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Introduction to Logix Controllers

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Agenda

1. Brief Lab Overview

2. Logix Family Overview

3. ControlLogix Platform

4. CompactLogix Platform

5. RSLogix5000 Software

Brief Lab Overview

- This session provides you with an opportunity to explore the Logix5000 platform.
- In this hands-on lab, you will...
 - Learn the primary advantages of Logix5000 controllers
 - Design, create, and download programs to a Logix5000 controller
 - Examine a controller executing a program

CompactLogix

1769-L35E

Demobox



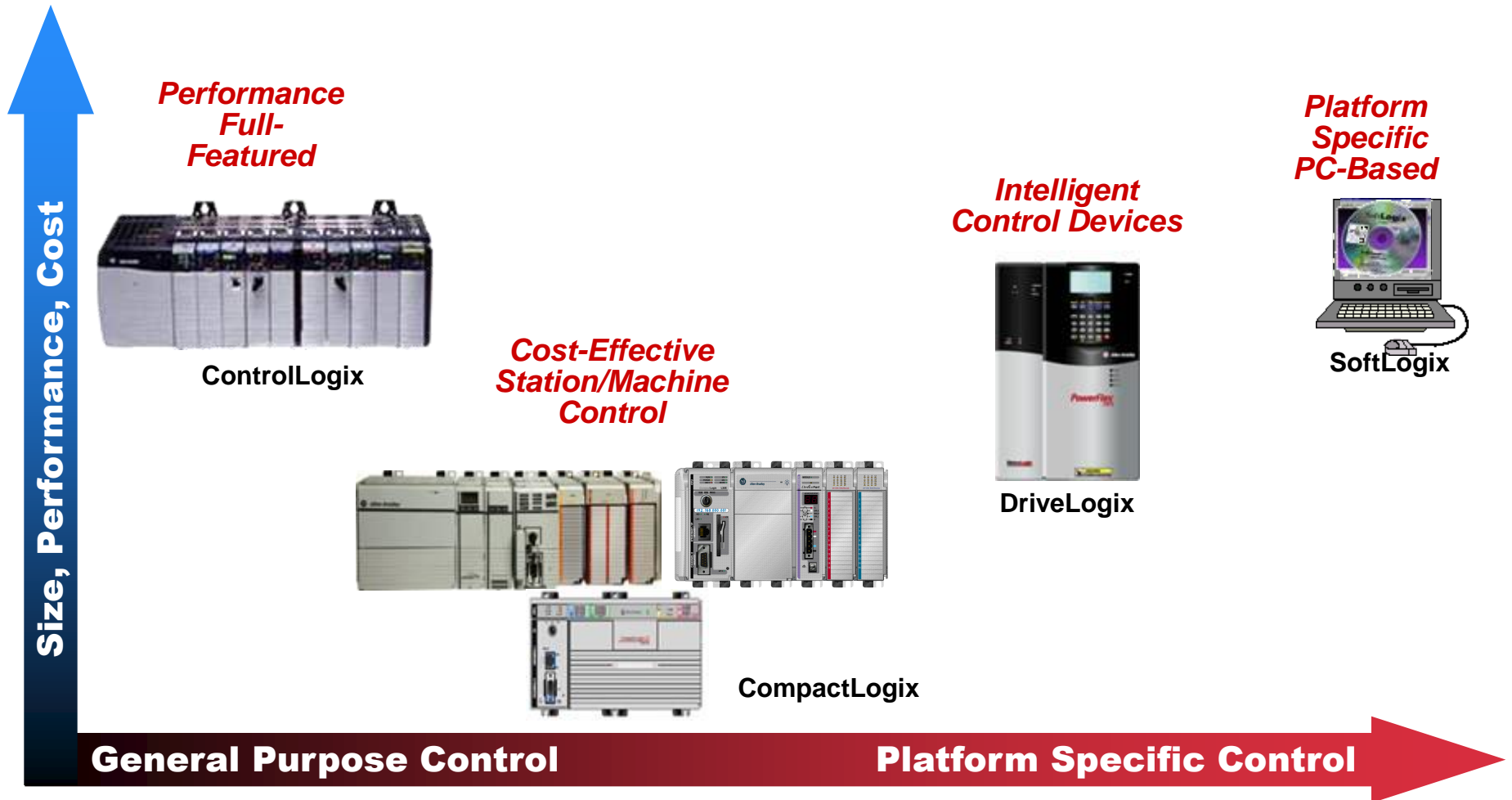
Integrated Architecture™ - PAC control



Logix Family Overview

“Which Logix Platform Fits your application?”

