

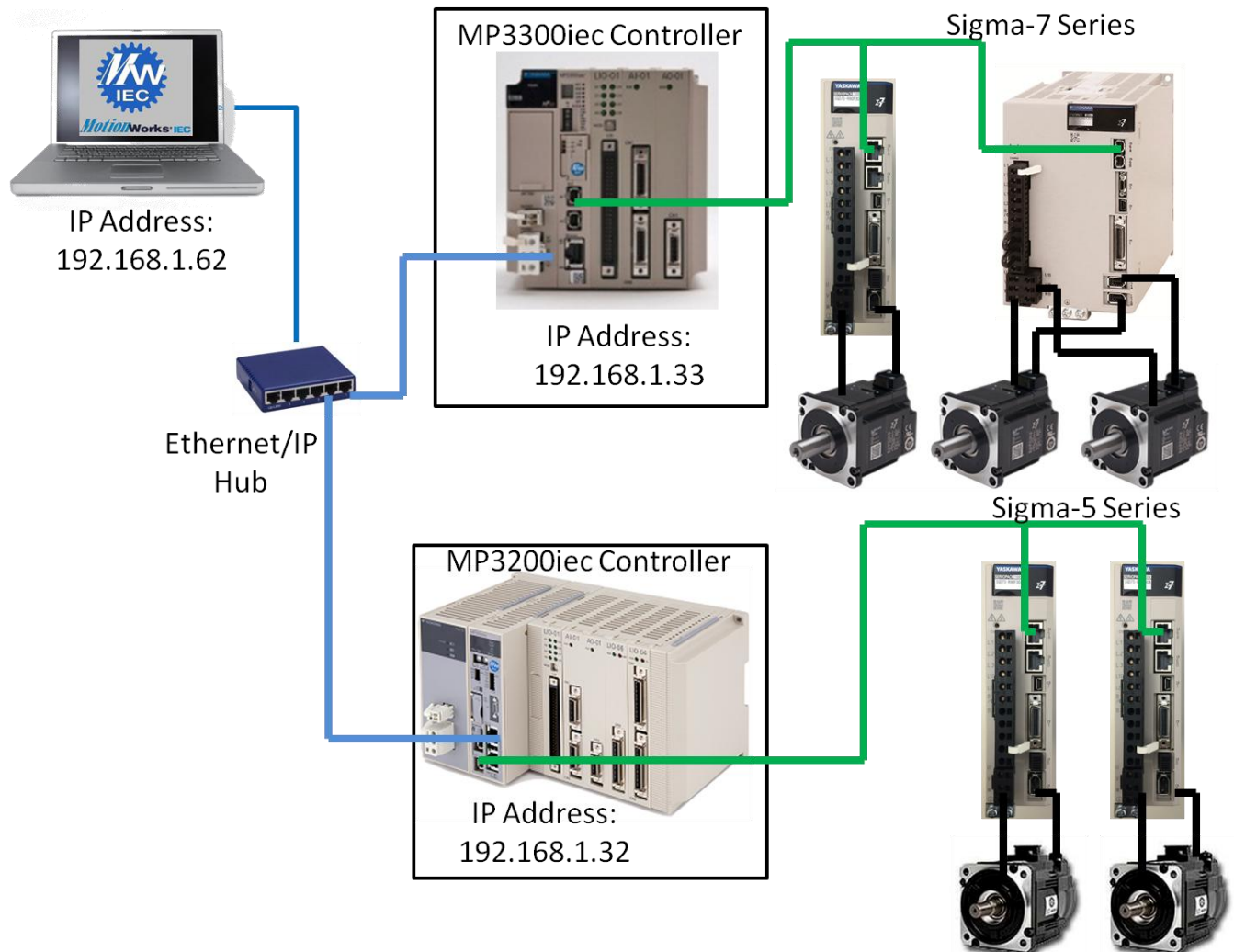
Title: How to Configure a Project to Include Multiple MPiec Controller Resources

Product(s): MP2000iec, MP3000iec Series Controllers, Sigma-7Series Controllers, Sigma-7 Series, Sigma-5 Series

Doc. No. AN.MPIEC.19

Application Overview

This application note will go in detail about how to download to multiple resources within MotionWorks IEC 3 Pro.



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Products Used

Component	Product and Model Number
Servopack	Sigma-7 Series Mechatrolink-III, Sigma-5 Series Mechatrolink-III
Motor	Sigma-7 Series Servomotors, Sigma-5 Series Servomotors
Controller	MP2000iec and MP3000iec Series and Sigma-7Siec Controllers
Software	MotionWorks IEC 3.2 Pro or greater

Application Requirements

MPiec Series Firmware 3.2 or greater

MECHATROLINK-III Sigma-7 or Sigma-5 Series SERVOPACKS

Application Solution and Benefits

With today's machines having a plethora of axes for motion, Yaskawa's ability to have multiple resources allows for modularity between different machine sections.

Download the latest below:

- [MotionWorks IEC](#) (must have partner login)
- [MotionWorks IEC Firmware](#) (must have partner login)

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Implementation

Steps:

1. Establish IP Address on both MP3000iec Series Controllers
 - a. MP3300iec Controller IP Address: 192.168.1.33



- b.
 - c. MP3200iec Controller IP Address: 192.168.1.32



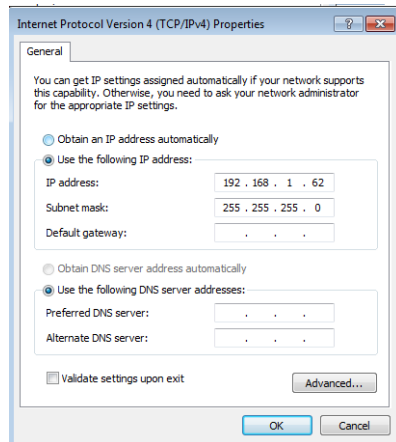
d.

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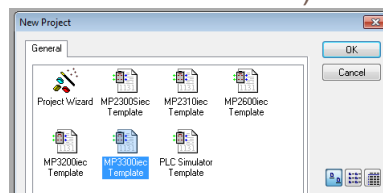
2. Establish IP Address on PC: 192.168.1.62



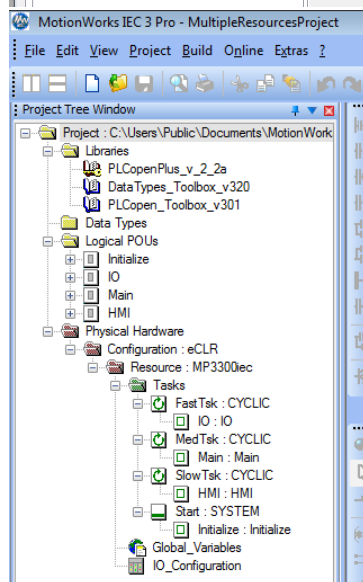
a.

3. Open MotionWorks IEC 3 Pro

4. Begin and save and compile a new project with MP3300iec or MP3200iec (whichever will be the default)



a.



