Leveraging Automatic Device Configuration

Kendall Connection Live!
Did you know that by choosing the right PowerFlex drive, network, controller and Ethernet switches, you can deskill your drive replacement process and improve your system availability and minimize downtime.

Are the original and new replacement of PowerFlex 750 drive required identical in terms of their catalog numbers in order to be qualified for doing ADC?

- A replacement drive must meet all firmware electronic keying requirements for ADC to complete successfully.
- Firmware must be loaded into Firmware Supervisor if required to automatically resolve firmware version incompatibility.
- Replacement drives must have an identical configuration of port hardware.
- The Safe Speed Monitor card must always be in Program mode before it is configured by ADC.

Exact Match - keying requires all keying attributes, that is, Vendor, Product Type, Product Code (catalog number), Major Revision, and Minor Revision, of the physical module and the module created in the software to match precisely in order to establish communication.
ADC - yes

- PF753 & 20-750-ENETR is installed in a bottom slot
- PF755 & 20-750-ENETR is installed in a bottom slot
- PF525 or PF523 & 25-COMM-E2P is installed in option slot
What is ADC?

Automatic Device Configuration (ADC) is an RSLogix 5000 (version 20) and Logix Designer (version 21 or greater) feature that supports the automatic download of configuration data upon the Logix controller establishing an EtherNet/IP network connection to several devices including PowerFlex drives.

ADC can also work in tandem with DHCP Persistence, DLR DHCP & Firmware Supervisor.

Setting the IP Address the BootP device! Out of the box configuration.

If Firmware Supervisor is set up and enabled for a drive ("Exact Match" keying must be used), and if the respective ControlFlash firmware kit is installed on the computer, the drive/peripheral will be automatically flashed (if necessary) prior to any ADC operation.
What is ADC?

When it comes to improving asset utilization, Automatic Device Configuration (ADC) functionality drives exceptional value. Failed equipment can be replaced and quickly brought back into operation with this functionality.

Steps for the full configuration/support includes:

• Device will receive its IP address from the network switch utilizing DHCP persistence or DLR DHCP

• Device will next receive its firmware and configuration from the controller

• Easily deploy replacement parts with little to no setup

• Take a 2:00 am crisis and make it a simple break/fix

• Today we will show you how ADC, DHCP & Firmware Supervisor work together to get a device back on-line! We will use the PowerFlex 525 for this example.
Device Replacement Process

- Animation

With ADC - Automatic Device Configuration, DHCP Persistence & Firmware Flash Supervisor, replacing a device in a Logix environment has never been easier.
What is ADC? – it can be...

**Automatic Device Configuration - ADC**

- Exact Match

**DHCP** *(Dynamic Host Configuration Protocol)*

**Persistence**

**Firmware Supervisor**

**Electronic Keying**

**ControlFlash**

**Managed Switch**

**DLR** *(Device Level Ring)*

**Automatic Firmware Update**

**Nonvolatile Memory Load/Store**

DHCP
Premier Integration

What’s the first step?

Drive Add-On Profiles (AOPs)

- **Single** Integrated Development Environment
  - Single project file for controller / drive system (.ACD)
  - All configuration data resides in controller

One software tool for your Logix / PowerFlex system
Premier Integration

Premier Integration is the exclusive experience of integrating Allen-Bradley® motor control devices into the Allen-Bradley Logix control platform, simplifying system design and programming, reducing development time and boosting productivity

- Single, integrated development environment to program and configure a Logix / PowerFlex system – Studio 5000® Software
- Option to use powerful motion instructions
- Productivity tools
- Automatic Device Configuration (ADC) to speed faulty drive replacement

... and more
Premier Integration

Select Module Type

Catalog | Module Discovery | Favorites
---|---|---
525

- Module Type Category Filters
  - Analog
  - CIP Motion Converter
  - Communication
  - Communications

- Module Type Vendor Filters
  - Advanced Energy Industries
  - Cognex Corporation
  - Dialight
  - Endress+Hauser

