

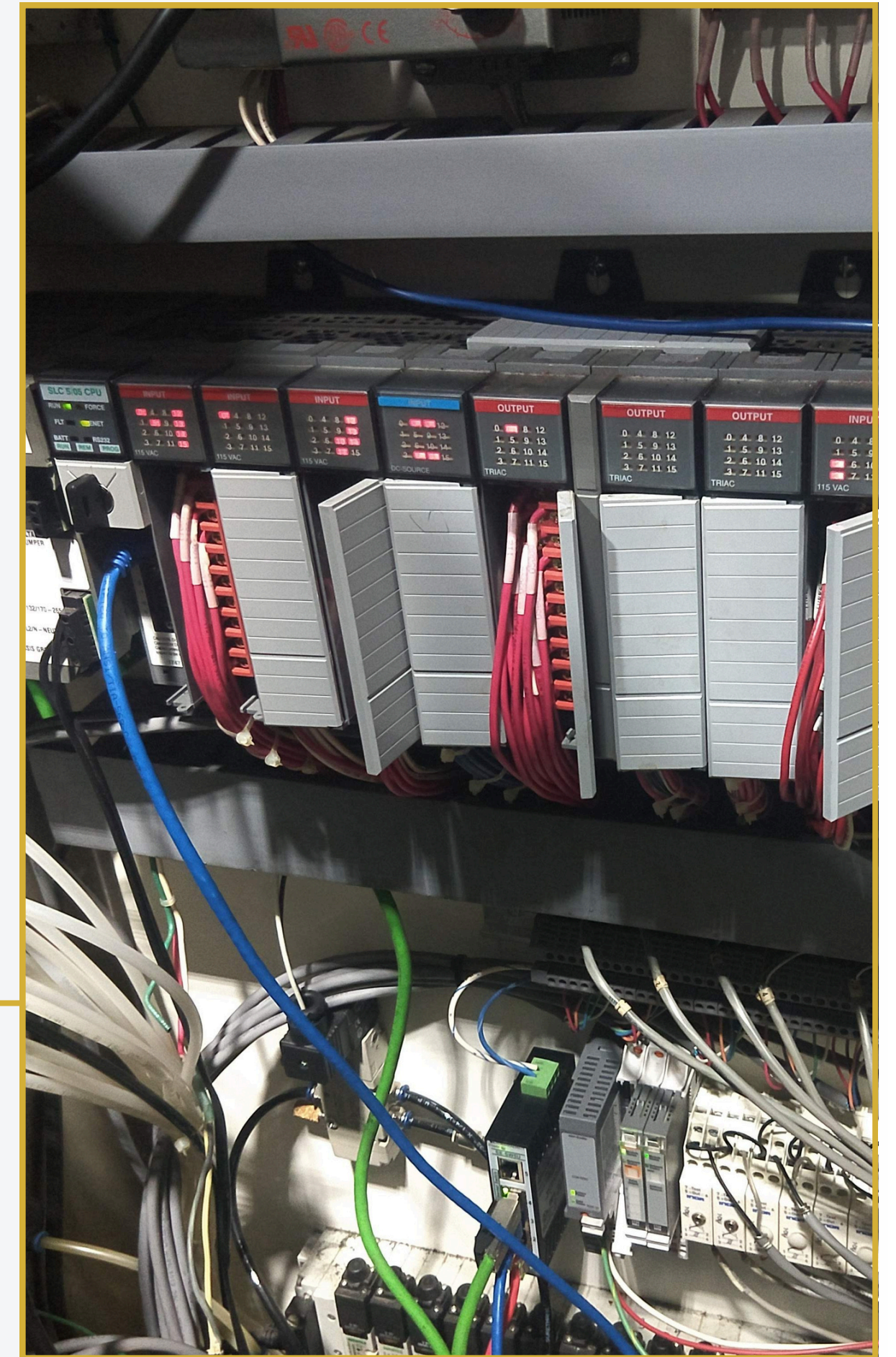


Joltek | Enabling Reliable, Modern, and Connected Manufacturing

Strategic Consulting and Execution for Digital Operations

Consulting • Modernization • Digital Strategy

Technical Guide - Migration from the Rockwell Automation SLC 500 platform.