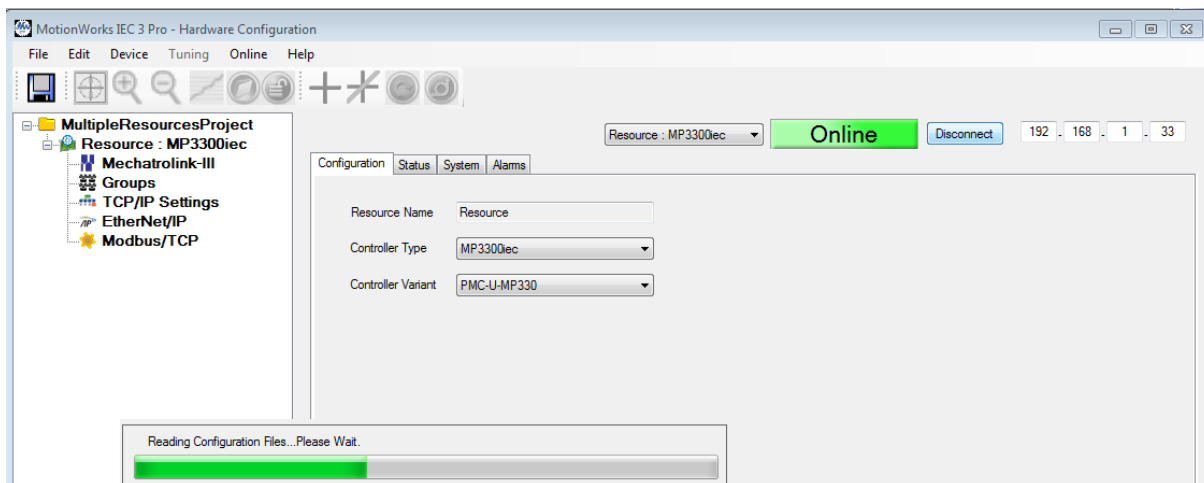
b.

Title: How to Configure a Project to Include Multiple MPiec Controller Resources

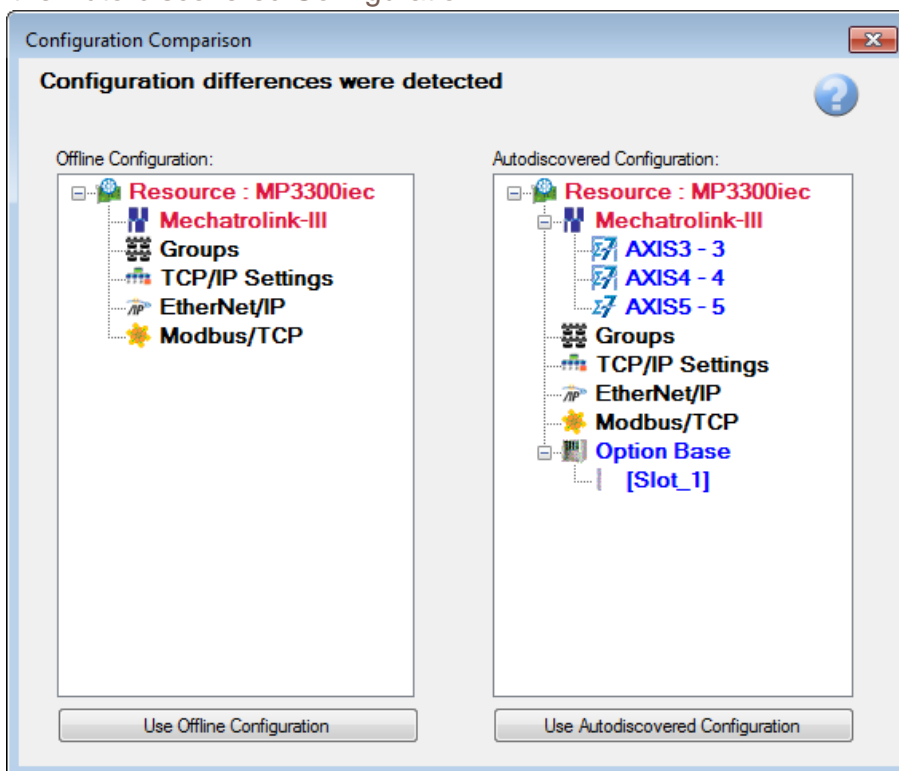
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5. Launch Hardware Configuration
6. Connect to main MP3000iec Controller



- a.
7. Upload the Auto-discovered Configuration



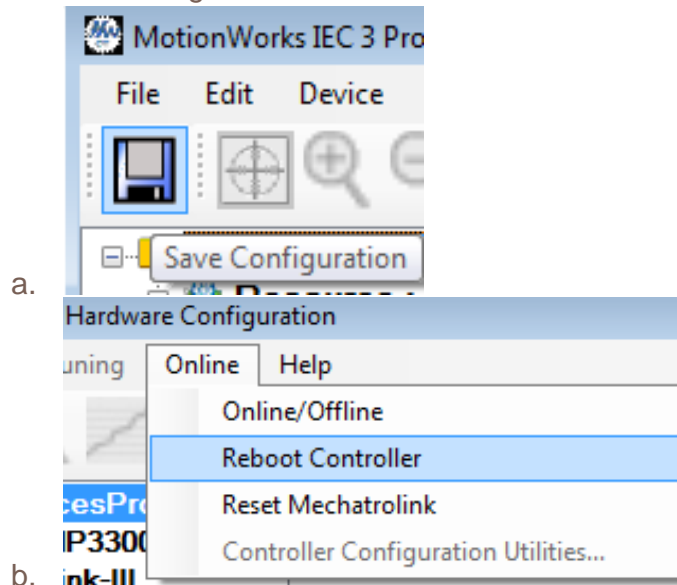
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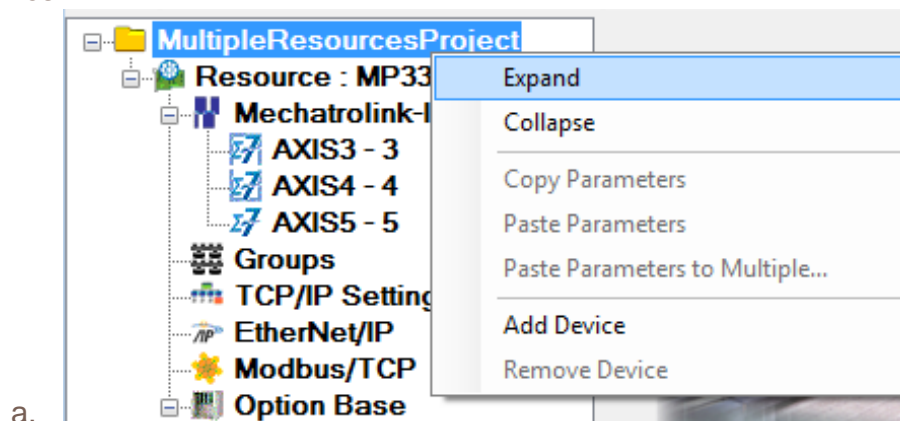
8. Click Save Configuration and reboot controller