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>PowerFlex 525-E</td>
<td>PowerFlex 525 via 22-COMM-E</td>
</tr>
<tr>
<td>PowerFlex 525-E2P</td>
<td>PowerFlex 525 via E2P</td>
</tr>
<tr>
<td><strong>PowerFlex 525-EENET</strong></td>
<td>PowerFlex 525 via Embedded Ethernet</td>
</tr>
<tr>
<td>PowerFlex 525-EENET-Multi</td>
<td>PowerFlex 525 Multi-Drive via Embedded Ethernet</td>
</tr>
</tbody>
</table>
Premier Integration Studio 5000 version 31

Converyor_1

Overview
Connection
Parameters
Faults / Alarms
Device Info
Wizards
Address

Compare
Data Logger

Type: PowerFlex 525
Name: Converyor_1
Drive Rating: 1P 110V .50HP
Revision: 5.001
Address: 192.168.1.26
Electronic Keying: Compatible Module
ADC Disabled

Device Definition
Premier Integration

Device Definition
- Upload
- Import
- Export

Identity
- Peripherals
  Connection Format
  Automatic Device Configuration

Peripherals
- Add new peripheral

PowerFlex 520 Peripherals
- 25-COMM-D DeviceNet
- 25-COMM-E2P EtherNet/IP
- 25-COMM-P Profibus

DSI COMMs (Single-drive)
- 22-COMM-B
- 22-COMM-C
Premier Integration
Premier Integration

Device Definition

Connection Format

Mode: Velocity

Input

Data Type Name: A8:PowerFlex525V_ENET_DriveO0

Members:

<table>
<thead>
<tr>
<th>Name</th>
<th>Data Type</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>LogicCommand</td>
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<td></td>
</tr>
<tr>
<td>FreqCommand</td>
<td>INT</td>
<td></td>
</tr>
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Output

Data Type Size: 4 Bytes

Search

- All Parameters

<table>
<thead>
<tr>
<th>#</th>
<th>Name</th>
<th>Units</th>
</tr>
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<tr>
<td>41</td>
<td>Accel Time 1</td>
<td>Sec</td>
</tr>
<tr>
<td>42</td>
<td>Decel Time 1</td>
<td>Sec</td>
</tr>
<tr>
<td>52</td>
<td>Average kWh Cost</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td>Opto Out1 Level</td>
<td></td>
</tr>
</tbody>
</table>
The recommendation is to perform your normal configuration setup and commissioning first and enable ADC as the last step in your commissioning process.
Premier Integration

Ready for ADC!

Let’s demonstrate

Device Definition

Automatic Device Configuration

Type: PowerFlex 525
Name: Converyor_1
Drive Rating: 1P 110V .50HP
Revision: 5.001
Address: 192.168.1.26
Electronic Keying: Compatible Module
ADC Disabled

Device Definition

Automatic Device Configuration

Enable Automatic Device Configuration

Using Default Settings

Port | ADC Port Enable | Fail Drive Connection on Peripheral Error
--- | --- | ---
0 - PowerFlex 525 | ✓ | ✓
Enabling ADC on the drive (pre-V31)

Once the drive is configured, click on the ADC button to launch the configurator.
Enabling ADC on the drive

From this screen you can select the Automatic Configuration for the device and peripheral devices.
What is ADC?

With Automatic Device Configuration, DHCP Persistence & Firmware Flash Supervisor, replacing a device in a Logix environment has never been easier. With ADC and other component features, the system will:

• Serve out the IP address for the replacement device from the EtherNet/IP managed switch. This is DHCP persistence.

• Automatically verify or flash the firmware of the device, drive (peripherals), to ensure compatibility with your configuration. Firmware Supervisor

• Automatically download the device and peripheral as commissioned parameters this is ADC
With the correct components you can reduce operator intervention and errors, as the system ensures the right IP address, with the correct revisions of firmware in your devices and peripherals, and the COMMISSIONED PARAMETERS in your device. This means that you have:

• Deskilled the device replacement process to changing wires, using a device with parameters at default.

• Reduced the possibility for programming errors / wrong file download, and the need for additional hardware.

