

OACIS

Open Architecture Control Integrated System

Config AB for Fieldbus with OACIS-1XC or OACIS-2XC

Version 01.07



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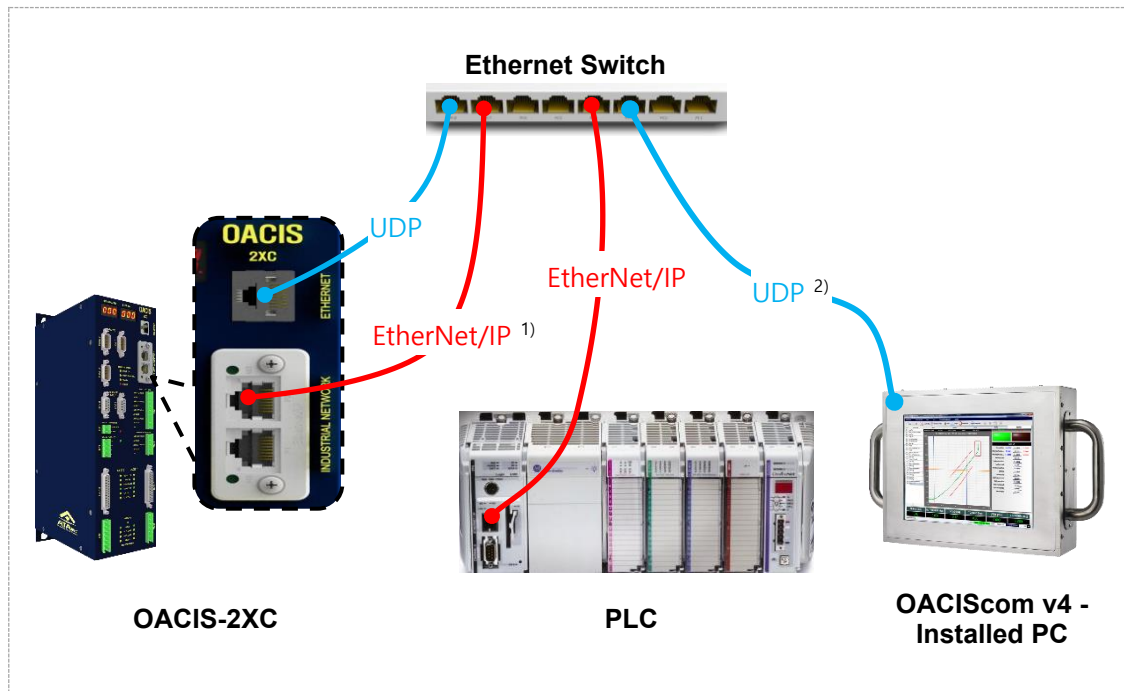
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CONTENTS

