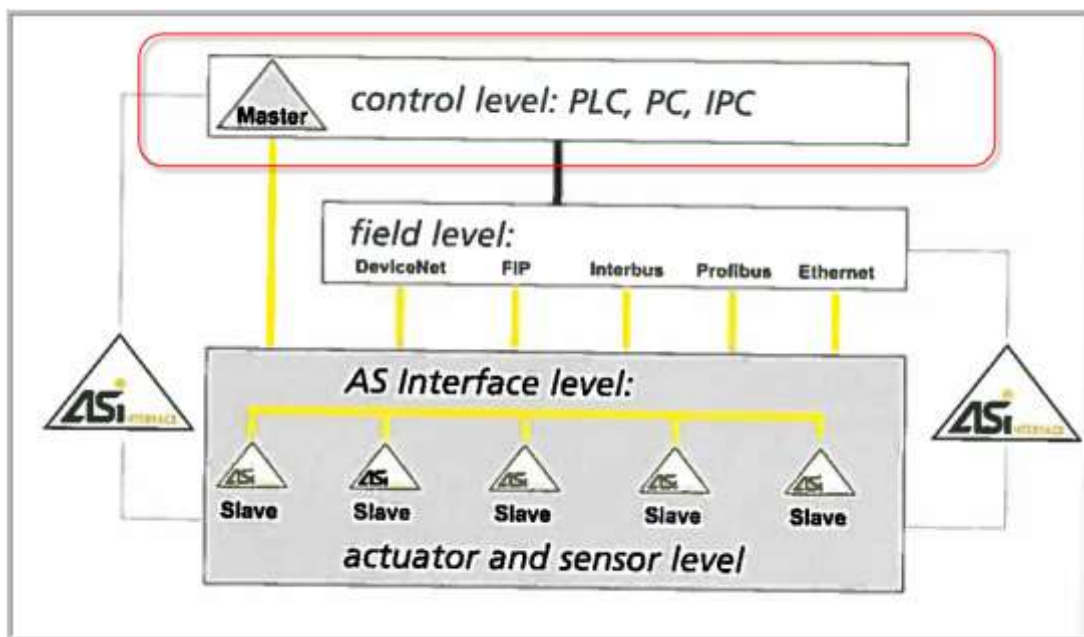


Integrating –EV AS-Interface Gateway(s) into Rockwell PLC

Introduction: AS-Interface remains a cost effective and flexible open industrial networking technology. This technology easily integrates with Rockwell PLCs. Our products tie nicely into EtherNet/IP. Combining AS-Interface with Rockwell PLCs and EtherNet/IP also offers a very cost effective functional safety solution.



In the following application note we will outline the steps to.....

- *Add an –EV AS-Interface Gateway to an RSLogix5000 controller configuration.*
- *Summarize the various direct mapping options available with –EV Gateways for monitoring AS-Interface diagnostics.*

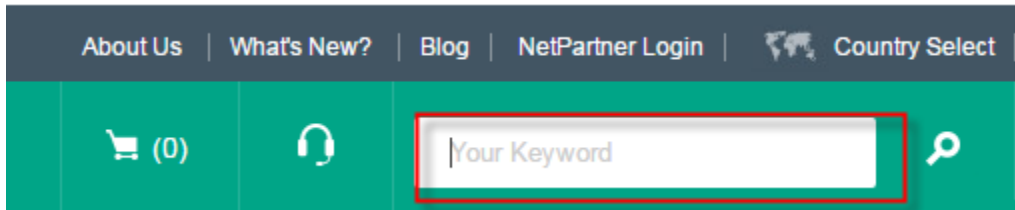


Contents

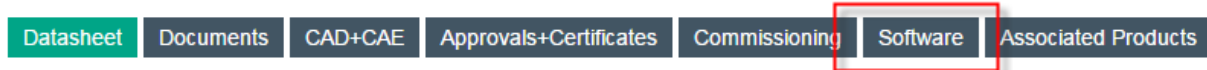
Integrating –EV AS-Interface Gateway(s) into Rockwell PLC	1
Exercise #1: Download AS-Interface Toolkit	4
Exercise #2: Register the EDS Files in RSLogix 5000 V20.....	4
Exercise #3: Adding P+F Gateway in RSLogix5000 software.....	5
.....	5
Adding New Module	5
Select P+F Gateway.....	5
IP Address configuration of AS-Interface Gateway.....	6
Mapping Ethernet/IP gateway in RSLogix 5000 V20 or higher	6
Controller Tags Added	8
Exercise #4: Importing Description Files (strongly recommended).....	8
Tools > Import > Tags and Logic Comments	8
Select the corresponding Description File	9
Exercise #5: Viewing Descriptions for AS-Interface Network in RSLogix5000	13
APPENDIX:	14
ASi-1 Discrete Only.....	14
ASi-1 Discrete +Analog 313029.....	15
ASi-1 Discrete + Analog 10-31.....	16
ASi-1+2 Discrete Only	17
ASi-1+2 Discrete + Analog 313029.....	18
ASi-1+2 Discrete + Analog 10-31.....	19
ASi-1+2 Discrete + Safety.....	21
ASi-1+2 Discrete + Analog 313029 + Safety	22
ASi-1+2 Discrete + Analog 10-31 + Safety.....	23