• Restricted access to parameter changes, as the Logix controller owns the device configuration

• Spares stock doesn't need replacing or manually flashing to the correct firmware of devices and peripherals.
What is ADC? – products that are supported

ArmorStart LT

PowerFlex 525

E300 Overload Relay

PowerFlex 750-Series
What is ADC? – products that are supported

<table>
<thead>
<tr>
<th>PowerFlex Drive</th>
<th>Network Connection</th>
<th>RSLogix 5000 Drives AOP (Add On Profile Version)</th>
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</thead>
<tbody>
<tr>
<td>755</td>
<td>PowerFlex 755 Embedded EtherNet or 20-750-ENETR Dual Port EtherNet</td>
<td>AOP for PowerFlex 4-Class &amp; 7-Class, SCANport v4.08.00</td>
</tr>
<tr>
<td>753</td>
<td>20-750-ENETR Dual Port EtherNet</td>
<td></td>
</tr>
<tr>
<td>525</td>
<td>PowerFlex 525 Embedded EtherNet or PowerFlex 25-COMM-E2P Dual-Port EtherNet/IP Adapter</td>
<td>AOP for PowerFlex 523 &amp; 525 Drives v1.05.00</td>
</tr>
<tr>
<td>523</td>
<td>PowerFlex 25-COMM-E2P Dual-Port EtherNet/IP Adapter</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attribute</th>
<th>PF523</th>
<th>PF525</th>
<th>PF527</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic Device Configuration (ADC)</td>
<td>Optional with dual Port Ethernet/IP Card</td>
<td>Embedded single port EtherNet/IP as part of the architecture</td>
<td>Embedded dual port EtherNet/IP as part of the architecture</td>
</tr>
</tbody>
</table>
What is ADC?

The following application note describes the concept of the above features, but not all the specific details of how to setup the configuration. This detail is comprehensively described in the user manuals:

**PowerFlex 755 Drive Embedded EtherNet/IP Adapter User Manual** (Pub. 750COMM-UM001-EN-P)

**PowerFlex 20-750-ENETR Dual-port EtherNet/IP Option Module User Manual** (Pub. 750COMM-UM008-EN-P)

**EtherNet/IP Embedded Switch Technology Application Guide** (Pub. ENET-AP005-EN-P)

**PowerFlex 525 Embedded EtherNet/IP Adapter** (Pub. 520COM-UM001-EN-P)

**PowerFlex 25-COMM-E2P Dual-Port EtherNet/IP Adapter** (Pub. 520COM-UM003-EN-P)

App Note: Optimize PowerFlex Drive Management with Automatic Device Configuration Knowledgebase.... 504187
What is ADC? – products that are NOT supported

- Automatic Device Configuration (ADC) feature is currently not available on any other PowerFlex 7-Family drives including PowerFlex 700 drive. (20-COMM device).
- It's **only available on EtherNet Network** and not available on any other network (like DeviceNet or ControlNet).
- Remember ADR?
- Automatic Device Configuration (ADC) feature does not work on PowerFlex 753 or 755 drives running over EtherNet using 20-COMM-E or 20-COMM-ER card.
- No, unfortunately ADC is not supported in any of the Soft Starter products at this time. ADC is a function of the DPI interface that connects the SMC Flex and SMC-50 soft starters to the Ethernet/IP communication cards (20-COMM-E and 20-COMM-ER).

**PowerFlex 755 CIP motion and PowerFlex 527 do not support ADC**
PowerFlex 520-Series AC Drives
Automatic Device Configuration (ADC)

- ADC allows a user to configure their Logix system to automatically download a drive’s configuration
- Ideal for drive replacement
- ADC is a version 20 and above feature
- Also compliments:
  - Stratix 6000 & 8000 and 5700 switches
  - Automatically assigns IP Address
  - Firmware Supervisor - Flashes the drive and peripherals
What is ADC?