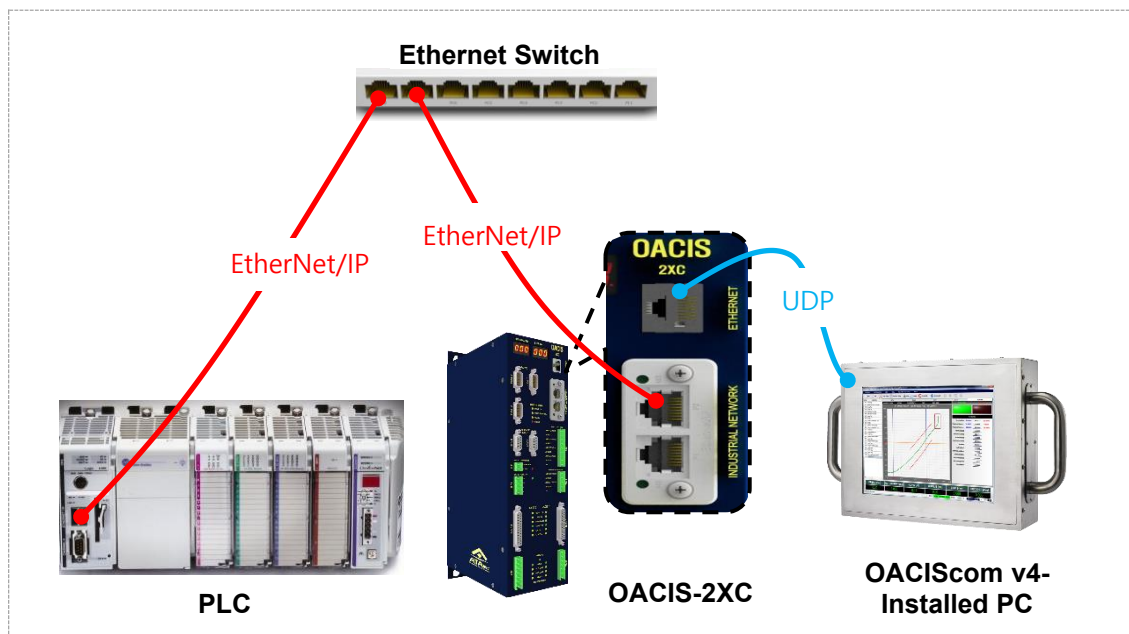
I. SYSTEM CONFIGURATION	3
A. Overall Ethernet Connection	3
B. RSLogix5000 (PLC).....	4
APPENDIX #1: ANY BUS DATA MAP	10
A. DIO Type	10
B. Real Type	10
C. Serial Type.....	10
REVISION	13

I. SYSTEM CONFIGURATION

A. Overall Ethernet Connection