Logix scalability addresses the need of a single technology over a broad range of possible applications



Logix Family 2010 - 2011

Capability



Choose the hardware platform that fits the application need!

List Price

ControlLogix Family

- Communications
 - EtherNet/IP
 - ControlNet
 - DeviceNet, DH+, RIO, & DH-485 networks
- I/O
 - Supports large number of digital and analog I/O
 - Supports multiple I/O platforms
- Memory
 - Ranging from small distributed to large centralized applications – 2 MB to 32 MB internal user memory
 - Non-volatile options (removable memory card)



ControlLogix L7x Hardware Overview



- New faster CPU
 - Dual Core Processor provides 2x performance improvement for standard applications as compared to L6x controllers
- Enhanced SDRAM memory
 - Provides faster and more robust reads and writes
- On-board 4-character display providing
 - Enhanced controller diagnostics, runtime and health information.
- USB 2.0 port
 - Runs at full-speed (12 mb/s)
 - Device port – Temporary connection only
 - Improved performance for flashing firmware, upload/downloads, on-line edits and bridging to the backplane

ControlLogix L7x Hardware Overview

Energy Storage Module - (ESM) technology

- Eliminating maintenance, transportation, and environmental issues associated with lithium batteries
- Provides approx. 5 days of wall clock power
- Ships with every L7x controller



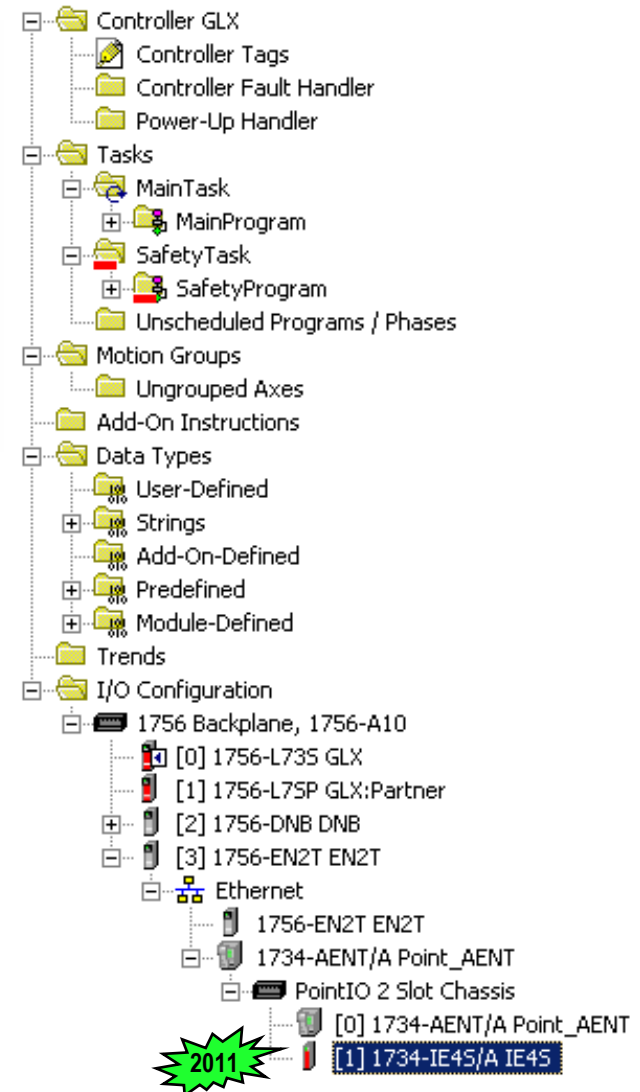
Removable Secure Digital (SD) memory card.

- Faster reads and writes compared to CompactFlash
- Rated for use in SIL 2 applications
- Same capabilities as CompactFlash card in L6x controller
 - Application/Project storage
 - Firmware Supervisor
 - Run time tag data read/write
- 1 GB SD card ships with every L7x controller



****1756-5571(2 MB) version available soon!**

ControlLogix Family: GuardLogix®



- ControlLogix with integrated Safety
- Certified to SIL3 (IEC 61508) CAT4 (EN 954-1)
- Safety and Standard, One Project
 - Upload / Download one project
 - Safety Data available to Standard Task (Read Only)
 - Passing of Standard Data to Safety Task
 - Leverage existing hardware (Chassis, PowerSupplies, Comms.)
 - Safety I/O with Ethernet/IP and/or DeviceNet Safety
 - Revision control – safety signature

1756/1794 Extreme Environment (Logix-XT)