Although the tests for this application note was undertaken on the specific hardware shown here, alternative hardware could be used:

- Controllers with RSLogix 5000 V20 firmware – ControlLogix L6x, L7x, CompactLogix L1xE, L2xE, L3xE, L4x and Safety
- Managed Stratix Switches - Stratix 6000, Stratix 8000, Stratix5700
- RSLogix 5000 v20 (comes with AOP v4.01) and above, with additional Drives AOP's V4.04, V4.05

The drives that support ADC are (also IP addresses used in this application note):

- PowerFlex 753 with 20-750-ENETR Firmware V7 or later 192.168.1.25
- PowerFlex 755 with Embedded EtherNet Firmware v4 or later 192.168.1.161
- PowerFlex 755 with 20-750-ENETR Firmware v4 or later 192.168.1.150
- PowerFlex 525 with Embedded EtherNet Firmware v1 or later 192.168.1.20
- PowerFlex 523 with 25-COMM-E2P Firmware v1 or later 192.168.1.21
DHCP Persistence & DLR DHCP

Stratix 5700
Stratix 5400
Stratix 5410

What is ADC?

When the network is connected in a ring topology, it provides a robust / alternative network path, should a cable be damaged. Device Level Ring is built into the 20-750-ENETR and 25-COMM-E2P Dual Port EtherNet/IP modules and the 1783-ETAP module, which provides a 3ms recovery on a 50 node network. Using these modules provides a daisy chain capability and removes the requirements for EtherNet switches, so reducing the cost of the installation.

Star vs. Linear / Ring Topology & IP Addressing

Update June 2017 - DHCP Server for IP Addressing (Ring)

With the upgrade of Stratix 5700 firmware CIP 7.00 15.2(4)EA3 (non-Crypto) Universal or higher, a Device Level Ring (DLR) can be configured to provide a DHCP address to drive nodes in a ring, based on their position in the ring. Please refer to:
Dynamic Host Configuration Protocol (DHCP)

*New Stratix FW Release October 2018 will allow both DHCP Per Port and DLR DHCP to co-exist on same switch. *

**DHCP** is a protocol used for assigning dynamic IP addresses to devices on a network.

- **DHCP Server functionality**
  - Assigns IP address from a pool of available addresses to the devices (DHCP Clients).
  - If a device leaves and then rejoins the network, it may not get the same address.

- **DHCP Persistence**
  - Can be used to assign specific IP addresses PER PORT.
  - Can be used to assign specific IP addresses by POSITION in DLR.
    - Stratix MUST BE DLR Supervisor.
Stratix 5700 / 5400

DLR DHCP Example

- DHCP configuration table is defined in active supervisor
  - Table does not have to include all devices on the ring
  - Configuration table “Index” increments around the ring using the lowest switch ring port number as the starting point
- Switch creates reference table by combining configuration table and DLR participant table
  - Ring must be closed before addresses will be assigned

<table>
<thead>
<tr>
<th>Index</th>
<th>IP address</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>192.168.1.102</td>
</tr>
<tr>
<td>3</td>
<td>192.168.1.103</td>
</tr>
<tr>
<td>5</td>
<td>192.168.1.105</td>
</tr>
<tr>
<td>7</td>
<td>192.168.1.107</td>
</tr>
</tbody>
</table>
DHCP Feature

DHCP per Port & DLR DHCP

Every device in an IP-based network must have a unique IP address. DHCP Server functionality in the Stratix family of switches assigns IP address information from a pool of available addresses to the devices (DHCP Clients) connected to switch ports. If a device leaves and then rejoins the network, the device receives the next available IP address, which is not necessarily the same address that it had before. DHCP Persistence can be used to assign specific IP addresses to specific switch port numbers.
In order to use the DLR Per port and DLR DHCP on the same switch:

- Stratix must be Active Ring Supervisor and Primary Ring DHCP server.
- There **CANNOT** be a Stratix Backup Ring DHCP server.
- Stratix switches in the ring as Ring Node **CAN NEVER** be DLR DHCP clients.

If Stratix as Ring Node is in ring, you must add the interface command `ip dhcp snooping trust` to the DLR ports of the Stratix that is a Ring Node. This has to be done via CLI not available in Device Manager.
DHCP Per Port works with DLR DHCP

For more details see the recently updated EtherNet/IP Device Level Ring Application Technique Pub ENET-AT007
DHCP per device location works with DLR DHCP

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Stratix 5700 Configuration for ADC

The Stratix switches can be set to operate as a DHCP server to provide **DHCP persistence**.