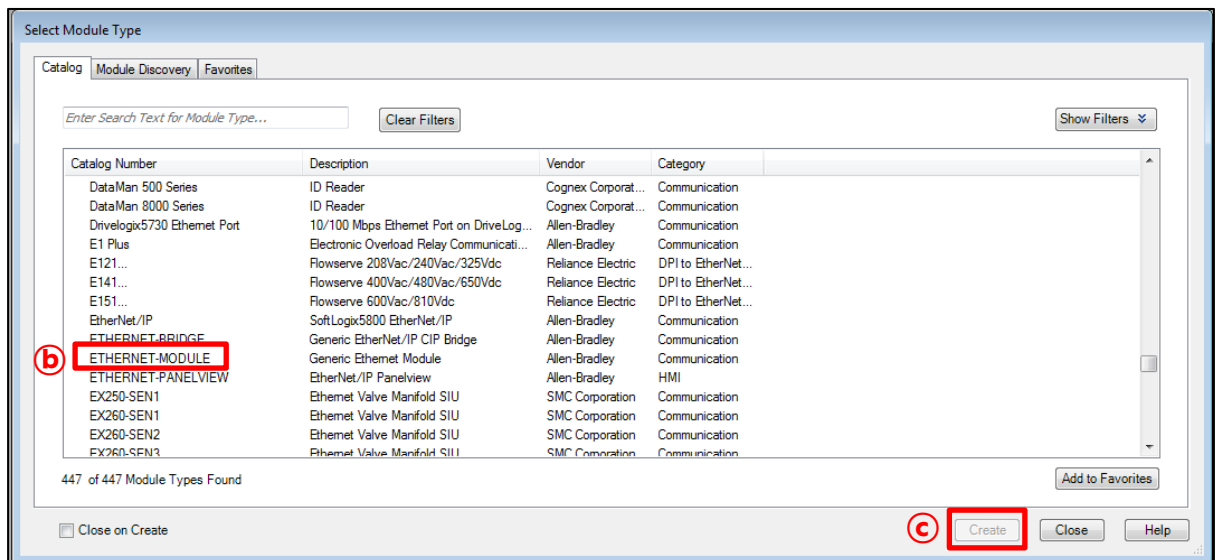
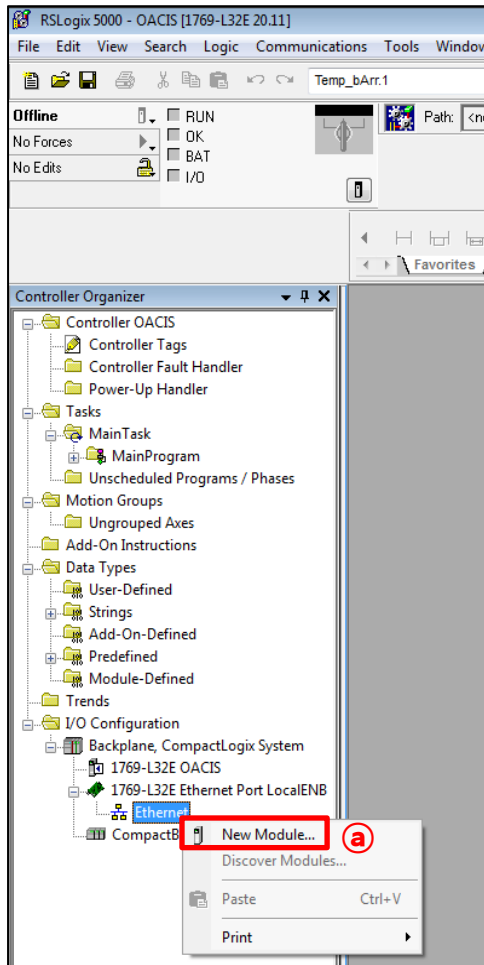
- During the initialization process, OACIS IP address shows on FND of the front panel for 2 seconds.
- Overall wiring can be different depending on the purpose of use. Generally, we recommend the connection below.