Exercise #1: Download AS-Interface Toolkit

- <http://www.pepperl-fuchs.us/usa/en/index.htm>
- Search for one of the following Gateways
 - VBG-ENX-K20-D-EV24
 - VBG-ENX-K20-DMD-EV
 - VBG-ENX-K30-DMD-S16-EV

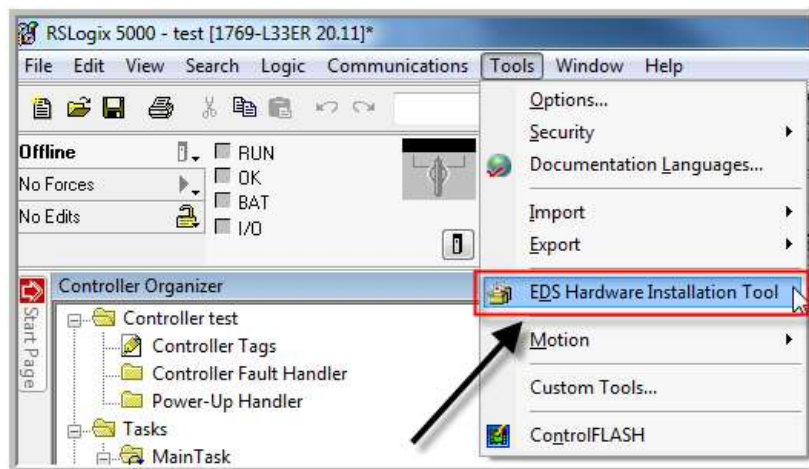


- The Toolkit is posted under the Software Tab



Exercise #2: Register the EDS Files in RSLogix 5000 V20

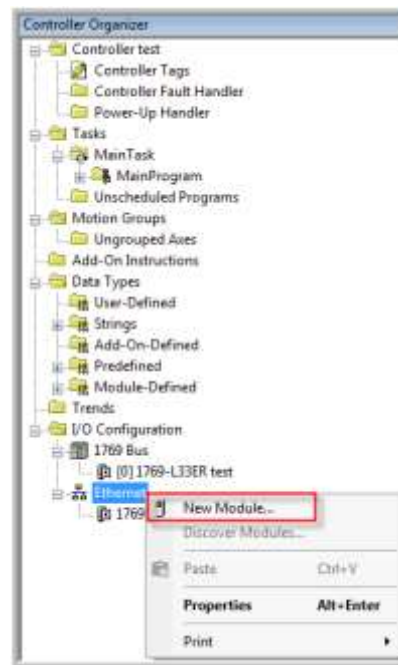
- Import the EDS File
- Register > EDS File



Exercise #3: Adding P+F Gateway in RSLogix5000 software

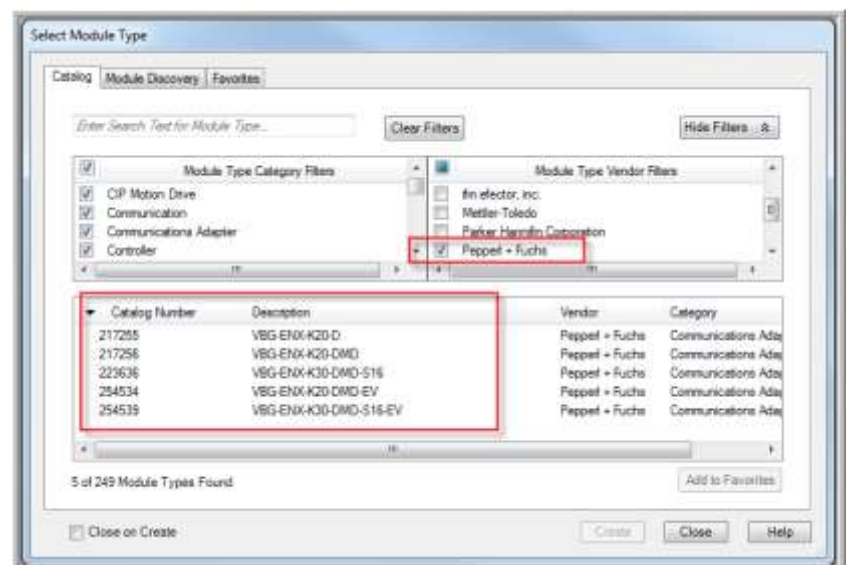
Adding New Module

- Ethernet > New Module



Select P+F Gateway

- Select the AS-Interface Gateway you are using
- Search VBG – Add to Favorites > Create



IP Address configuration of AS-Interface Gateway

- Use IP Address of what AS-Interface Gateway configured for
- **IMPORTANT:** Use **Gateway1** for name – so Description Files are able to be imported accurately
- Connection Tab : Defines RPI (Requested Packet Interval) = keep at default
- Input Type = unicast = keep as default