Using DHCP persistence, you can assign a specific IP address to each particular port ensuring that the device attached to a given port will have the same address even if power cycled or replaced for maintenance.

This is an advanced feature to allow maintenance personnel to easily change out a failed / troublesome device without having to program in a defined static IP address into the device.

This can be thought of as having the advantages of both static IP addressing and DHCP addressing for industrial use.
Your connection is not private

Attackers might be trying to steal your information from 169.254.0.1 (for example, passwords, messages, or credit cards). Learn more

NET::ERR_CERT_AUTHORITY_INVALID

☐ Help improve Safe Browsing by sending some system information and page content to Google. Privacy policy

ADVANCED

Back to safety
Your connection is not private

Attackers might be trying to steal your information from **169.254.0.1** (for example, passwords, messages, or credit cards). [Learn more](#)

NET::ERR_CERT_AUTHORITY_INVALID

☐ Help improve Safe Browsing by sending some system information and page content to Google. [Privacy policy](#)

This server could not prove that it is **169.254.0.1**; its security certificate is not trusted by your computer’s operating system. This may be caused by a misconfiguration or an attacker intercepting your connection.

[Proceed to 169.254.0.1 (unsafe)](#)
Select device initial setup mode: Express Setup

Network Settings
- Host Name: Stratix_5700
- Management Interface (VLAN): 1
- IP Assignment Mode: Static
- IP Address: 192.168.1.57 / 255.255.255.0
- Default Gateway: 
- NTP Server: 
- User: admin
- Password: *****
- Confirm Password: *****

Advanced Settings

Submit
Front Panel

View: Status
Locate Switch: ☐ 255

Switch Information

HostName: Stratix-5700
IP Address: 192.168.1.57
MAC Address: 00:1D:9C:89:24:00
Product ID: 1783-BMS10CA
License Level: FULL
CIP Revision: 9.001
CIP Serial Number: 800800633
Serial Number: FDO1635TD0A1
Version ID: A0
Software Version: 15.2(6)E6a (Crypto) UNIVERSAL

Contact:
Location:
Switch Information

Version ID: A0

Software Version: 15.2(6)E0a (Crypto) UNIVERSAL

Contact :
Location :
<table>
<thead>
<tr>
<th>Port Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fa1/1</td>
<td>None</td>
</tr>
<tr>
<td>Fa1/2</td>
<td>None</td>
</tr>
<tr>
<td>Fa1/3</td>
<td>None</td>
</tr>
<tr>
<td>Fa1/4</td>
<td>None</td>
</tr>
<tr>
<td>Fa1/5</td>
<td>None</td>
</tr>
<tr>
<td>Fa1/6</td>
<td>None</td>
</tr>
<tr>
<td>Fa1/7</td>
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<tr>
<td>Fa1/8</td>
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</tr>
<tr>
<td>Fa1/9</td>
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<tr>
<td>Fa1/10</td>
<td>None</td>
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</tbody>
</table>

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<table>
<thead>
<tr>
<th>Port Name</th>
<th>Role</th>
</tr>
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<tbody>
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<td>Desktop for Automation</td>
</tr>
<tr>
<td>Fa1/2</td>
<td>Desktop for Automation</td>
</tr>
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<td>Fa1/3</td>
<td>Desktop for Automation</td>
</tr>
<tr>
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<td>Fa1/9</td>
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<tr>
<td>Fa1/10</td>
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</table>
## Physical Port Table