- 1) Industrial Network Protocol
- 2) User Datagram Protocol

B. RSLogix5000 (PLC)

: After you created a new controller, click “New Module” of Ethernet item.



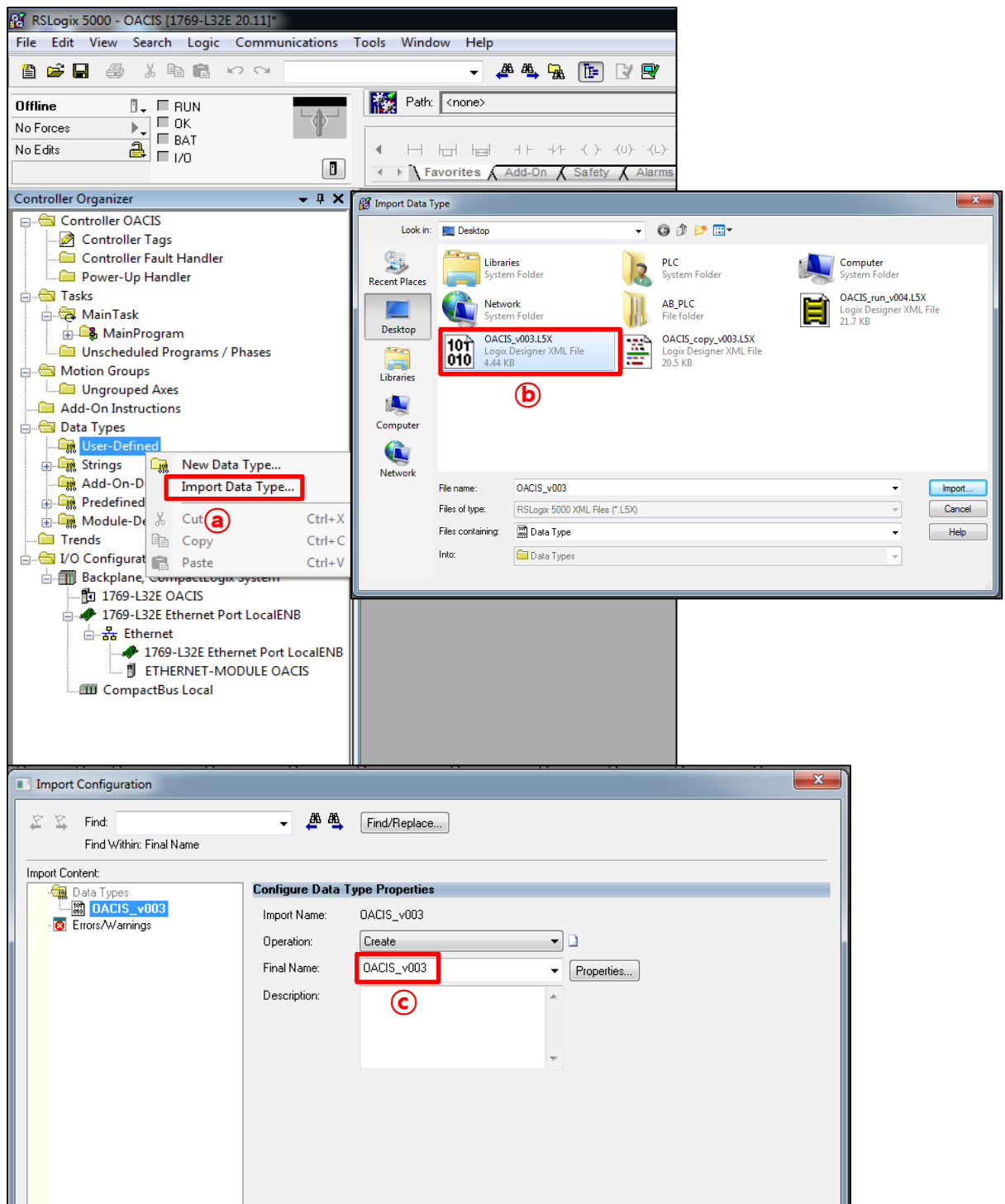
- a. Click “New Module”.
- b. Select “ETHERNET-MODULE
- c. Press “Create”.