- Wide Temperature Range
 - 1756-XT **-25 C to 70 C (-13 F to 158 F)**
 - 20 C to 70 C (-4 F to 158 F) for phase 1 - FLEX-XT
 - Convection cooling no fans!
- Atmospheric Protection 1756-XT
 - G2 and G3 Environmental Capability
 - 1756 XT Modules Conformal Coated
 - Option for phase 1 - FLEX-XT
- Environmentally hardened components
 - High reliability
 - Lifetime in extreme environments
 - Environmentally demanding applications



System Components

1756 ControlLogix XT

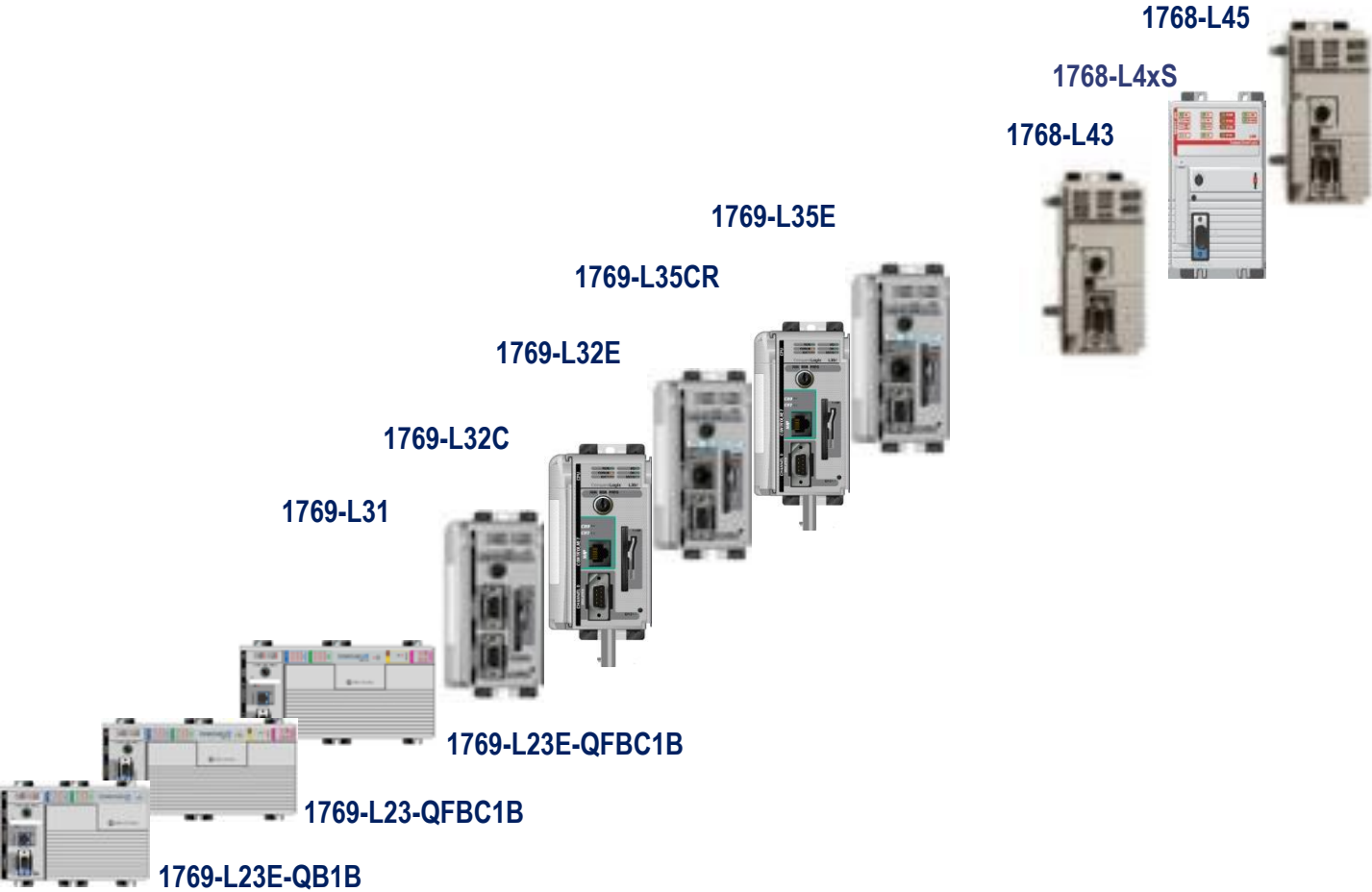
- Controller (1756-L63XT)
- Redundancy Module (1756-RMXT)
- Communication (1756-CN2XT, -EN2TXT)
- Power Supply (1756-PBXT, -PAXT)
- Chassis (1756-A4LXT, -A5XT, -A7LXT)
- Slot Filler (1756-N2XT)