<table>
<thead>
<tr>
<th>Port Name</th>
<th>Description</th>
<th>Port Status</th>
<th>Speed</th>
<th>Duplex</th>
<th>Media Type</th>
<th>Operational Mode</th>
<th>Access VLAN</th>
<th>Administrative Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fa1/1</td>
<td>PC</td>
<td>Auto</td>
<td>Auto-100Mb/s</td>
<td>Auto-Full</td>
<td>10/100BaseTX</td>
<td>Static access</td>
<td>1</td>
<td>Access</td>
</tr>
<tr>
<td>Fa1/2</td>
<td>PC</td>
<td>Auto</td>
<td>Auto</td>
<td>Auto</td>
<td>10/100BaseTX</td>
<td>Down</td>
<td>1</td>
<td>Dynamic auto</td>
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<tr>
<td>Fa1/3</td>
<td>PC</td>
<td>Auto</td>
<td>Auto</td>
<td>Auto</td>
<td>10/100BaseTX</td>
<td>Down</td>
<td>1</td>
<td>Dynamic auto</td>
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<tr>
<td>Fa1/4</td>
<td>PC</td>
<td>Auto</td>
<td>Auto</td>
<td>Auto</td>
<td>10/100BaseTX</td>
<td>Down</td>
<td>1</td>
<td>Dynamic auto</td>
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<tr>
<td>Fa1/5</td>
<td>CONTROLLER</td>
<td>Auto</td>
<td>Auto</td>
<td>Auto</td>
<td>10/100BaseTX</td>
<td>Down</td>
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<td>Fa1/6</td>
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<td>AUTO-SELECT</td>
<td>Down</td>
<td>1</td>
<td>Dynamic auto</td>
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</table>
Global Settings

DHCP Persistence

Enable DHCP: [ ]
Surveillance DHCP: [ ]

Submit

DHCP Pool Table

<table>
<thead>
<tr>
<th>Pool Name</th>
<th>Network</th>
<th>Network Mask</th>
<th>VLAN</th>
<th>Reserved Only</th>
<th>DHCP Snooping</th>
</tr>
</thead>
<tbody>
<tr>
<td>mgmt_pool</td>
<td>169.254.0.0</td>
<td>255.255.255.0</td>
<td>Vlan1000</td>
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<td></td>
</tr>
<tr>
<td>Interface</td>
<td>Pool Name</td>
<td>IP Address</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>-----------</td>
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<td>------------</td>
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DHCP Persistence
Demonstration

Let’s demonstrate
Firmware Supervisor

ADC can also work in tandem with Firmware Supervisor
What is the **Firmware Supervisor** and **Automatic Firmware Update** Feature?

- The terms **Firmware Supervisor** and **Automatic Firmware Update** refer to the same feature in Studio 5000 Logix Designer provided for controllers using the CompactFlash memory card or a Secure Digital (SD) card.

- This feature, when enabled, automatically loads firmware to I/O devices in the system from the CompactFlash or SD card.

- Any Rockwell Automation device that is in the I/O configuration tree, has its **Electronic Keying** keyed as **Exact Match** and is normally upgraded by the ControlFlash utility, will have its firmware upgraded to any firmware upgrades that had been stored on the controller memory card.
Where is the **Firmware Supervisor/Automatic Firmware Update** feature enabled?

- The feature is accessed from the Nonvolatile Memory tab of the Controller Properties in Studio 5000 Logix Designer.

- By default, the feature is enabled.
How to configure the **Automatic Firmware Update** feature?

- The **Nonvolatile Memory Load/Store** dialog box is divided into 2 sections:
  - Image in Nonvolatile Memory
  - Controller
When using the **Firmware Supervisor** tool, can the firmware be stored on an SD card?

- Initially the **Automatic Firmware** selection in the **Image in Nonvolatile Memory** section is grayed out.
- Once an image is stored on the memory card, the **Automatic Firmware Update** status will be displayed.
- In the **Controller** section, by default the **Automatic Firmware Update** is disabled in the selection pulldown.
Firmware Supervisor Demonstration

Let’s demonstrate
Firmware Supervisor Resources

• Publication 1756-RM094H - Logix 5000 Controllers Design Considerations

• Technote 458789 - RSLinx 5000 Firmware Supervisor and Automatic Firmware Update Feature

• Technote 720373 - PowerFlex 750-Series Firmware Supervisor Procedure & Management Non-secure Secure
Let’s put is all together!