9. Disconnect from MP3300iec Controller to go 'offline'



10. Right click on Project name folder within the Hardware Configuration and click 'Add Device'

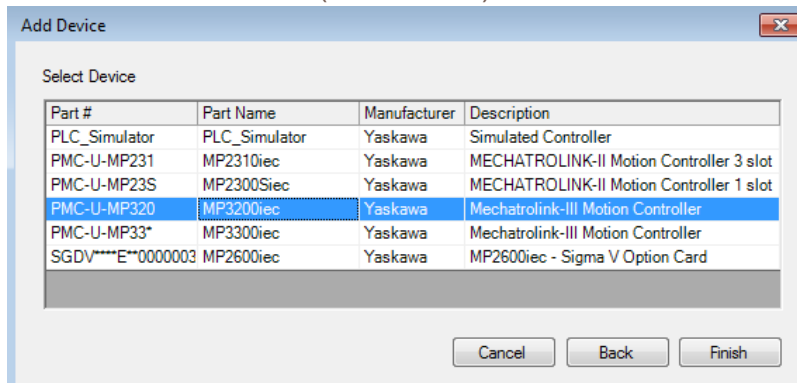


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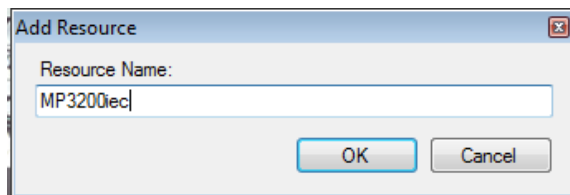
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11. Choose the controller needed (MP3200iec) and click 'Finish'



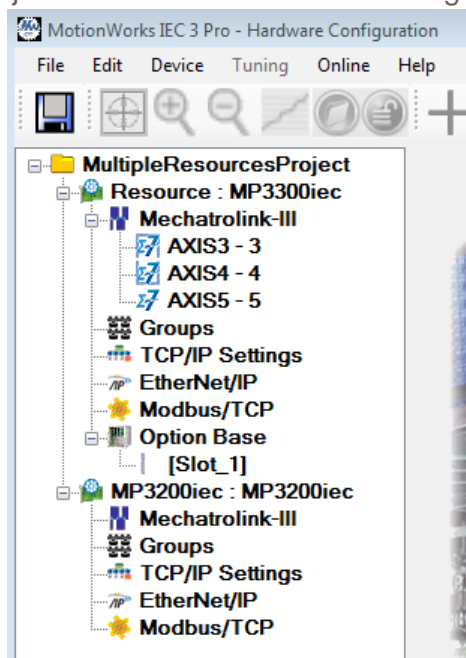
a.

12. Create a name for the Resource and click 'OK'



a.

13. The project tree now shows the following



a.

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14. Click on the MP3200iec : MP3200iec header



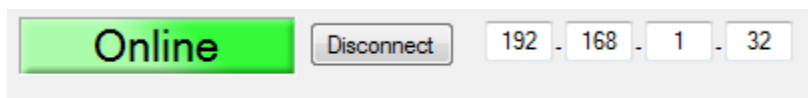
a.

15. Type in the IP Address of the MP3200iec Controller



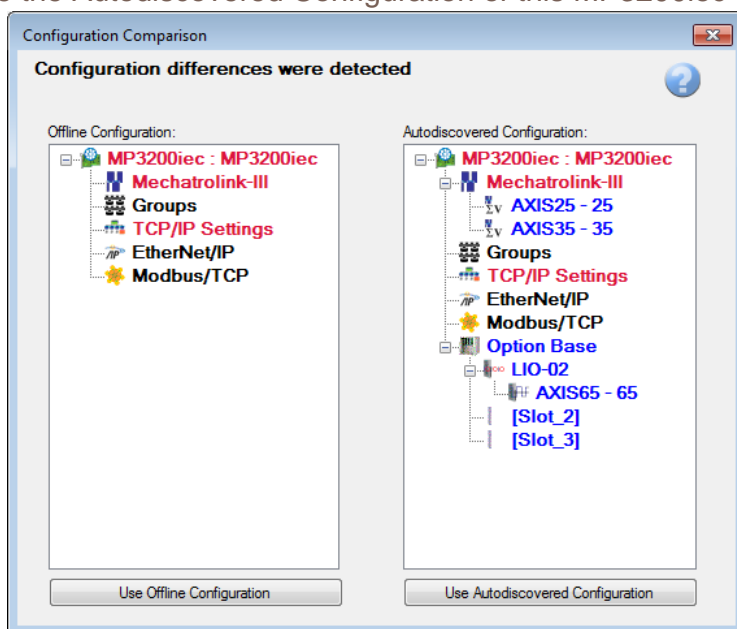
a.

16. Click Connect



a.

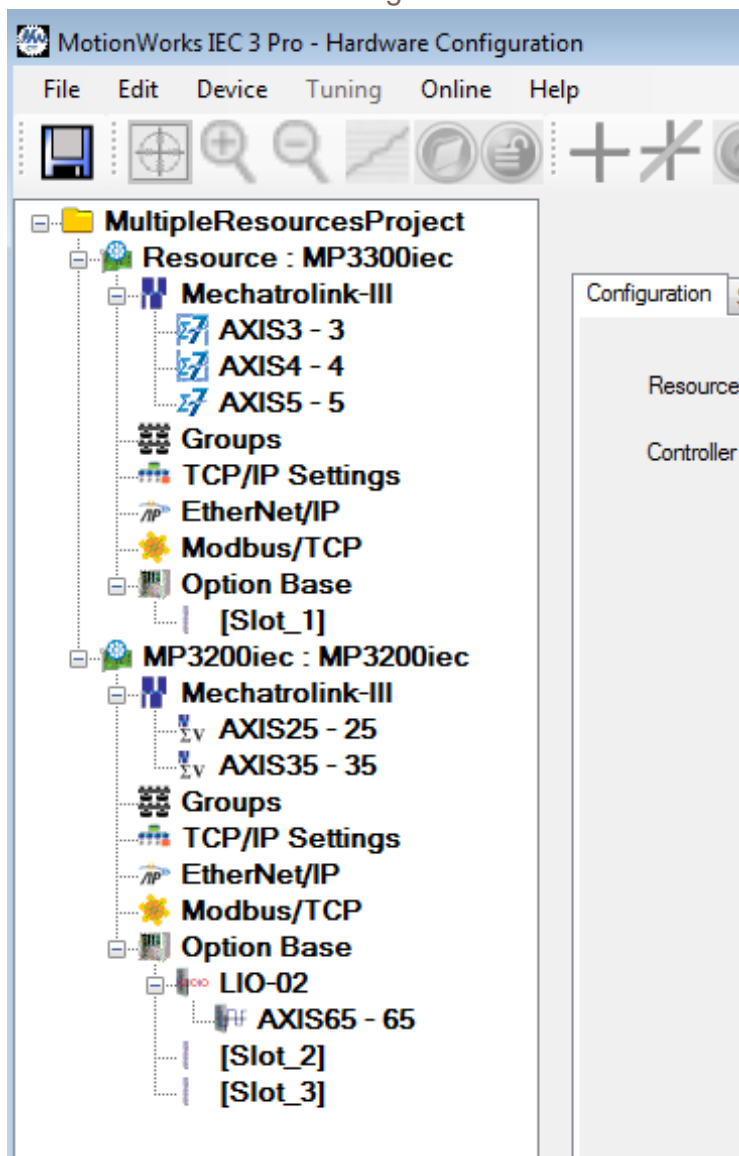
17. Choose the Autodiscovered Configuration of this MP3200iec Controller



a.