Why Migrate from SLC 500 Deployments

Plants rarely migrate SLC 500 because they want a newer PLC. They migrate because **the operating model around the controller has become fragile.**

- Difficulty sourcing spare parts or relying on uncertain aftermarket inventory.
 - Per official documentation from Rockwell, many PLC and IO modules have been discontinued.
 - Ref: <https://www.rockwellautomation.com/en-us/support/product/product-compatibility-migration/product-lifecycle-status.html>
- The architecture belongs to an earlier era of industrial automation and software.
 - Ex: comments aren't stored on the PLC, less protection against programming mistakes, limited number of connections, unavailability of complex instruction sets, etc.
 - Limited access to modern hardware environments for process and motion designs.
 - Backplane and communication doesn't support CIP. Limited access to Rockwell's modern integrated motion ecosystem.
- Weaker fit for modern security expectations.
 - SLC deployments usually require more compensating controls and more legacy exceptions.
 - Older controller environments are harder to align with current remote access and governance standards.
- Various challenges integrating with the modern plant networks and requirements.
 - Limited number of connections for distributed architectures, SCADA, MES, & other purposes.
 - Obsolete communication protocols incompatible with modern system architectures.
 - Challenges in data extraction & filtering based on RSLogix 500 programming.



Average cost of unplanned downtime in manufacturing: \$260,000 per hour. - Don't let an old SLC 500 be that cause!

General SLC 500 Platform Overview

Understanding the **controller families**, chassis options, and module variety behind the installed base.

- **5 Distinct families of PLCs.**

- **SLC 5/01** - 1747-L511, 1747-L514
- **SLC 5/02** - 1747-L524
- **SLC 5/03** - 1747-L531, 1747-L532, 1747-L533
- **SLC 5/04** - 1747-L541, 1747-L542, 1747-L543
- **SLC 5/05** - 1747-L551, 1747-L552, 1747-L553

Main Capabilities

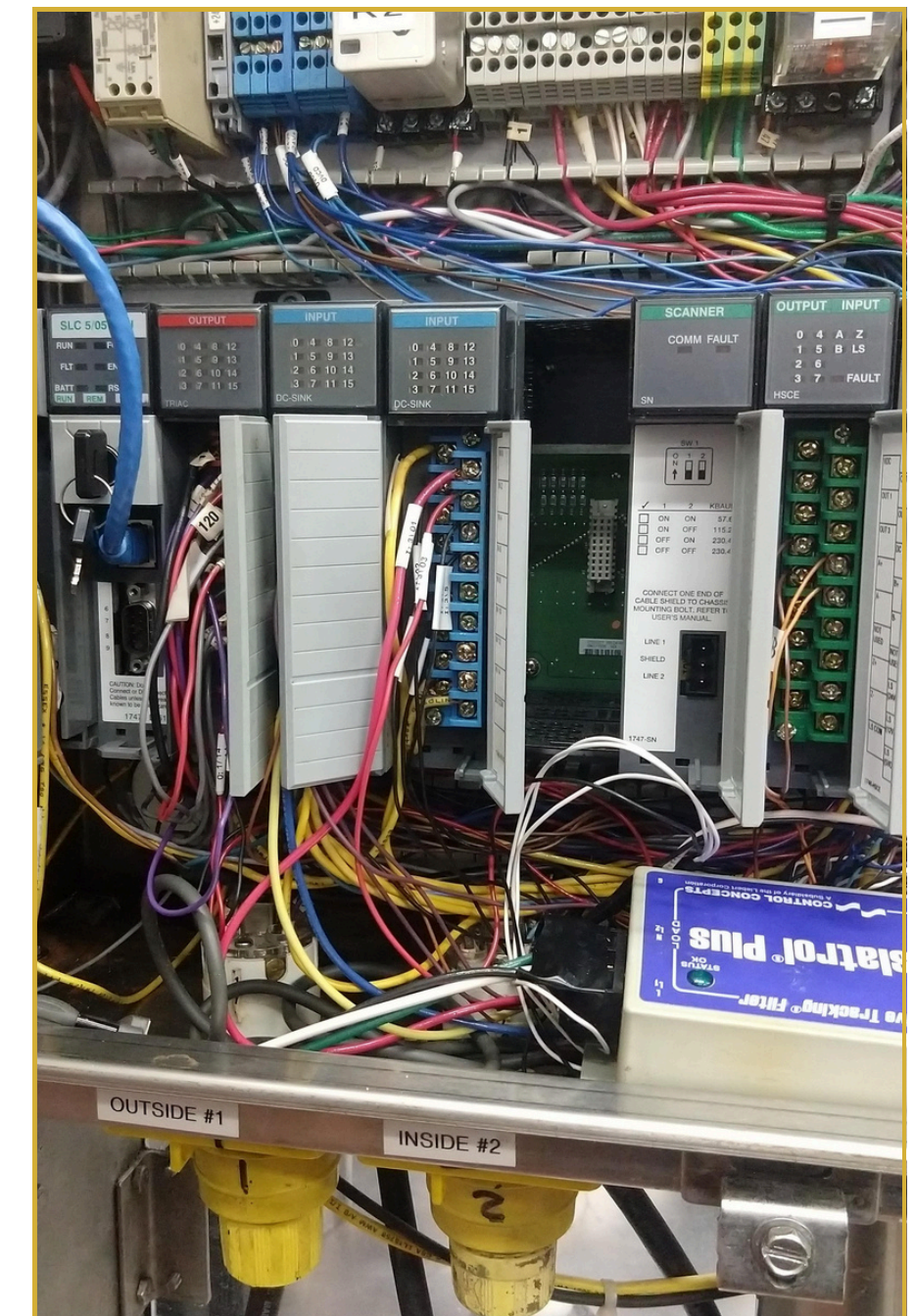
- 1K, 4K Memory, DH-485 Slave
- 4K Memory, DH-485
- 8K, 16K, 32K Memory, DH-485, RS-232
- 16K, 32K, 64K Memory, DH+, RS-232
- 16K, 32K, 64K Memory, Ethernet, RS-232