New Module

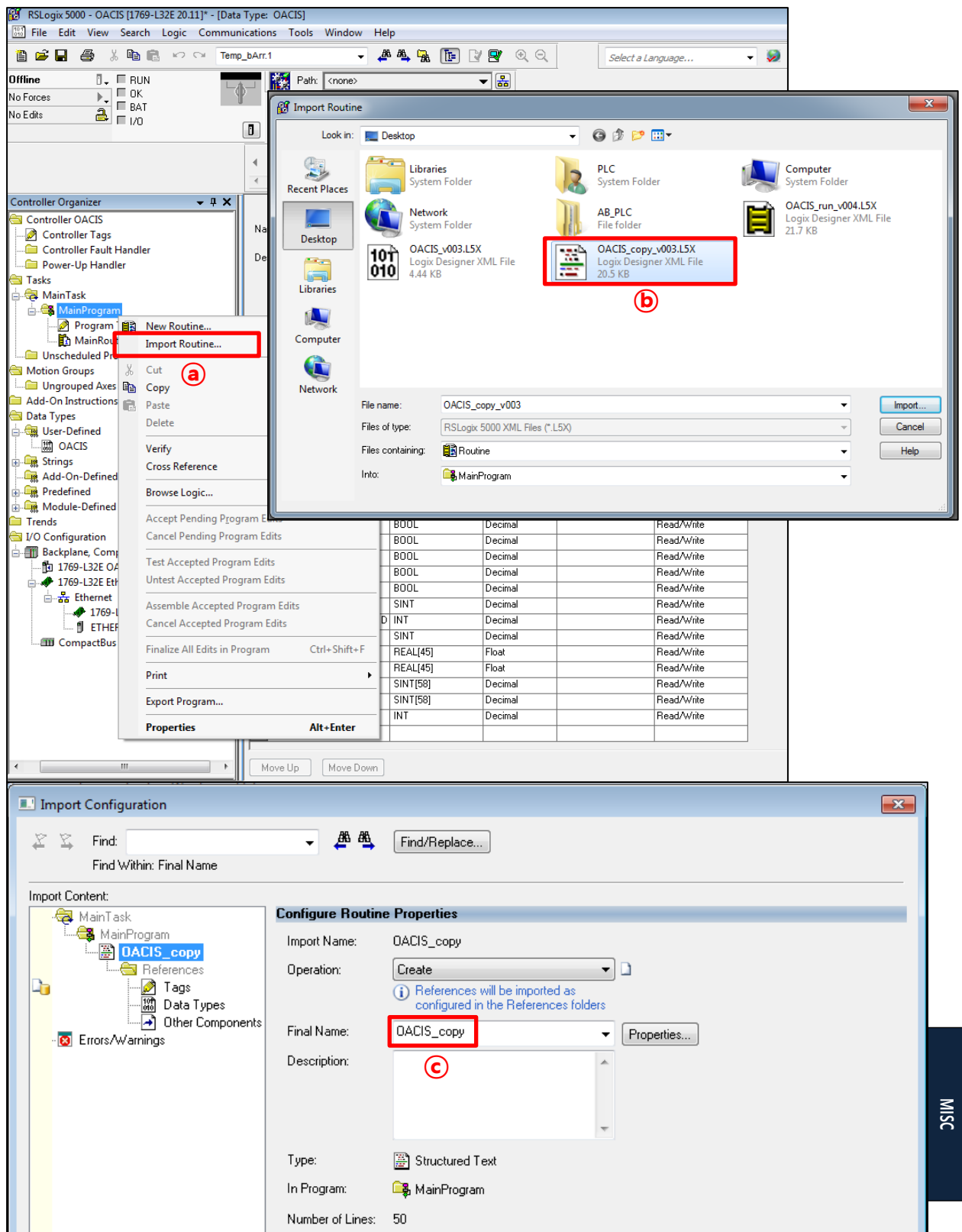
Type: ETHERNET-MODULE Generic Ethernet Module
Vendor: Allen-Bradley
Parent: LocalENB
Name: **(a)** OACIS
Description:
Comm Format: **(b)** Data - SINT
Address / Host Name
(c) ☒ IP Address: 192 . 168 . 3 . 3
☐ Host Name:
(d) Connection Parameters
Input: 100 Assembly Instance: 244 Size: (8-bit)
Output: 150 244 (8-bit)
Configuration: 1 0 (8-bit)
Status Input:
Status Output:
(e) ☒ Open Module Properties