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Sigma-5 Series**Doc. No.** AN.MPIEC.19

18. Project tree now shows the following:



a.

19. Click 'Save Configuration' and reboot the controller as in Step 8

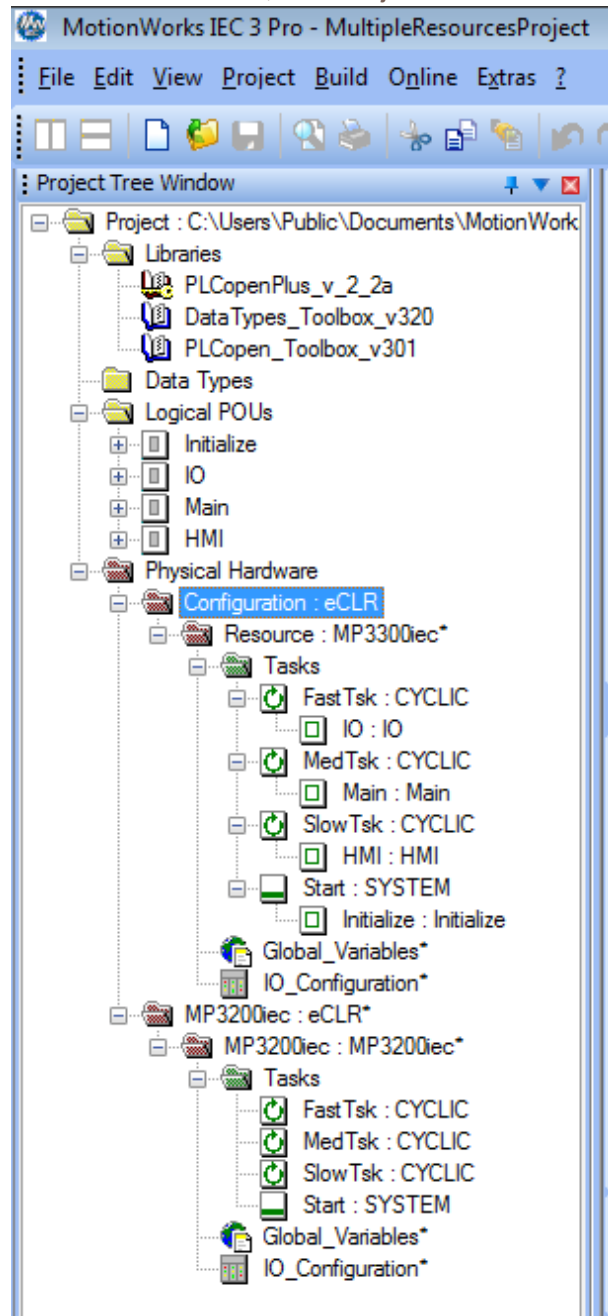
20. Close Hardware Configuration

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21. In MotionWorks IEC 3 Pro, the Project Tree Window should display like below:



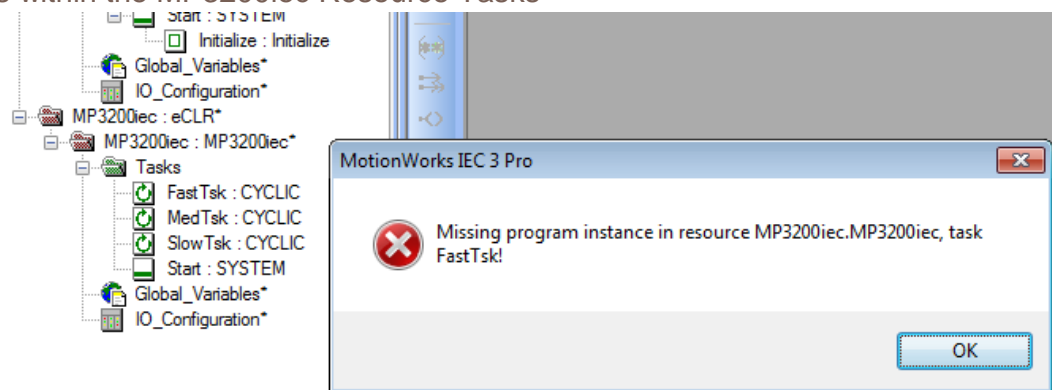
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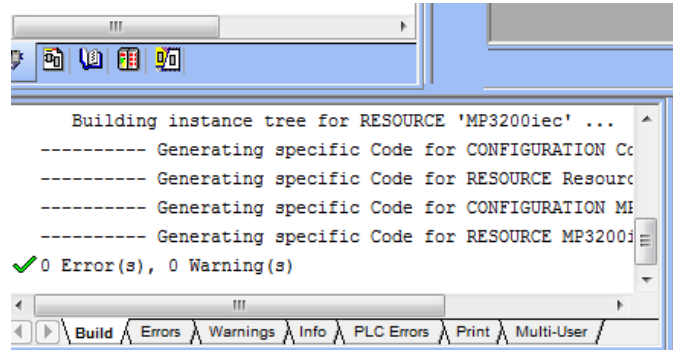
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22. Compiling this project will result in errors because there aren't any Program Instances within the MP3200iec Resource Tasks



a.

23. Add the same tasks from the MP3300iec Resource and compile and the Message Window should result in 0 Errors



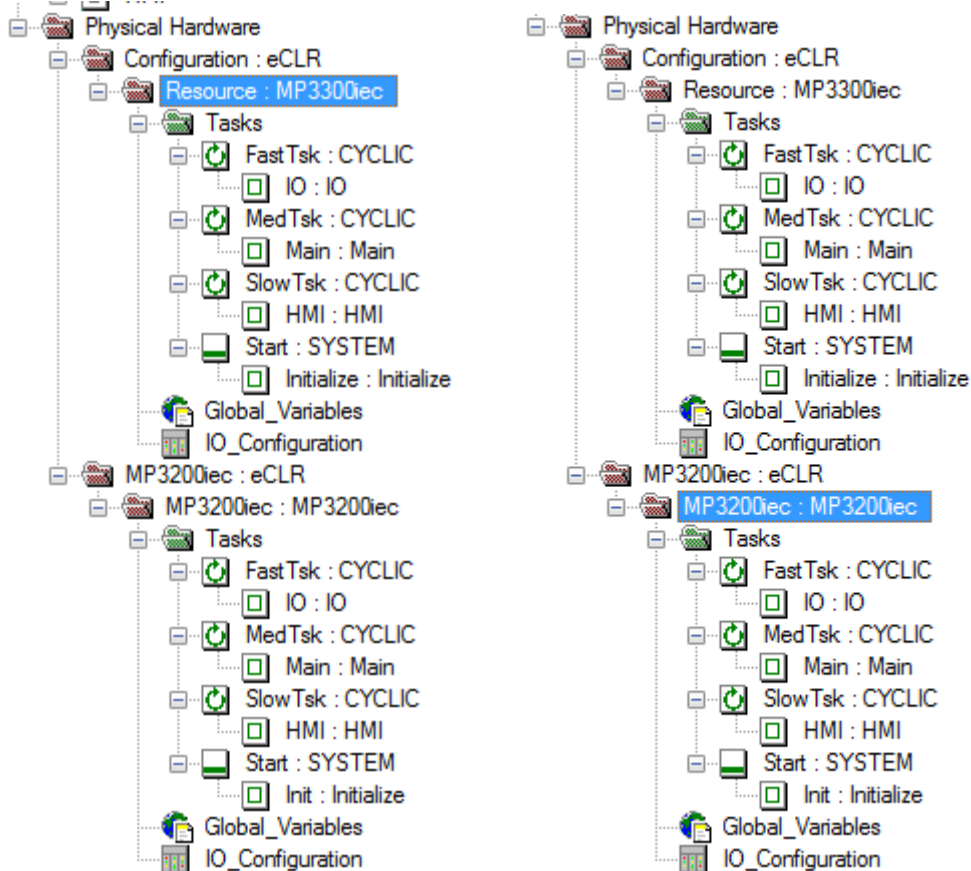
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24. To choose between different resources when downloading, click either 'Resource: MP3300iec' or 'MP3200iec:eCLR'