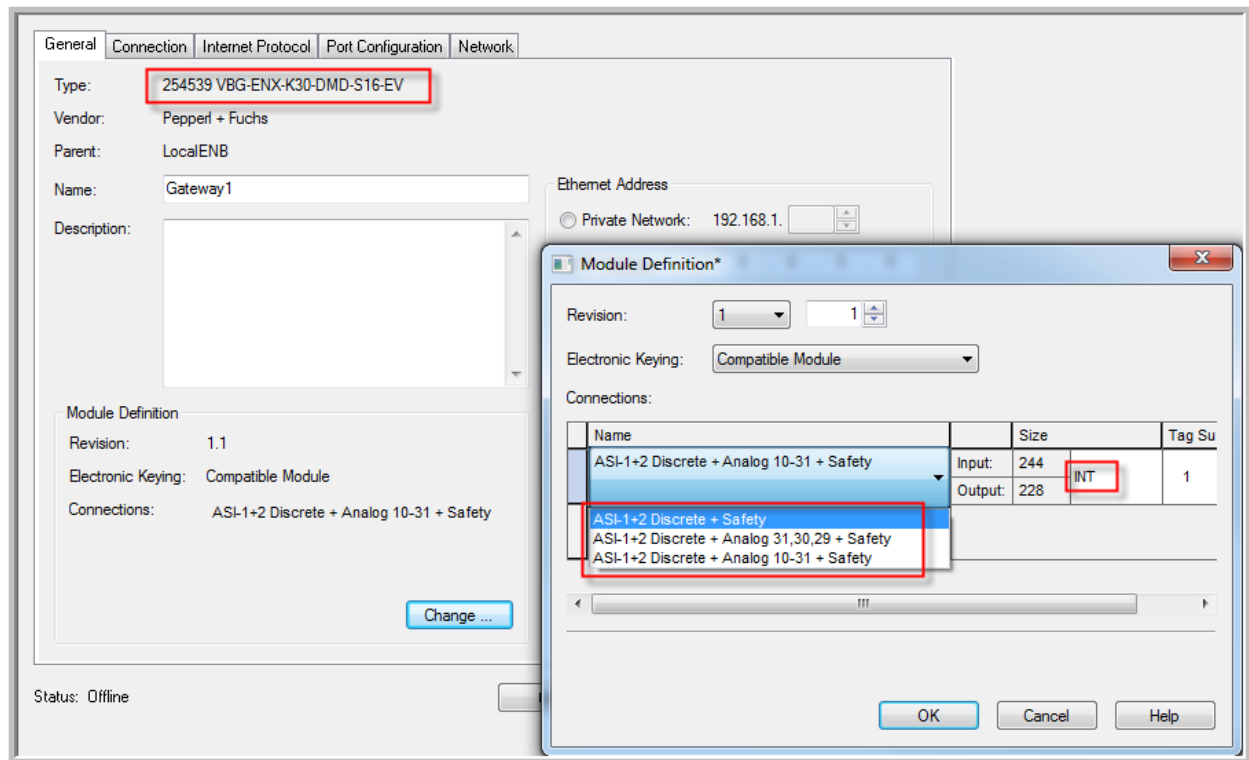
Mapping Ethernet/IP gateway in RSLogix 5000 V20 or higher

In RSLogix 5000 V20 or higher, EDS files enable you to easily choose a data mapping option. Depending on the Gateway selected will determine which mapping options are available. Please reference the chart below to see the various mapping options available for the various AS-Interface Gateways.

NOTE: The APPENDIX of this document is provided that goes into further detail of the data directly mapped in the Rockwell PLC.

Mapping						
		VBG-ENX-K20-D-EV24	VBG-ENX-K20-DMD-EV	VBG-ENX-K30-DMD-S16-EV		
ASI-1 Discrete Only		x				
ASI-1 Discrete + Analog 31,30,29		x				
ASI-1 Discrete + Analog 10-31		x				
ASI-1+2 Discrete Only			x			
ASI-1+2 Discrete + Analog 31,30,29			x			
ASI-1+2 Discrete + Analog 10-31			x			
ASI-1+2 Discrete + Safety				x		
ASI-1+2 Discrete + Analog 31,30,29 + Safety				x		
ASI-1+2 Discrete + Analog 10-31 + Safety				x		

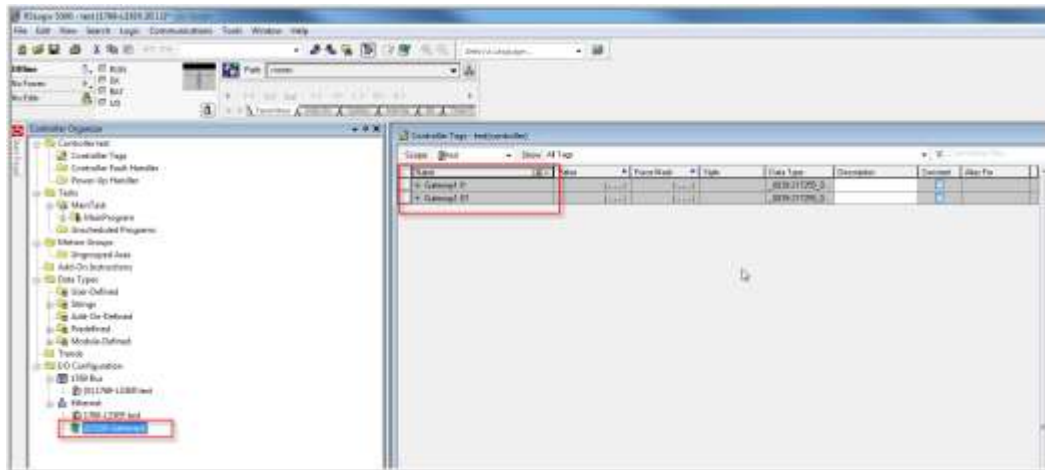
IMPORTANT: BE SURE to change the data format to INT so the mailbox can be used properly.