: This is an ethernet module setting for OACIS communications

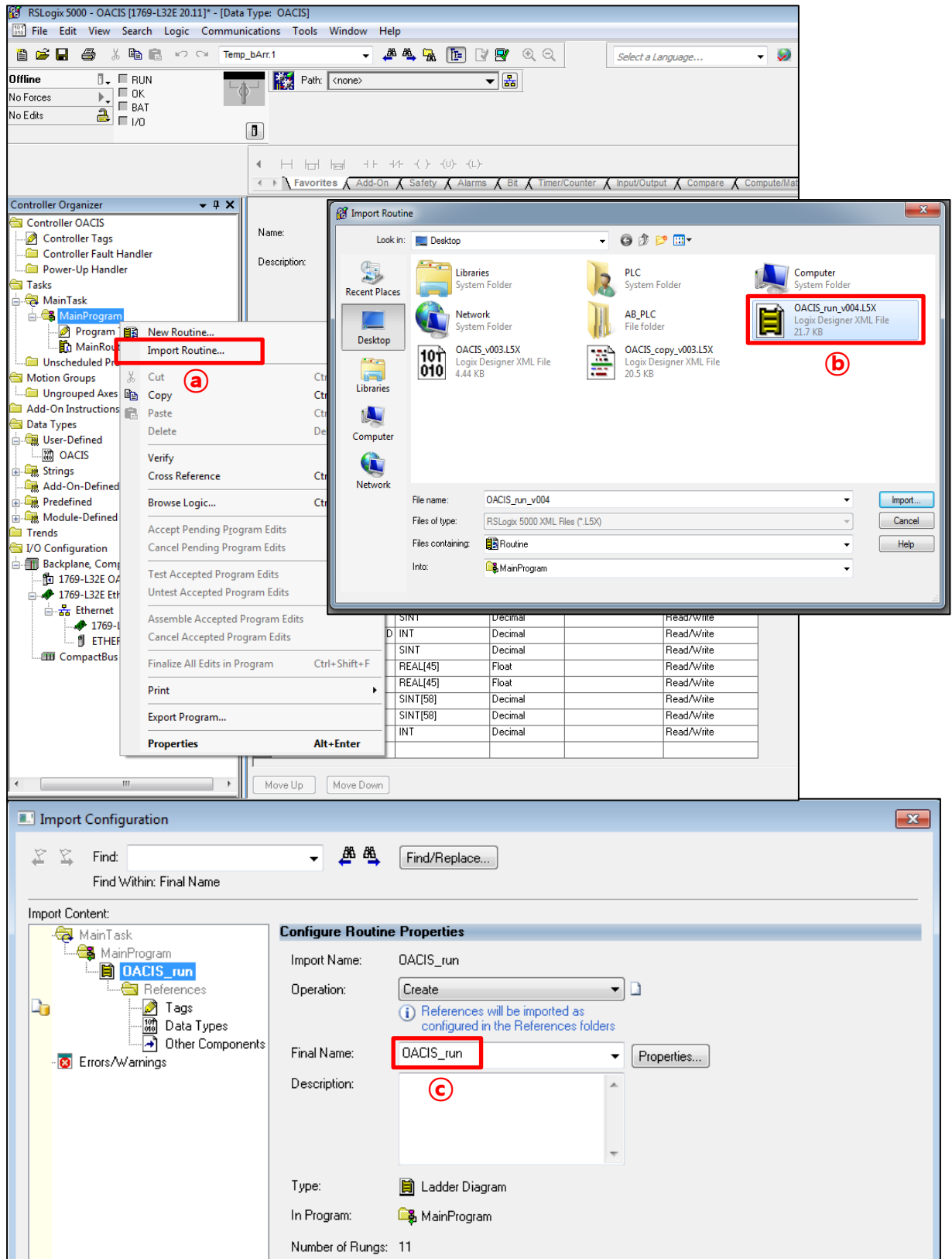
- Type in its Name. The name should be unique.
- Select "Data - SINT" for Comm Format
- The default IP address is 192. 168. 3. 3
- The above connection parameters are the important information for OACIS connection. Input and Output packet size are 244 bytes respectively.
- Click "OK" to save it.



- After creating an ethernet module, users first select "Import Data Type" at User-Defined of Data Types.
- Import "OACIS_v003.L5X" Data Type among three OACIS templates.
- Users can change the Final Name for their convenience but it should be unique. And then press "OK".