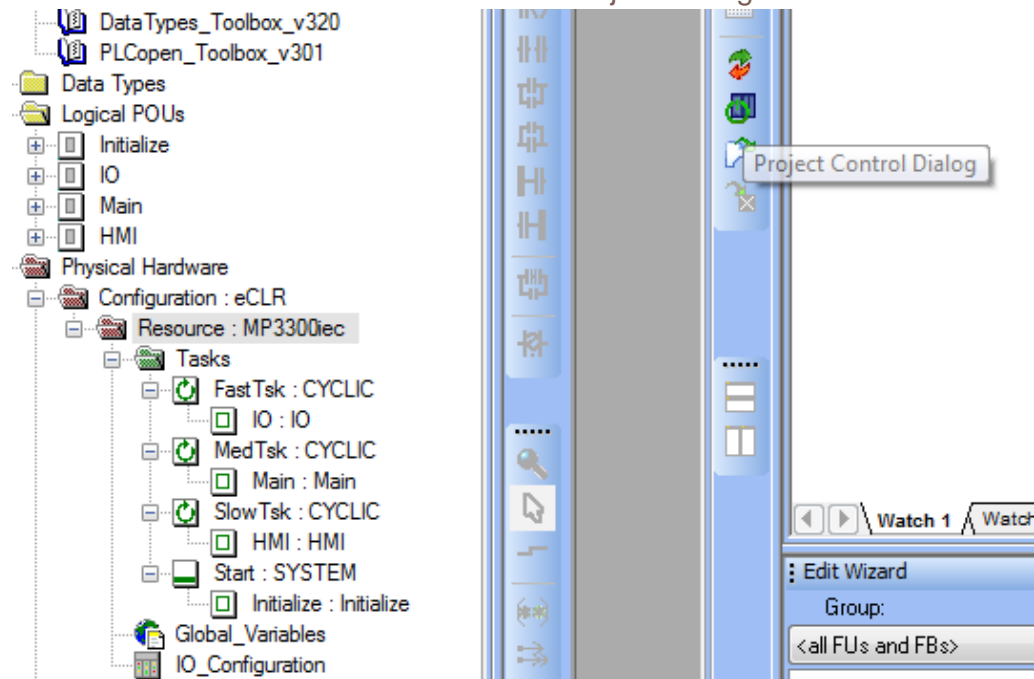
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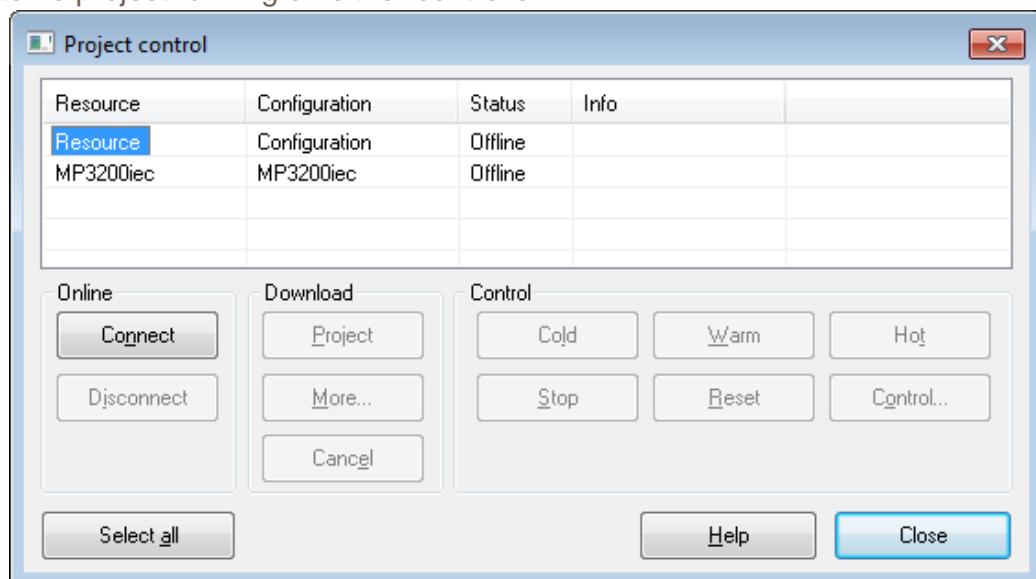
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25. Click on the MP3300iec Controller and click the Project Dialog Icon



a.

26. In the Project Control Box, notice the Status of each controller shows 'Offline'. This is due to no project running on either controller.



a.