Controller Tags Added

- New profile established in RSLogix5000
- New tags mapped under controller tags

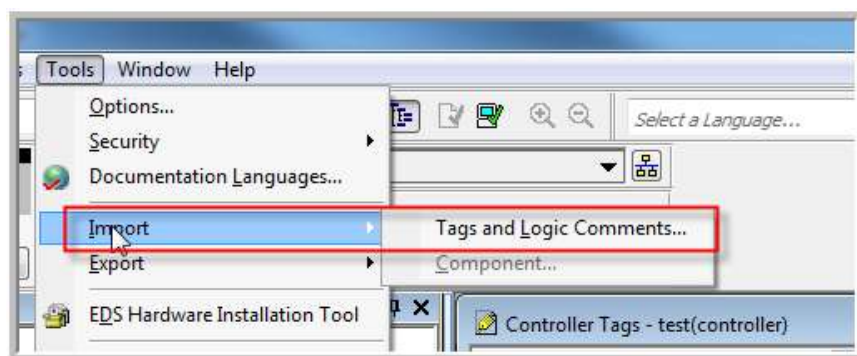
ISSUE: At this point, large array of data created, however programmer is not sure where the AS-Interface modules are or what they are called



Exercise #4: Importing Description Files (strongly recommended)

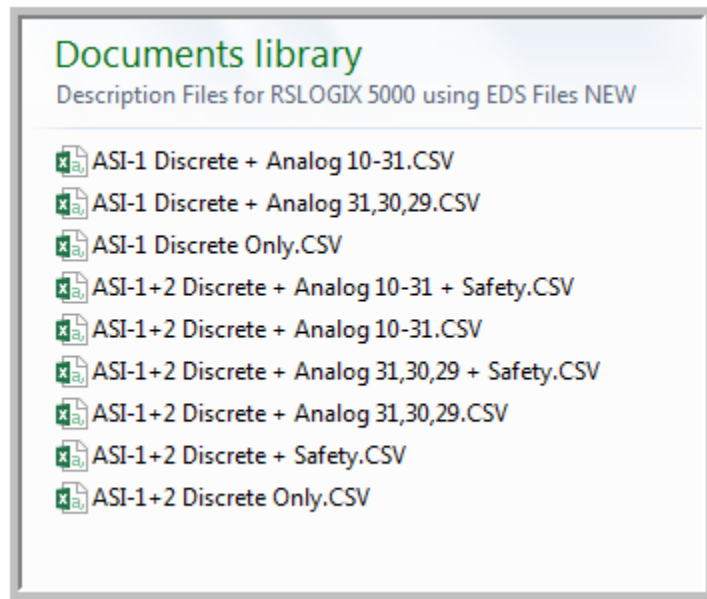
Once all the data has been mapped you need to know where the mailbox is located. Pepperl-Fuchs has created description files for each mapping. These files show you exactly where all of the digital inputs and outputs are located for every slave address. The files also show where all analog, safety diagnostic and mail data are located as well.

Tools > Import > Tags and Logic Comments



Select the corresponding Description File

- Choose File Name of Description File
- Choose Import



How it works

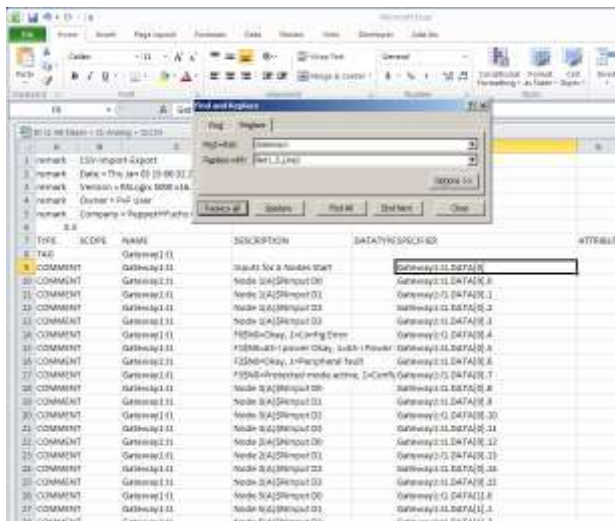
The description file just assigns a description to a variable in the PLC. These were made specific to a “Gateway name” and a specific IO mapping.