What happens at 2:00 a.m.?
ControlFLASH Plus™
ControlFLASH Plus™ V1.00.xx - Overview

- **Improved productivity**
  - Easily set up and run single or multiple devices updating operations
  - Create, apply and easily share firmware revision favorites

- **Improved usability**
  - Modern, simpler to use application allows you to do more with fewer mouse clicks
  - Detailed reporting and simpler firmware kits management
  - Seamless integration with FactoryTalk™ Security

- **Improved scalability and modern design**
  - User interface implemented in web technology
  - Leverages FactoryTalk™ Linx® (V6.00.00 and higher)
  - Coexists with ControlFLASH™
  - Supports all firmware kit types

- **Free of charge**
- **Quick Start Guide** available on Literature Library
- **Available for download on PCDC**

![Available now]
ControlFLASH Plus™ V1.00.xx – Workflows

✿ **Flash Devices**
  - Quickly select one or multiple devices for flash updates
  - Easily apply revisions to like devices or apply a favorite list for consistent firmware usage
  - Create a favorite list with your firmware selections
  - Review flashing progress and easily get a detailed report at operation completion

✿ **Manage Firmware**
  - Review firmware kits available on PC
  - Delete unused firmware kits

✿ **Manage Favorites**
  - Create named favorite lists of firmware revisions for select hardware modules
  - Import and export favorite lists for easy reuse
Flash Devices – How Many Devices can be Flash in one Session?

Flash devices list can contain one to multiple devices

- Tool always attempts to flash up to 20 devices concurrently, with the following exceptions
  - Parents are flashed before descendants and devices with two active EtherNet ports are flashed before peers
  - Devices on linear topologies (EtherNet/IP™ and Sercos) are flashed sequentially, one at a time
  - Devices implemented as sub-assemblies are updated sequentially (e.g., PowerFlex® and E300™ option modules)

- Tool automatically determines the correct order and sets the flashing schedule
ControlFLASH Plus™ V2.00.xx - Overview

- **Improved productivity**
  - Easily set up and run single or multiple devices updating operations
  - Create, apply and easily share firmware revision favorites

- **Improved usability**
  - Modern, simpler to use application allows you to do more with fewer mouse clicks
  - Detailed reporting and simpler firmware kits management
  - Seamless integration with FactoryTalk™ Security
  - Review, select and download firmware kits available on PCDC
  - Easily access firmware release notes, tech notes and PSA from PCDC
  - Get hardware products lifecycle status from PCDC

- **Improved scalability and modern design**
  - User interface implemented in web technology
  - Leverages FactoryTalk™ Linx® (V6.00.00 and higher)
  - Coexists with ControlFLASH™
  - Supports all firmware kit types

- **Free of charge**

- **Targeted by end of CY2018**
Summary

ControlFLASH Plus™ provides for enhanced productivity, improved firmware lifecycle management and better usability

- Multi-device flash operation supported improves productivity – topology dictates amount of devices flashed concurrently
- New user interface provides better usability
- Favorite lists and reports support provide enhanced products firmware lifecycle management
- Works with FactoryTalk™ Linx® only (can coexist with RSLinx Classic)
- Version 1.00 is available now and V2.00 will add PCDC connectivity for additional usability and productivity gains – V2.00 targeted for end of CY 2018
- Free of charge

ControlFLASH™ will continue to exist, but will go into maintenance mode

- Both tools can coexist on the same PC and share the same set of firmware kits
Connected Components Workbench™ Software R11 Update - Trending

- Special feature update for CCW R11
  - Will come standard starting with R12 release
- Key features:
  - Supports ALL PowerFlex® drives
    - First drive trend tool to support PowerFlex 755T and PowerFlex 520-Series drives
    - Also supports SMC™ Flex, SMC™-50 and Kinetix® 3
  - Easy-to-use
    - Quick & simple configuration setup (online or offline)
    - Convenient status & controls on main display
  - Triggers
    - Start sampling when an event occurs
    - Includes Pre-sampling to also record data before the event
  - Status display
    - Pre-event status
    - Time remaining display after trend started
Next KCL Automation Fair 2018 update
December 4th (Saginaw)
December 5th (Lansing)