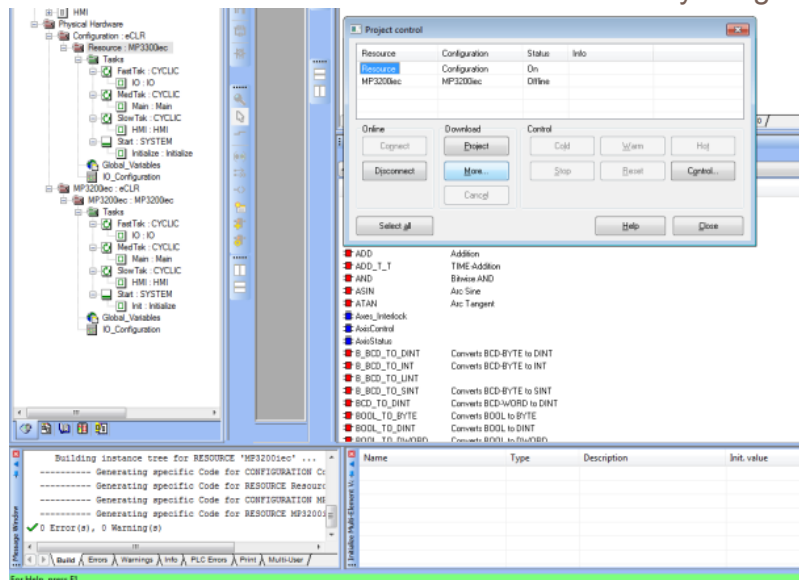
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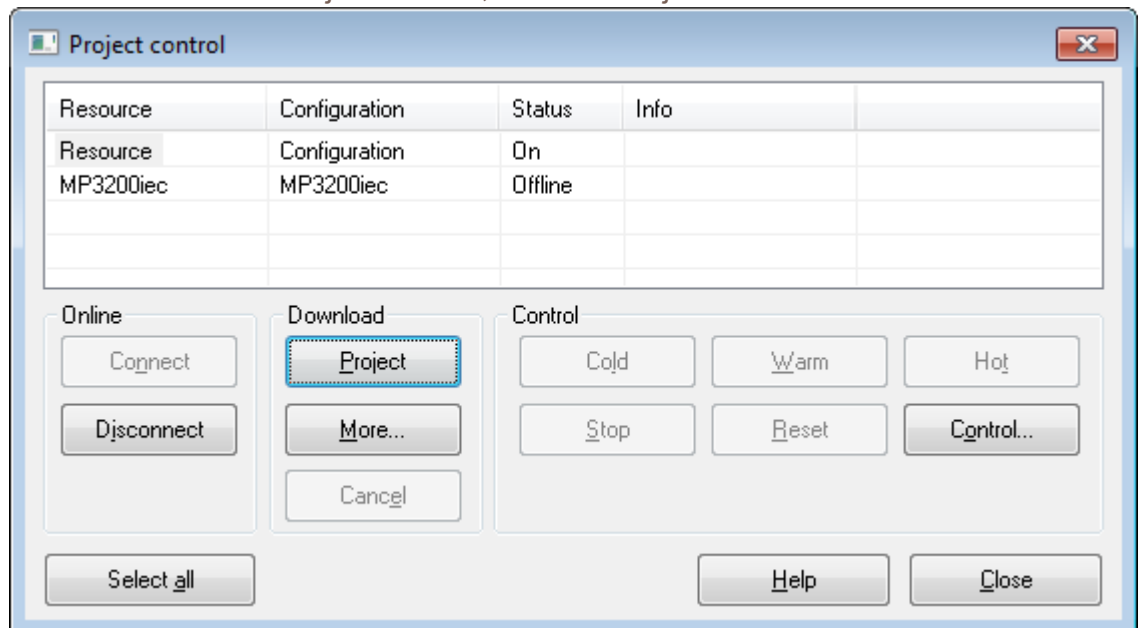
27. Select Resource and 'Connect'

28. The bottom of MotionWorks IEC 3 will indicate it is 'On' by the green filled bar



a.

29. In the Download section of Project Control, click on 'Project'



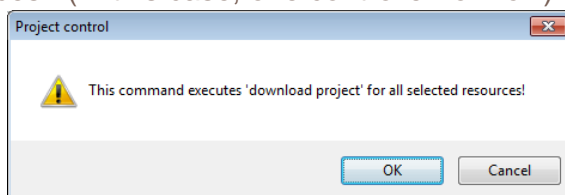
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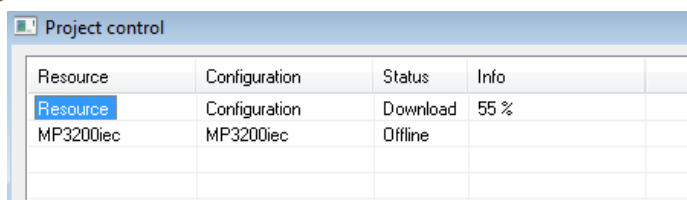
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30. A warning will indicate that this command will download projects to all selected resources. (In this case, one controller for now)

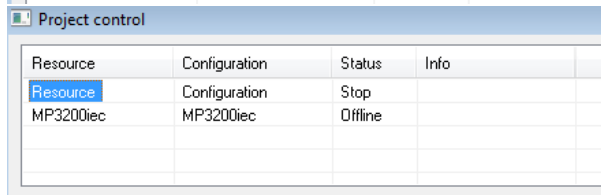


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31. Click 'Ok' and watch the Status start to increment until 100% is reached and Status is 'Stop'

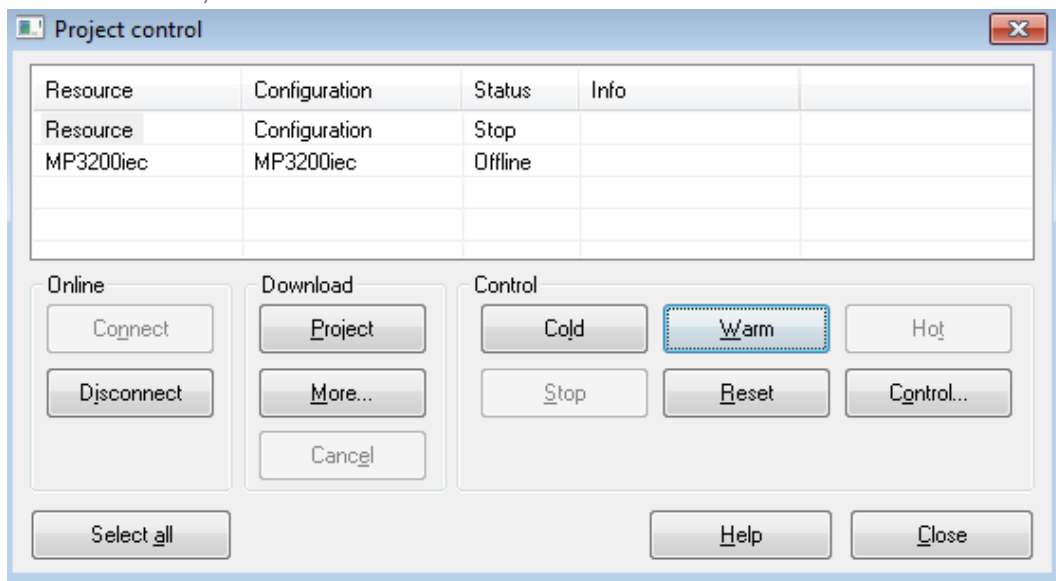


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32. In the Control Section, click 'Warm'



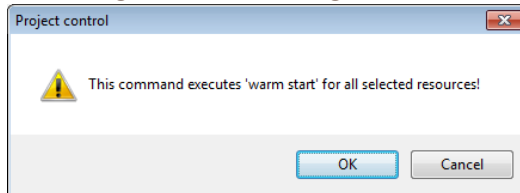
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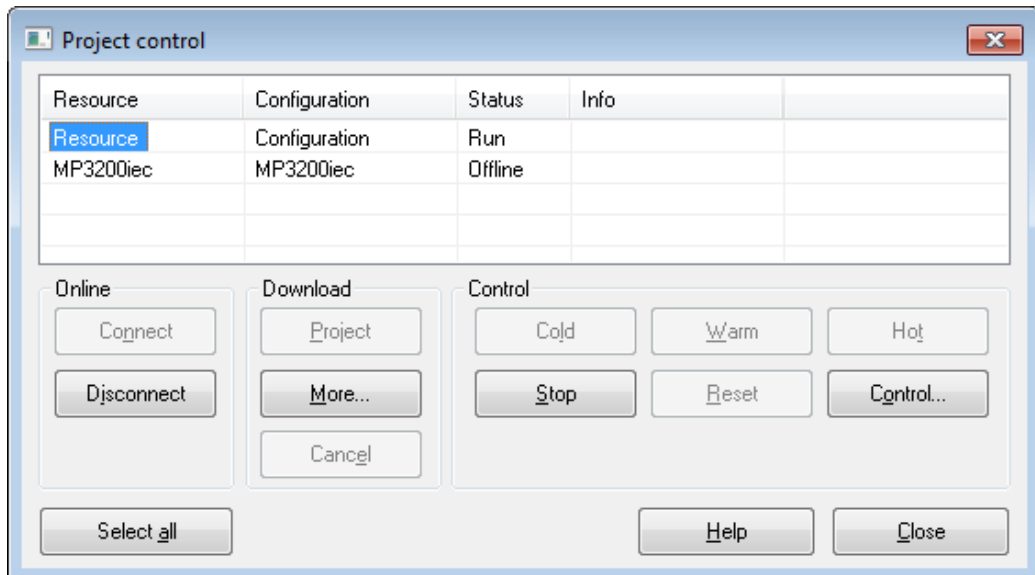
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33. Another warning about selecting 'warm start'



a.