1794 FLEX XT

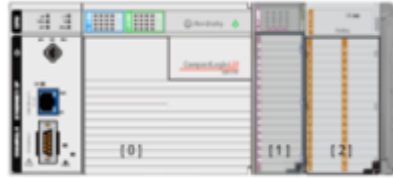
- Digital (1794-IB16XT, -OB16XT, -OB8EPXT, IB10XOB6XT, -OW8XT)
- Analog (1794-IE8XT, -OE4XT, -IE4XOE2XT, -IF4IXT, -OF4IXT, -IF2XOF2IXT)
- Specialty (1794-IR8XT, -IRT8XT, -IJ2XT)
- Communication (1794-ACNR15XT)
- All terminal bases and cable accessories

Alt. Energy (Wind Turbine), Oil & Gas, Refinery, Food & Beverage, Aerospace

CompactLogix Product Road map



CompactLogix L23x System Product Features



| Catalog | 1769-L23E-QB1B | 1769-L23-QBFC1B | 1769-L23E-QBFC1B |
|------------------------------|---|--|---|
| Memory | 512KB | | |
| Built-in I/O | 16 DCin, 16 DCout | 16 DCin, 16 DCout 4 Analog in, 2 Analog out 4 high speed counters (250KHz) | |
| Built-in Communication Ports | 1 - EtherNet/IP and 1 - RS-232 serial port | 2 - RS-232 serial ports | 1 - EtherNet/IP and 1 - RS-232 serial port |
| EtherNet/IP Connections | 8 TCP/IP – 32 CIP | n/a | 8 TCP/IP – 32 CIP |
| Expansion Modules | 2 1769 modules (any) | 2 1769 I/O modules or 1 1769 communication module | 2 1769 I/O modules or 1 1769 communication module |
| Communication Options | EtherNet/IP, DeviceNet, 3 rd Party | | |
| Serial Port Communications | ASCII, DF1 full/half duplex, DF1 radio modem, DH-485 and Modbus (via program) | | |
| Simple Motion | Stepper, DeviceNet indexer, Analog or networked AC drive | | |
| Integrated Motion | n/a | | |
| Programming Languages | Relay ladder logic, function block diagram, structured text and SFC | | |
| Controller Tasks | 3 tasks – continuous, periodic or event | | |

Ideal for stand-alone and small packaged control applications

CompactLogix L3x System Product Features

- 1769 Backplane
- Ethernet/IP, ControlNet, or Serial processor communications
- 750 KB – 1.5 MB user memory
- DeviceNet network capability with 1769-SDN
- DIN rail or panel mount
- Power Isolation between banks of I/O
- Single processor for both application and I/O



Mount up to 3 Banks vertical



Mount up to 3 Banks horizontal



CompactLogix LxER Family Scalability

Models: (3 Catalogs)

L16ER
 L18ER (Ethernet)
 L18ERM (Ethernet + 2 axis CIP motion)
Memory: 384KB, 512KB
Built-in DC I/O: 16in, 16out
Expansion: 6 1734 I/O modules for L16ER, 8 1734 I/O modules for L18ER and L18ERM
Remote : 4 or 8 remote devices (EIP)

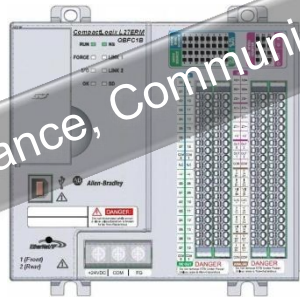


L1 Controllers

Small Stand-Alone & Ancillary Equipment Controller

Models: (3 Catalogs)

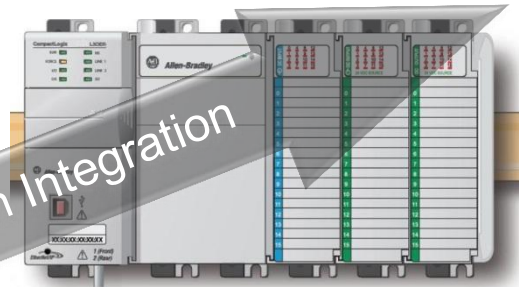
L24 ER-QB1B
 L24ER-QBFC1B (Ethernet)
 L27ERM QBFC1B (Ethernet + 4 axis CIP motion)
Memory: 768KB, 768KB, 1MB
Built-in DC I/O: 16in, 16out
Built-in Speciality I/O: (L24ER-QBFC1B & L27ERM-QBFC1B)
 4 HSC, 4 universal analog in/2 analog output
Expansion: 4 1769 I/O modules
Remote: 8 or 16 remote devices (EIP)



