	Four embedded high-speed counters
PWM Support	2 @ 20 kHz	3 @ 40 kHz	N/A	N/A
PTO Support	2 @ 20 kHz	3 @ 100 kHz	AMCI 3601, 1 @ 1 MHz	AMCI 3602, 2 @ 200 kHz
Real-Time Clock	Optional	Yes	Yes	Yes
Recipe Storage	Uses user program memory or 48 KB data logging memory	Uses up to 64 KB data logging memory	Yes	Yes
Data Logging	48 KB	128 KB	Yes	Yes
Floating Point Math	Yes	Yes	Yes	Yes
Operating Power				
120/240V AC	Yes	Yes	N/A	N/A
24V DC	Yes	Yes	Yes	Yes
Communication				
RS-232 Ports	Two RS-232 ports	One RS-232 port One RS-232/RS-485 port	N/A	N/A
USB Port	N/A	N/A	1 USB	1 USB
DeviceNet Peer-to-peer Messaging, Slave I/O	With 1769-SDN	N/A	N/A	With 1769-SDN
EtherNet/IP	With 1761-NET-ENI or 1761-NET-ENIW	Single EtherNet/IP port	Dual-port EtherNet/IP support	Dual-port EtherNet/IP support
DH-485	Network with 1761-NET-AIC	Network with 1763-NC01	N/A	N/A
SCADA RTU - DF1 Half-duplex	Yes	SCADA RTU - DF1 half-duplex master/slave	N/A	N/A
SCADA RTU - DF1 Radio Modem	Yes	Yes	N/A	N/A
SCADA RTU - Modbus RTU Master/Slave	Yes	Yes	N/A	N/A
Modbus TCP	N/A	Yes	MVI69-MNET	MVI69-MNET
ASCII - Read/Write	Yes	Yes	Use 1734-232ASC or 1734-485ASC	Use 1769-ASCII
CIP Serial	N/A	N/A	Yes	Yes
Agency Certifications				
CE, RCM, EAC, KC, UL, and C-UL (including Class I, Division 2 Hazardous Locations)	Yes, except KC	Yes, except KC	Yes	Yes

Why Upgrade or Migrate?

The MicroLogix™ 1100 and MicroLogix 1200 controllers have been valuable products in our Allen-Bradley controller portfolio for over two decades. Along with industry-leading reliability for the products,protecting our customers' automation investments is why manufacturers have selected over 2 million MicroLogix controllers to run their industrial processes.

As market needs of industry and application requirements have evolved, and as available technology improved, we have introduced the Micro800® controller platform with expanded capabilities. This newer control system offers greater features and superior performance.

Designed for large standalone machine applications, the Micro870™ controller offers a cost-effective and customizable solution to help machine builders reduce development time and improve user programreadability. As the latest expandable and powerful controller within the Micro800 family, the Micro870 controller aids designers to develop flexible and configurable machine design, and improve productivity with easy network connectivity at the convenience of a single programming software.

Discover the value of the Micro870 controller today! Begin your modernization journey with Rockwell Automation as your partner.

MicroLogix 1500 Controller Compared to MicroLogix 1400 Controller and CompactLogix Controller

Features	MicroLogix 1100 Controller	MicroLogix 1200 Controller	Micro870 Controller
Memory (in user words)			
Memory (user program/user data)	4 KB / 4 KB	4 KB / 2 KB	20 K Program Steps / 280 KB
Non-volatile Program and Data	Battery back-up SRAM	Flash (No Battery)	FRAM (No Battery)
Online Editing	Yes	N/A	Run Mode Change
Inputs / Outputs			
Embedded Digital I/O, max	16	40	24
Embedded Analog I/O	Two 0 … 10V inputs on all controllers	N/A	Optional with 2080-IF2
Local Expansion I/O, max	144	96	304
Thermocouple/RTD	Expansion I/O	Expansion I/O	Plug-in modules, Expansion I/O
Added Functionality			
Trim Potentiometers	2 (digital)	2	Yes, with PID AutoTune
PID	Yes	Yes	Yes, with PID AutoTune
High Speed Counters (embedded)	1 @ 40 kHz	1 @ 20 kHz	Up to 4 @ 100 kHz
Motion: PTO/PWM Support	2 @ 40 kHz	1 @ 20 kHz	2 @ 100 kHz
Real-Time Clock	Yes	Optional with 1762-RTC	Optional with 2080-MEMBAK-RTC2
Recipe Storage	Uses up to 64 KB data logging memory	N/A	N/A
Data Logging	128 KB	N/A	N/A
Floating Point Math	Yes	Yes	32 bit and 64 bit

Features	MicroLogix 1100 Controller	MicroLogix 1200 Controller	Micro870 Controller
Operating Power			
120/240V AC	Yes	Yes	Via power supply module, 2080-PS120-240VAC
24V DC	Yes	Yes	Yes
Communication			
Communication Ports	RS-232/RS-485 serial port, Ethernet	RS-232 serial port	RS-232/RS-485 serial port, Ethernet, USB
EtherNet/IP™	Yes	With 1761-NET-ENI or 1761-NET-ENIW	Yes
DH-485	Network with 1763-NC01	Network with 1761-NET-AIC	N/A
SCADA RTU - DF1 Half-duplex Slave	Yes	Yes	N/A
SCADA RTU – Modbus RTU Slave	Yes	Yes	Yes
SCADA RTU – Modbus RTU Master	Yes	Yes	Yes
Modbus TCP	N/A	N/A	Yes
ASCII – Read/Write	Yes	Yes	Yes
CIP Serial	N/A	N/A	Yes