Gateway Name

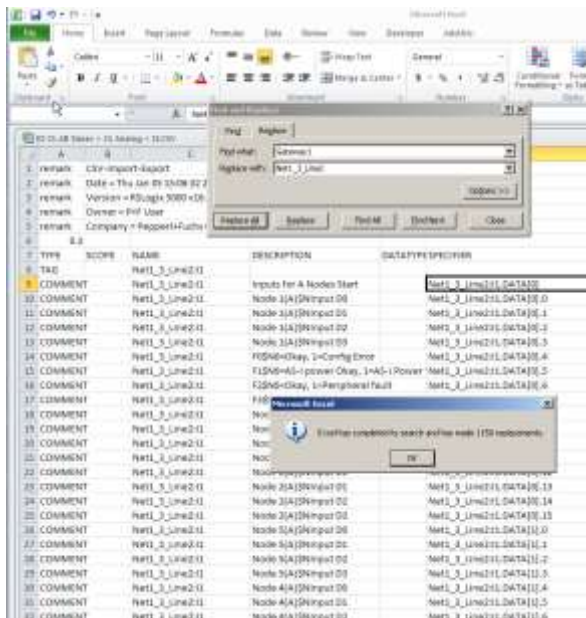
The description files always use the name “Gateway1”.

NOTE: If your gateway has a different name just open up the .csv file and do a find/replace.

- Switch Gateway1 >>>> “your gateway name”
- Example of Gateway1 renamed Net1_3_Line2



Before

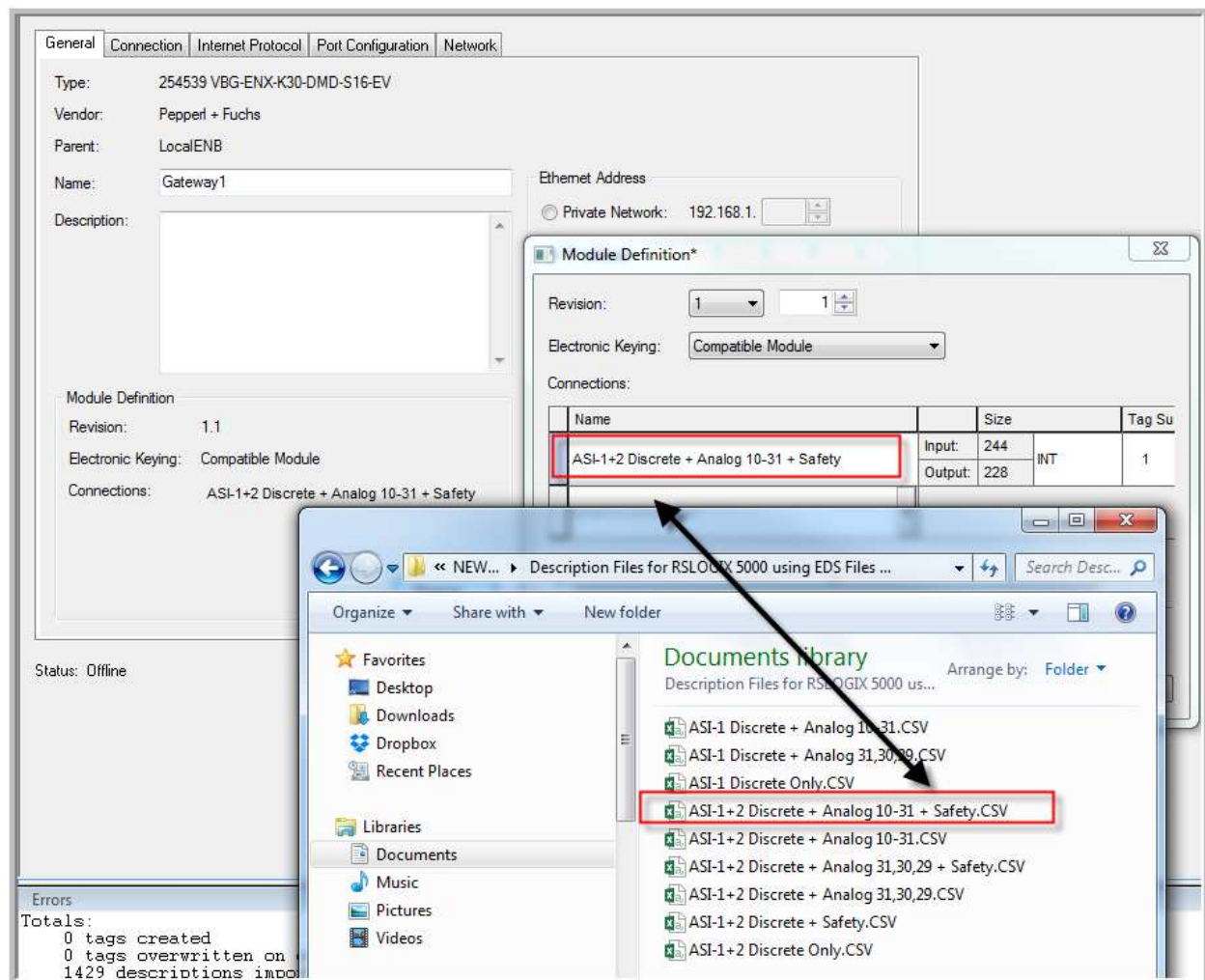


After

Description Files for RSLogix 5000 V20 using EDS file: These files are used whenever you will be using an EDS file. These files are primarily used with Ethernet/IP gateways.