L2 Controllers

Small Machine Controller

L3 Controllers



Models: (6 Catalogs)

L30ER, L33ER (Ethernet)
 L30ERM (Ethernet + 4 axis CIP motion)
 L33ERM (Ethernet + 8 axis CIP motion)
 L36ERM (Ethernet + 16 axis CIP motion)
Memory: 1MB, 2MB, 3MB
Expansion: 8 1769 I/O modules for L30ER, 16 1769 I/O modules for L33ER and L33ERM, 30 1769 I/O modules for L36ERM.
Remote: 16, 32 or 64 remote devices (EIP)

General Purpose Machine Controller

CompactLogix platform enhanced to provide better features and return of investments for customer

Application Size, Performance, Communications, Motion Integration

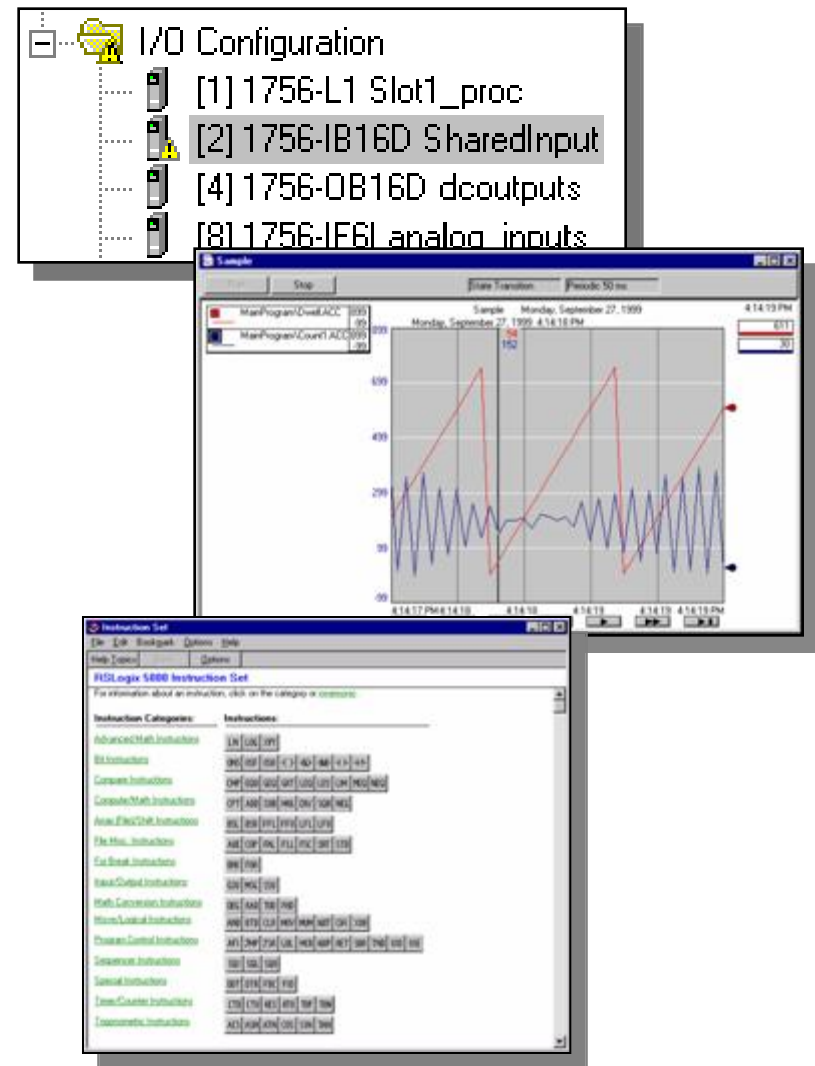
RSLogix 5000 Software

- Programming and configuration for the Logix5000™ family of controllers
 - Common user-interface with RSLogix™ 5 & 500
 - Single programming software package for the entire family of Logix5000 products
 - Multiple IEC 61131-3 programming languages
 - Ladder, Structured Text, Function Block, SFC
 - Symbolic tag and structure data model
 - Power programming tools to increase productivity
 - Version 20 to be released next month



The Power of RSLogix 5000 Software

- Built in I/O configuration and Diagnostics
 - No programming required!
- Graphical Trending / Histogram
 - Graphical real-time data histogram for diagnostics and monitoring functions
- Comprehensive help system that can help you troubleshoot your problems
 - Sample Projects
 - Instructions Quick Reference
 - Step-by-step videos



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**Thank you for
participating!**

Please tidy up your workstation
before leaving.