Supporting Your Migration

With industry knowledge and worldwide service and support, Rockwell Automation will collaborate with you to help ensure a smooth transition from your MicroLogix™ controllers to the flexible and scalable Micro800® controller platform. Here's how:

STEP 1: Plan Your Migration

Once you planned your overall migration approach, let the Integrated Architecture® Builder (IAB) help plan the details. The MicroLogix Migration Wizard embedded in IAB will step you through the system configuration process, helping you to decide on which Micro800 controller to migrate to. The wizard will propose the additional Micro800 plug-in modules to match the I/O size and the type of MicroLogix controller.
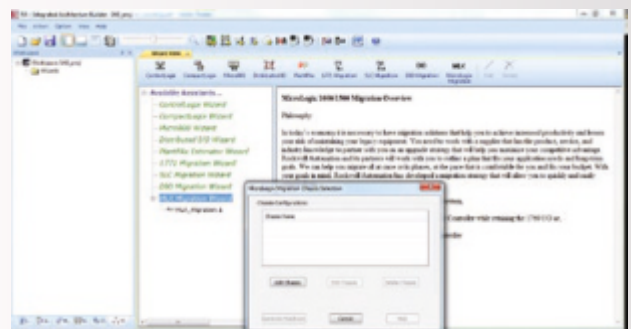
Tools: Integrated Architecture Builder (IAB), Popular Configuration Drawings, MicroLogix 1000 to Micro800 Migration Guide Publication 2080-RM002.

STEP 2: Application Code Conversion

Help save time and engineering resources by using the MicroLogix to Micro800 Converter Tool. This tool helps you to convert your existing RSLogix 500® program to Connected Components Workbench™ project. The MicroLogix to Micro800 Converter Tool Version 4.00 is available in Connected Components Workbench™ Software Version 11.00 or later.

Tools: Connected Components Workbench Software Version 11.
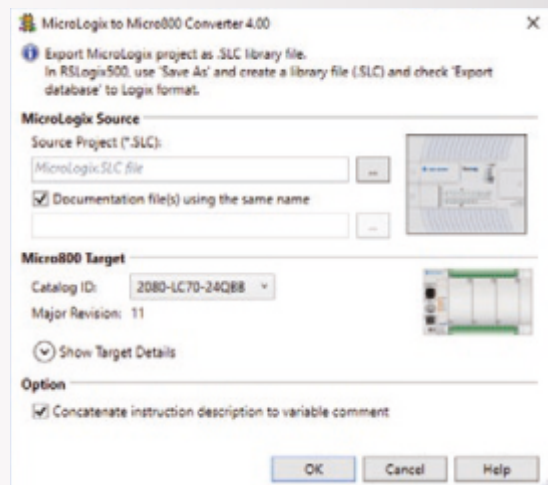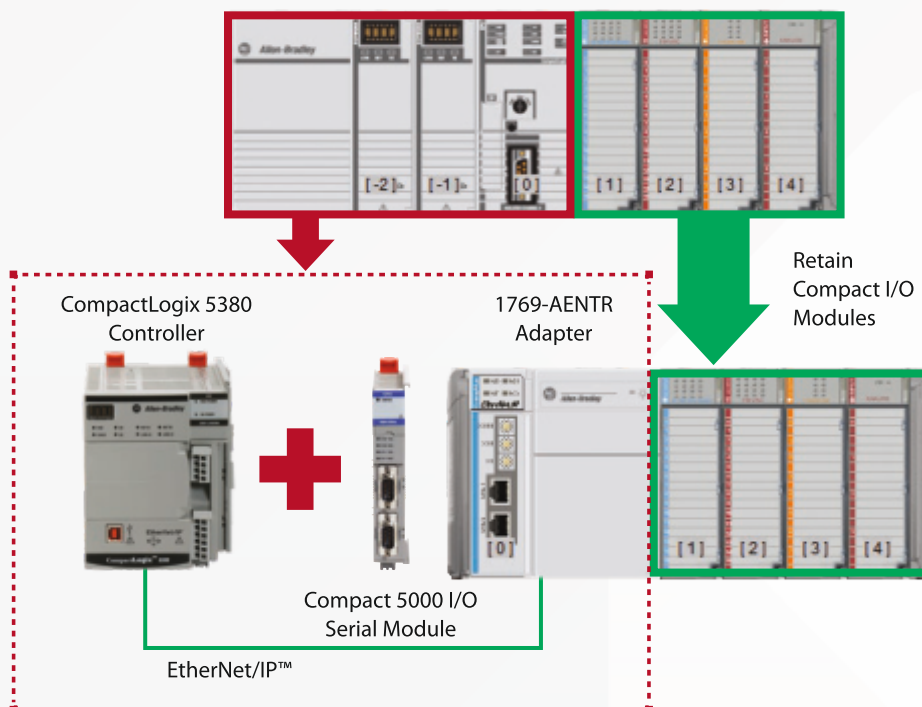

Typical CompactLogix 1768-L4x Controller System
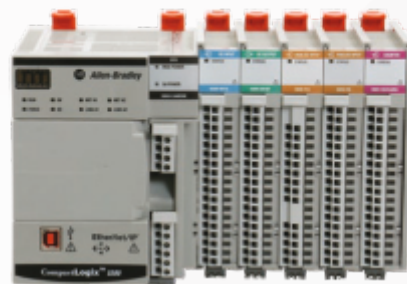
CompactLogix 5380 Controller and Compact 5000 I/O System

Typical CompactLogix 1768-L4x Controller System

CompactLogix 5380 Controller

1769-AENTR Adapter

Retain Compact I/O Modules

Compact 5000 I/O Serial Module

EtherNet/IP™

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