Description file names

NOTE: The file name(s) are similar to the data mapping option chosen. The primary difference is that : or / characters are not allowed in the file names.



Import the csv files using RSLogix 5000



Gateway 11		009522636_C
- Gateway 11 Connection Failed	0	Decimal	800L	
- Gateway 11 Data	...	Decimal	INT[29]	
- Gateway 11 Data[0]	0	Decimal	INT	Inputs for A Nodes Start
- Gateway 11 Data[0].0	0	Decimal	800L	Node 1A) Input D0
- Gateway 11 Data[0].1	0	Decimal	800L	Node 1A) Input D1
- Gateway 11 Data[0].2	0	Decimal	800L	Node 1A) Input D2
- Gateway 11 Data[0].3	0	Decimal	800L	Node 1A) Input D3
- Gateway 11 Data[0].4	0	Decimal	800L	F0-Delay, 1-Config Error
- Gateway 11 Data[0].5	0	Decimal	800L	F1-Delay, 1-power Okay, 1-ws-1 Power failure
- Gateway 11 Data[0].6	0	Decimal	800L	F2-Delay, 1-Peripheral fault
- Gateway 11 Data[0].7	0	Decimal	800L	F3-0-Protected mode active, 1-Configuration mode active
- Gateway 11 Data[0].8	0	Decimal	800L	Node 3A) Input D0
- Gateway 11 Data[0].9	0	Decimal	800L	Node 3A) Input D1
- Gateway 11 Data[0].10	0	Decimal	800L	Node 3A) Input D2
- Gateway 11 Data[0].11	0	Decimal	800L	Node 3A) Input D3
- Gateway 11 Data[0].12	0	Decimal	800L	Node 2A) Input D0
- Gateway 11 Data[0].13	0	Decimal	800L	Node 2A) Input D1
- Gateway 11 Data[0].14	0	Decimal	800L	Node 2A) Input D2
- Gateway 11 Data[0].15	0	Decimal	800L	Node 2A) Input D3
+ Gateway 11 Data[1]	0	Decimal	INT	
+ Gateway 11 Data[2]	0	Decimal	INT	
+ Gateway 11 Data[3]	0	Decimal	INT	
+ Gateway 11 Data[4]	0	Decimal	INT	
+ Gateway 11 Data[5]	0	Decimal	INT	
+ Gateway 11 Data[6]	0	Decimal	INT	
+ Gateway 11 Data[7]	0	Decimal	INT	
+ Gateway 11 Data[8]	0	Decimal	INT	Analog Input 1 address 31
+ Gateway 11 Data[9]	0	Decimal	INT	Analog Input 2 address 31
+ Gateway 11 Data[10]	0	Decimal	INT	Analog Input 3 address 31, Analog Input 1 address 318
+ Gateway 11 Data[11]	0	Decimal	INT	Analog Input 4 address 31, Analog Input 2 address 318
+ Gateway 11 Data[12]	0	Decimal	INT	Analog Input 1 address 30
+ Gateway 11 Data[13]	0	Decimal	INT	Analog Input 2 address 30
+ Gateway 11 Data[14]	0	Decimal	INT	Analog Input 3 address 30, Analog Input 1 address 308
+ Gateway 11 Data[15]	0	Decimal	INT	Analog Input 4 address 30, Analog Input 2 address 308
+ Gateway 11 Data[16]	0	Decimal	INT	Analog Input 1 address 29
+ Gateway 11 Data[17]	0	Decimal	INT	Analog Input 2 address 29
+ Gateway 11 Data[18]	0	Decimal	INT	Analog Input 3 address 29, Analog Input 1 address 298
+ Gateway 11 Data[19]	0	Decimal	INT	Analog Input 4 address 29, Analog Input 2 address 298
+ Gateway 11 Data[20]	0	Decimal	INT	Large Malbox 1 Response Start

Mapping example

Exercise #5: Viewing Descriptions for AS-Interface Network in RSLogix5000

- Go to input & output tags to see how nodes represented
 - Tells where I/O will start
 - Addresses spelled out to the bit level

Controller Tags - test(controller)