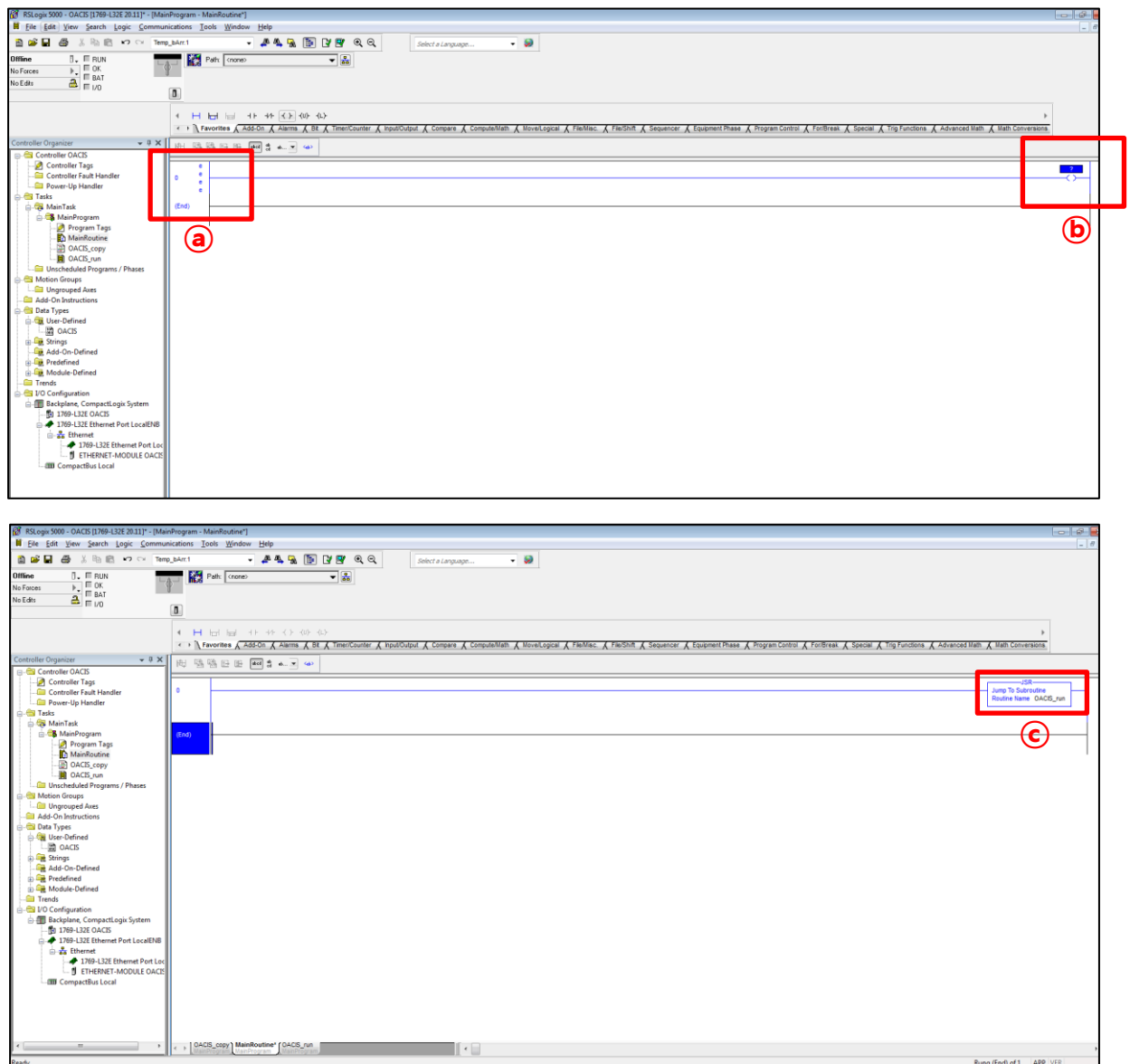


- After importing the OACIS Data Type, users need to import OACIS Sub Routine. Tasks → Main Task → Main Program → Click "Import Routine".
- Select "OACIS_copy_v003.L5X" and import it.
- Users can change the Final Name for their convenience but it should be unique. And then press "OK".



- a. After importing the OACIS_copy Sub Routine, then users need to import “OACIS_run_v004” Sub Routine. Tasks → Main Task → Main Program → Click “Import Routine”.
- b. Select “OACIS_run_v004.L5X” and import it.

c. Users can change the Final Name for their convenience and then press “OK”.



: If you imported all three OACIS templates and saved them, add OACIS-run Sub Routine on Main Routine.

- Enter into the Edit mode by clicking the left-hand side of the first Rung
- Add an Output Energize (OTE) of Program Control onto the right-hand side of the rung.
- Type in “OACIS run” as Routine Name on Jump to Subroutine (JSR)

APPENDIX #1: ANY BUS DATA MAP

: PLC communicates on the bus with OACIS via Industrial Network. Max. process data is 244 bytes between OACIS and PLC.

A. DIO Type

- Total length of Digital Outputs and Digital Inputs is 6 bytes respectively. The byte index ranges from 0 to 5. Each item size is 1 bit.

B. Real Type

- Total length of Real is 180 bytes respectively. The byte index ranges from 6 to 185. Each item size is 4 bytes.
- Real in PLC is the counterpart of global variables in OACIS.
- **Caution:** The type size of OACIS GV and PLC Real is different. The size of OACIS GV is 8 bytes but the one of PLC Real is 4 bytes. When OACIS sends or receives GV data with PLC, round-off error can occur due to the difference in size.