- **3 Chassis Sizes.**

- 4-Slot
- 7-Slot
- 13-Slot

- **Vast selection of I/O Modules.**

- **Digital I/O:** DC, AC, Relay
- **Analog I/O:** Voltage, Current
- **Process modules:** Temperature, RTD, Counter
- **Specialty modules:** Motion, Stepper, High Speed, Blow Molding
- **Communications:** ControlNet, DeviceNet, DH+, Remote I/O



Broad hardware variation is one reason SLC 500 migrations are rarely simple controller swaps.

Proposed Options & Approaches

Selecting the right migration path depends on **downtime tolerance, compatibility, and future standards.**

Upgrade to an SLC 5/05 PLC

- **Best for:** short-term Ethernet access to an existing rack
- **What it does:** adds easier programming, remote access, and backups
- **Limitation:** does not solve core obsolescence or spare parts risk

Upgrade to an 1747-AENTR card

- **Best for:** phased migration where downtime is limited
- **What it does:** keeps hardware of the existing SLC rack while moving control to Logix
- **Limitation:** requires compatibility review of processor, software, and installed modules

Upgrade to CompactLogix OR ControlLogix

- **Best for:** long-term modernization and standardization
- **What it does:** moves the application to a current Rockwell Automation platform
- **Limitation:** highest engineering effort, but strongest long-term result