Scope: test Show: All Tags

Name	Value	Force Mask	Style	Data Type	Description	Constant	Alias
Gateway1:11	{...}	{...}		_0039:217255_5...			
Gateway1:11.ConnectionFaulted	0		Decimal	BOOL			
Gateway1:11.Data	{...}	{...}	Decimal	INT[27]			
Gateway1:11.Data[0]	0		Decimal	INT	Inputs for A Nodes Start		
Gateway1:11.Data[0].0	0		Decimal	BOOL	Node 1(A) Input D0		
Gateway1:11.Data[0].1	0		Decimal	BOOL	Node 1(A) Input D1		
Gateway1:11.Data[0].2	0		Decimal	BOOL	Node 1(A) Input D2		
Gateway1:11.Data[0].3	0		Decimal	BOOL	Node 1(A) Input D3		
Gateway1:11.Data[0].4	0		Decimal	BOOL	F0 0=Okay, 1=Config Error		
Gateway1:11.Data[0].5	0		Decimal	BOOL	F1 0=AS-i power Okay, 1=AS-i Power failure		
Gateway1:11.Data[0].6	0		Decimal	BOOL	F2 0=Okay, 1=Peripheral fault		
Gateway1:11.Data[0].7	0		Decimal	BOOL	F3 0=Protected mode active, 1=Configura...		
Gateway1:11.Data[0].8	0		Decimal	BOOL	Node 3(A) Input D0		
Gateway1:11.Data[0].9	0		Decimal	BOOL	Node 3(A) Input D1		
Gateway1:11.Data[0].10	0		Decimal	BOOL	Node 3(A) Input D2		
Gateway1:11.Data[0].11	0		Decimal	BOOL	Node 3(A) Input D3		
Gateway1:11.Data[0].12	0		Decimal	BOOL	Node 2(A) Input D0		
Gateway1:11.Data[0].13	0		Decimal	BOOL	Node 2(A) Input D1		
Gateway1:11.Data[0].14	0		Decimal	BOOL	Node 2(A) Input D2		
Gateway1:11.Data[0].15	0		Decimal	BOOL	Node 2(A) Input D3		
Gateway1:11.Data[1]	0		Decimal	INT			
Gateway1:11.Data[2]	0		Decimal	INT			
Gateway1:11.Data[3]	0		Decimal	INT			
Gateway1:11.Data[4]	0		Decimal	INT			
Gateway1:11.Data[5]	0		Decimal	INT			
Gateway1:11.Data[6]	0		Decimal	INT			
Gateway1:11.Data[7]	0		Decimal	INT			
Gateway1:11.Data[8]	0		Decimal	INT			
Gateway1:11.Data[9]	0		Decimal	INT			
Gateway1:11.Data[10]	0		Decimal	INT			
Gateway1:11.Data[11]	0		Decimal	INT			
Gateway1:11.Data[12]	0		Decimal	INT			
Gateway1:11.Data[13]	0		Decimal	INT			

BENEFIT: Easy for programmer and no manuals needed

BENEFIT: No ladder logic, everything is directly mapped

The following table summarizes the possible AS-Interface mapping options for each of the –EV Gateways.

	VBG-ENX-K20-D-EV24	VBG-ENX-K20-DMD-EV	VBG-ENX-K30-DMD-S16-EV
ASI-1 Discrete Only	x		
ASI-1 Discrete + Analog 31,30,29	x		
ASI-1 Discrete + Analog 10-31	x		
ASI-1+2 Discrete Only		x	
ASI-1+2 Discrete + Analog 31,30,29		x	
ASI-1+2 Discrete + Analog 10-31		x	
ASI-1+2 Discrete + Safety			x
ASI-1+2 Discrete + Analog 31,30,29 + Safety			x
ASI-1+2 Discrete + Analog 10-31 + Safety			x

ASi-1 Discrete Only

[illegible]

ASI-1 Discrete +Analog 313029

Duplicate	Output Image																Input Image															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
word0	class 202A	class 102A															class 202A	class 102A														class 202A
word1	class 600A	class 107A	class 60A														class 600A	class 107A	class 60A													class 600A
word2	class 307A	class 107A	class 60A														class 307A	class 107A	class 60A													class 307A
word3	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word4	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word5	class 202A	class 102A															class 202A	class 102A														class 202A
word6	class 600A	class 107A	class 60A														class 600A	class 107A	class 60A													class 600A
word7	class 307A	class 107A	class 60A														class 307A	class 107A	class 60A													class 307A
word8	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word9	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word10	class 202A	class 102A															class 202A	class 102A														class 202A
word11	class 600A	class 107A	class 60A														class 600A	class 107A	class 60A													class 600A
word12	class 307A	class 107A	class 60A														class 307A	class 107A	class 60A													class 307A
word13	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word14	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word15	class 202A	class 102A															class 202A	class 102A														class 202A
word16	class 600A	class 107A	class 60A														class 600A	class 107A	class 60A													class 600A
word17	class 307A	class 107A	class 60A														class 307A	class 107A	class 60A													class 307A
word18	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word19	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word20	class 202A	class 102A															class 202A	class 102A														class 202A
word21	class 600A	class 107A	class 60A														class 600A	class 107A	class 60A													class 600A
word22	class 307A	class 107A	class 60A														class 307A	class 107A	class 60A													class 307A
word23	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word24	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word25	class 202A	class 102A															class 202A	class 102A														class 202A
word26	class 600A	class 107A	class 60A														class 600A	class 107A	class 60A													class 600A
word27	class 307A	class 107A	class 60A														class 307A	class 107A	class 60A													class 307A
word28	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word29	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word30	class 202A	class 102A															class 202A	class 102A														class 202A
word31	class 600A	class 107A	class 60A														class 600A	class 107A	class 60A													class 600A
word32	class 307A	class 107A	class 60A														class 307A	class 107A	class 60A													class 307A
word33	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word34	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word35	class 202A	class 102A															class 202A	class 102A														class 202A
word36	class 600A	class 107A	class 60A														class 600A	class 107A	class 60A													class 600A
word37	class 307A	class 107A	class 60A														class 307A	class 107A	class 60A													class 307A
word38	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word39	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word40	class 202A	class 102A															class 202A	class 102A														class 202A
word41	class 600A	class 107A	class 60A														class 600A	class 107A	class 60A													class 600A
word42	class 307A	class 107A	class 60A														class 307A	class 107A	class 60A													class 307A
word43	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word44	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	
word45	class 202A	class 102A															class 202A	class 102A														class 202A
word46	class 600A	class 107A	class 60A														class 600A	class 107A	class 60A													class 600A
word47	class 307A	class 107A	class 60A														class 307A	class 107A	class 60A													class 307A
word48	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 60A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 107A	class 10			