34. The Status will now read 'Run'



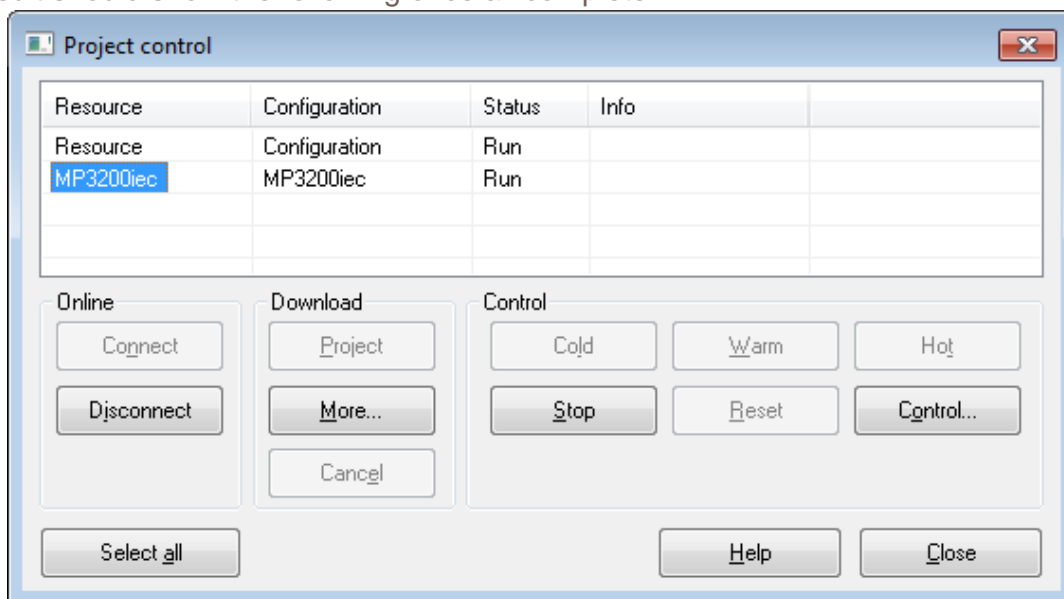
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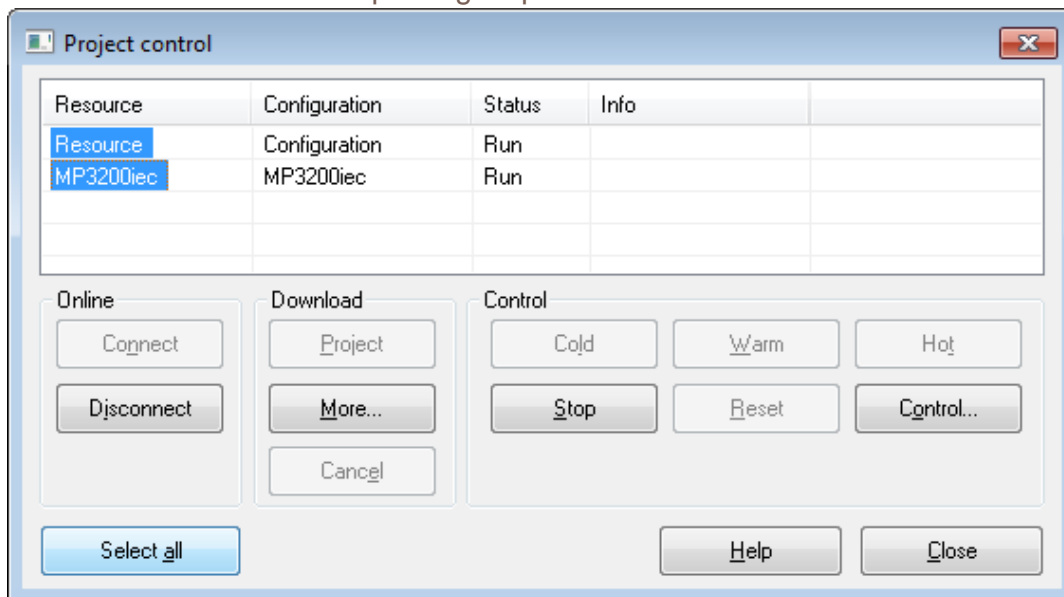
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35. Repeat steps 25 through 34 to download the project to the MP3200iec Controller. The result should show the following once all complete:



a.

36. Alternatively, the user could click on the 'Select All' button to download to all Resources / Controllers at once repeating steps 25-34:



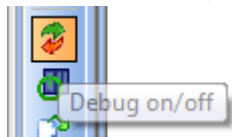
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37. Close the Project Control Window
38. In MotionWorks IEC 3, click on the 'Debug' icon to see the values online



- a. 
39. Open the Global Variables worksheet based upon whichever resource is selected to see the 'Online values'
- a. MP3300iec