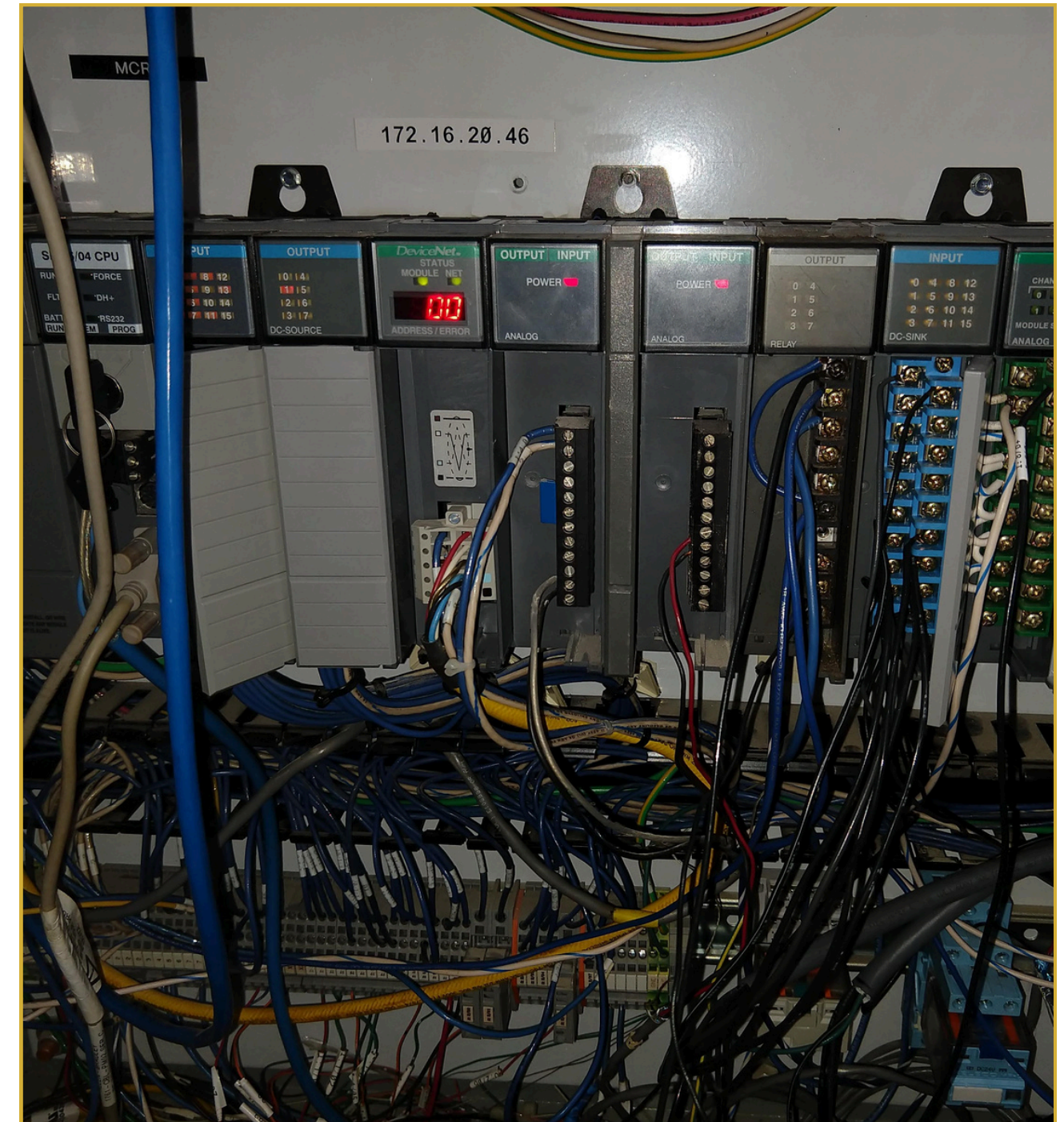
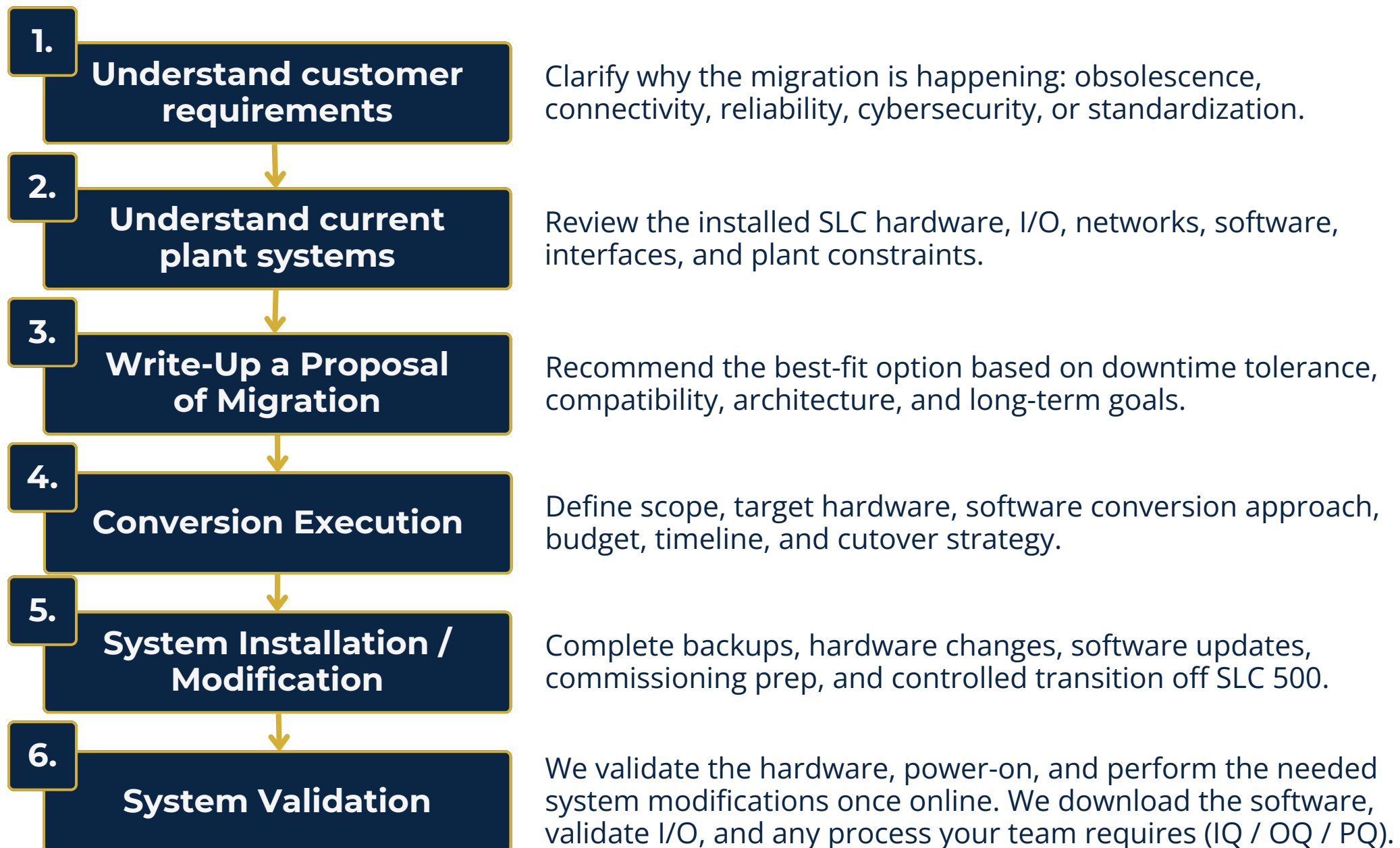
Key Considerations

- Moving to the SLC 5/05 does not solve spare part challenges; it is meant as a step to remote connectivity and easier analysis of the system.
- Migration to a 1747-AENTR module requires an assessment and planning. This typically depends on the “master” PLC used, the version of RSLogix or Studio 5000 it’s running, and the cards / peripherals currently tied to the SLC 500 rack. (Ex: Certain ControlNet, DeviceNet, DH+ modules aren’t as straightforward to migrate as general I/O)
- In addition to the above, the migration to a standalone rack on the CompactLogix or ControlLogix platform requires consideration of the current architecture of the plant. As Rockwell Automation has many I/O and PLC lines, it’s advised to select based on the current deployments between 1734, 1769, 1756, 5069, and 5034 as they all have variations of PLCs associated with them.

The Name on the Hardware Does Not Eliminate the Complexity Behind It.

Joltek Delivery Approach for SLC 500 Migrations

A practical, risk-based process to move from **legacy SLC 500 control** to a **supportable modern platform**.



A successful migration is not just a hardware swap. It is a controlled transition in risk, architecture, and supportability.



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Questions?

**Feel free to reach out with
questions or inquiries.**

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Modernization doesn't start with technology: it starts with understanding what truly needs to change.