C. Serial Type

- Total length of Serial is 58 bytes respectively. The byte index ranges from 186 to 243.
- It is normally used for Serial Number.
- When OACIS writes Serial numbers to PLC, CR(0x0D) should be added in the last byte of serial bytes. On the contrary, if it reads from PLC, LF(0x0A) should be added.
- If you want to send "ABCD" as a serial number to OACIS, you need to update the tags as below.
Byte[186] = A / Byte[187] = B / Byte[188] = C / Byte[189] = D / Byte[190] = 0x0A

Write (OACIS → PLC)					
Type	Length (Items)	Length (Bytes)	Byte Index	Bit Index	Command
DO	48	6	0	0	Home OK
				1	Program Home OK
				2	Ready
				3	Error
				4	Program End
				5	E-Stop
				6	Heartbeat
				7	Reserved
			1	0	Program Set Out 1
				1	Program Set Out 2
				2	Program Set Out 4
				3	Program Set Out 8
				4	Program Set Out 16
				5	Program Set Out 32
				6	Program Set Out 64
				7	Reserved
			2	0	Programmable DO 1
				1	Programmable DO 2
				2	Programmable DO 3
				3	Programmable DO 4
				4	Programmable DO 5
				5	Programmable DO 6
				6	Programmable DO 7
				7	Programmable DO 8
			3	0	Programmable DO 9
				1	Programmable DO 10
				2	Programmable DO 11
				3	Programmable DO 12
				4	Programmable DO 13
				5	Programmable DO 14
				6	Reserved
				7	Reserved
			4	0	Status Binary 1
				1	Status Binary 2
				2	Status Binary 4
				3	Status Binary 8
				4	Status Binary 16
				5	Reserved
				6	Reserved
				7	Reserved
			5	0 ~ 7	Reserved
Real	45	180	6 ~ 9		Real 1
			10 ~ 13		Real 2
			...		
			182 ~ 185		Real 45
Serial	1	58	186 ~ 243		ASCIi

Read (PLC → OACIS)					
Type	Length (Items)	Length (Bytes)	Byte Index	Bit Index	Command
DI	48	6	0	0	Program Start
				1	Program Stop
				2	Return Home
				3	Reset
				4	Program Set Strobe
				5	Reserved
				6	Reserved
				7	Reserved
			1	0	Program Set In 1
				1	Program Set In 2
				2	Program Set In 4
				3	Program Set In 8
				4	Program Set In 16
				5	Program Set In 32
				6	Program Set In 64
				7	Reserved
			2	0	Programmable DI 1
				1	Programmable DI 2
				2	Programmable DI 3
				3	Programmable DI 4
				4	Programmable DI 5
				5	Programmable DI 6
				6	Programmable DI 7
				7	Programmable DI 8
			3	0	Programmable DI 9
				1	Programmable DI 10
				2	Programmable DI 11
				3	Programmable DI 12
				4	Programmable DI 13
				5	Programmable DI 14
				6	Reserved
				7	Reserved
			4	0	Reserved
				1	Reserved
				2	Reserved
				3	Reserved
				4	Reserved
				5	Reserved
				6	Reserved
				7	Reserved
			5	0 ~ 7	Reserved
Real	45	180	6 ~ 9		Real 1
					Real 2
			...		
					Real 45
Serial	1	58	186 ~ 243		ASCii

REVISION

v1.00: Engineering Released

v1.01(JUN. 28. 2017)

- Added Information in Appendix #1 chart

v1.02(AUG. 12. 2017)

- Changed information in Appendix #1 chart
- Added Information in 1-A

v1.03(AUG. 17. 2017)

- RSLogix5000 Picture changed in I

v1.04(AUG. 18. 2017)

- Explanation modified in I.A

v1.05(NOV. 10. 2017)

- Added Information in Appendix #1

v1.06(Aug. 16. 2018)

- OACIS-1XC Released
- Page Format Updated

v1.07(Oct. 14. 2019)

- Overall system image modified in I.A