Name	Online value	Type	Usage	Description
System Variables				
AXIS3 <SGD7W> - Sigma-7W Servo Amplifier - 1:3 (* Modify Variable Names, Not Group Name)				
AXIS3_SI1_POT	FALSE	BOOL	VAR_GLOB...	POT, default c
AXIS3_SI2_NOT	FALSE	BOOL	VAR_GLOB...	NOT, default c
AXIS3_SI3_DEC	FALSE	BOOL	VAR_GLOB...	DEC, default c
AXIS3_SI4_EXT1	FALSE	BOOL	VAR_GLOB...	EXT1, default
AXIS3_SI5_EXT2	FALSE	BOOL	VAR_GLOB...	EXT2, default
AXIS3_SI6_EXT3	FALSE	BOOL	VAR_GLOB...	EXT3, default
AXIS3_BRK	TRUE	BOOL	VAR_GLOB...	Brake Output
AXIS3_HBB	FALSE	BOOL	VAR_GLOB...	HBB, Stop Sig
AXIS3_SIO_IO12	FALSE	BOOL	VAR_GLOB...	Servo Input 0
AXIS3_SI1_IO13	FALSE	BOOL	VAR_GLOB...	Servo Input 1
AXIS3_SI2_IO14	FALSE	BOOL	VAR_GLOB...	Servo Input 2
AXIS3_SI3_IO15	FALSE	BOOL	VAR_GLOB...	Servo Input 3
AXIS3_ALM	FALSE	BOOL	VAR_GLOB...	Alarm On Driv
AXIS3_WARNG	FALSE	BOOL	VAR_GLOB...	Warning On C
AXIS3_SVON	FALSE	BOOL	VAR_GLOB...	Servo On
AXIS3_PON	TRUE	BOOL	VAR_GLOB...	Main Circuit P
AXIS3_PSET	TRUE	BOOL	VAR_GLOB...	Positioning Cc
AXIS3_SO1	FALSE	BOOL	VAR_GLOB...	SO1, pins 23
AXIS3_SO2	FALSE	BOOL	VAR_GLOB...	SO2, pins 25
AXIS3_SO3	FALSE	BOOL	VAR_GLOB...	SO3, pins 27
AXIS3		AXIS_REF	VAR_GLOB...	SGD7W - 3 (*
AXIS5 <SGD7S> - Sigma-7S Servo Amplifier - 1:5 (* Modify Variable Names, Not Group Name)				
AXIS5_SI1_POT	FALSE	BOOL	VAR_GLOB...	POT, default c
AXIS5_SI2_NOT	FALSE	BOOL	VAR_GLOB...	NOT, default c
AXIS5_SI3_DEC	FALSE	BOOL	VAR_GLOB...	DEC, default c
AXIS5_SI4_EXT1	FALSE	BOOL	VAR_GLOB...	EXT1, default
AXIS5_SI5_EXT2	FALSE	BOOL	VAR_GLOB...	EXT2, default
AXIS5_SI6_EXT3	FALSE	BOOL	VAR_GLOB...	EXT3, default
AXIS5_BRK	TRUE	BOOL	VAR_GLOB...	Brake Output
AXIS5_HBB	FALSE	BOOL	VAR_GLOB...	HBB, Stop Sig
AXIS5_SIO_IO12	FALSE	BOOL	VAR_GLOB...	Servo Input 0
AXIS5_SI1_IO13	FALSE	BOOL	VAR_GLOB...	Servo Input 1
AXIS5_SI2_IO14	FALSE	BOOL	VAR_GLOB...	Servo Input 2
AXIS5_SI3_IO15	FALSE	BOOL	VAR_GLOB...	Servo Input 3
AXIS5_ALM	FALSE	BOOL	VAR_GLOB...	Alarm On Driv
AXIS5_WARNG	FALSE	BOOL	VAR_GLOB...	Warning On C
AXIS5_SVON	FALSE	BOOL	VAR_GLOB...	Servo On
AXIS5_PON	TRUE	BOOL	VAR_GLOB...	Main Circuit P
AXIS5_PSET	TRUE	BOOL	VAR_GLOB...	Positioning Cc
AXIS5_SO1	FALSE	BOOL	VAR_GLOB...	SO1, pins 1 a
AXIS5_SO2	FALSE	BOOL	VAR_GLOB...	SO2, pins 23
AXIS5_SO3	FALSE	BOOL	VAR_GLOB...	SO3, pins 25

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b. MP3200iec

Name	Online value	Type	Usage	Description
System Variables				
AXIS25 <SGDV Rotary> - Sigma-V Rotary Servo Amplifier - 1:25 (* Modify Variable Names, Not				
AXIS25_S11_POT	FALSE	BOOL	VAR_GLOB...	POT, default c
AXIS25_S12_NOT	FALSE	BOOL	VAR_GLOB...	NOT, default i
AXIS25_S13_DEC	FALSE	BOOL	VAR_GLOB...	DEC, default c
AXIS25_S14_EXT1	FALSE	BOOL	VAR_GLOB...	EXT1, default
AXIS25_S15_EXT2	FALSE	BOOL	VAR_GLOB...	EXT2, default
AXIS25_S16_EXT3	FALSE	BOOL	VAR_GLOB...	EXT3, default
AXIS25_BRK	TRUE	BOOL	VAR_GLOB...	Brake Output
AXIS25_HBB	FALSE	BOOL	VAR_GLOB...	HBB, Stop Sig
AXIS25_S10_IO12	FALSE	BOOL	VAR_GLOB...	Configurable
AXIS25_S11_IO13	FALSE	BOOL	VAR_GLOB...	Configurable
AXIS25_S12_IO14	FALSE	BOOL	VAR_GLOB...	Configurable
AXIS25_S13_IO15	FALSE	BOOL	VAR_GLOB...	Configurable
AXIS25_ALM	FALSE	BOOL	VAR_GLOB...	Alarm On Driv
AXIS25_WARNG	FALSE	BOOL	VAR_GLOB...	Warning On D
AXIS25_SVON	FALSE	BOOL	VAR_GLOB...	Servo On
AXIS25_PON	TRUE	BOOL	VAR_GLOB...	Main Circuit P
AXIS25_PSET	TRUE	BOOL	VAR_GLOB...	Positioning Cc
AXIS25_SO1	FALSE	BOOL	VAR_GLOB...	SO1, pins 1 a
AXIS25_SO2	FALSE	BOOL	VAR_GLOB...	SO2, pins 23
AXIS25_SO3	FALSE	BOOL	VAR_GLOB...	SO3, pins 25
AXIS25		AXIS_REF	VAR_GLOB...	SGDV Rotary
AXIS35 <SGDV Rotary> - Sigma-V Rotary Servo Amplifier - 1:35 (* Modify Variable Names, Not				
AXIS35_S11_POT	FALSE	BOOL	VAR_GLOB...	POT, default c
AXIS35_S12_NOT	FALSE	BOOL	VAR_GLOB...	NOT, default i
AXIS35_S13_DEC	FALSE	BOOL	VAR_GLOB...	DEC, default c
AXIS35_S14_EXT1	FALSE	BOOL	VAR_GLOB...	EXT1, default
AXIS35_S15_EXT2	FALSE	BOOL	VAR_GLOB...	EXT2, default
AXIS35_S16_EXT3	FALSE	BOOL	VAR_GLOB...	EXT3, default
AXIS35_BRK	TRUE	BOOL	VAR_GLOB...	Brake Output
AXIS35_HBB	FALSE	BOOL	VAR_GLOB...	HBB, Stop Sig
AXIS35_S10_IO12	FALSE	BOOL	VAR_GLOB...	Configurable
AXIS35_S11_IO13	FALSE	BOOL	VAR_GLOB...	Configurable
AXIS35_S12_IO14	FALSE	BOOL	VAR_GLOB...	Configurable
AXIS35_S13_IO15	FALSE	BOOL	VAR_GLOB...	Configurable
AXIS35_ALM	FALSE	BOOL	VAR_GLOB...	Alarm On Driv
AXIS35_WARNG	FALSE	BOOL	VAR_GLOB...	Warning On D
AXIS35_SVON	FALSE	BOOL	VAR_GLOB...	Servo On
AXIS35_PON	TRUE	BOOL	VAR_GLOB...	Main Circuit P
AXIS35_PSET	TRUE	BOOL	VAR_GLOB...	Positioning Cc
AXIS35_SO1	FALSE	BOOL	VAR_GLOB...	SO1, pins 1 a
AXIS35_SO2	FALSE	BOOL	VAR_GLOB...	SO2, pins 23
AXIS35_SO3	FALSE	BOOL	VAR_GLOB...	SO3, pins 25