Chip#	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Board	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Board	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Board	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Board	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Board	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	7																				

Output Image	31	30	29	28	27	26	25	24	23	22	Input Image	31	30	29	28	27	26	25	24	23	22	
word0	class 255A	class 255A	flag	class 255A	Outputs for A Nodes							class 255A	class 255A	flag	class 255A	Inputs for A Nodes						
word1	class 555A	class 117A	class 444A	class 555A								class 555A	class 117A	class 444A	class 555A							
word2	class 555A	class 117A	class 655A	class 355A								class 555A	class 117A	class 655A	class 355A							
word3	class 155A	class 555A	class 117A	class 133A								class 155A	class 555A	class 117A	class 133A							
word4	class 355A	class 255A	class 255A	class 117A								class 355A	class 255A	class 255A	class 117A							
word5	class 232A	class 232A	class 202A	class 213A								class 232A	class 232A	class 202A	class 213A							
word6	class 255A	class 212A	class 242A	class 252A								class 255A	class 212A	class 242A	class 252A							
word7	class 255A	class 255A	class 252A	class 252A								class 255A	class 255A	class 252A	class 252A							
word8	class 255A	class 255A	reserved	class 117A	Outputs for B Nodes							class 255A	class 255A	reserved	class 117A	Inputs for B Nodes						
word9	class 555A	class 117A	class 444A	class 555A								class 555A	class 117A	class 444A	class 555A							
word10	class 555A	class 117A	class 655A	class 355A								class 555A	class 117A	class 655A	class 355A							
word11	class 155A	class 555A	class 117A	class 133A								class 155A	class 555A	class 117A	class 133A							
word12	class 355A	class 255A	class 255A	class 117A								class 355A	class 255A	class 255A	class 117A							
word13	class 232A	class 232A	class 202A	class 213A								class 232A	class 232A	class 202A	class 213A							
word14	class 255A	class 212A	class 242A	class 252A								class 255A	class 212A	class 242A	class 252A							
word15	class 255A	class 255A	class 252A	class 252A								class 255A	class 255A	class 252A	class 252A							
word16	class 255A	class 255A	flag	class 255A	Outputs for Network 2, A Nodes							class 255A	class 255A	flag	class 255A	Inputs for Network 2, A Nodes						
word17	class 555A	class 117A	class 444A	class 555A																		

[illegible]

ASI-1+2 Discrete + Analog 10-31

Device Name										Serial Number									
Model	Year	Month	Day	Hour	Minute	Second	Day of Week	Day of Month	Day of Year	Model	Year	Month	Day	Hour	Minute	Second	Day of Week	Day of Month	Day of Year
node0	2020	01	01	00	00	00	Monday	1	1	node00	2020	01	01	00	00	00	Monday	1	1
node1	2020	01	01	00	00	00	Monday	1	1	node01	2020	01	01	00	00	00	Monday	1	1
node2	2020	01	01	00	00	00	Monday	1	1	node02	2020	01	01	00	00	00	Monday	1	1
node3	2020	01	01	00	00	00	Monday	1	1	node03	2020	01	01	00	00	00	Monday	1	1
node4	2020	01	01	00	00	00	Monday	1	1	node04	2020	01	01	00	00	00	Monday	1	1
node5	2020	01	01	00	00	00	Monday	1	1	node05	2020	01	01	00	00	00	Monday	1	1
node6	2020	01	01	00	00	00	Monday	1	1	node06	2020	01	01	00	00	00	Monday	1	1
node7	2020	01	01	00	00	00	Monday	1	1	node07	2020	01	01	00	00	00	Monday	1	1
node8	2020	01	01	00	00	00	Monday	1	1	node08	2020	01	01	00	00	00	Monday	1	1
node9	2020	01	01	00	00	00	Monday	1	1	node09	2020	01	01	00	00	00	Monday	1	1
node10	2020	01	01	00	00	00	Monday	1	1	node10	2020	01	01	00	00	00	Monday	1	1
node11	2020	01	01	00	00	00	Monday	1	1	node11	2020	01	01	00	00	00	Monday	1	1
node12	2020	01	01	00	00	00	Monday	1	1	node12	2020	01	01	00	00	00	Monday	1	1
node13	2020	01	01	00	00	00	Monday	1	1	node13	2020	01	01	00	00	00	Monday	1	1
node14	2020	01	01	00	00	00	Monday	1	1	node14	2020	01	01	00	00	00	Monday	1	1
node15	2020	01	01	00	00	00	Monday	1	1	node15	2020	01	01	00	00	00	Monday	1	1
node16	2020	01	01	00	00	00	Monday	1	1	node16	2020	01	01	00	00	00	Monday	1	1
node17	2020	01	01	00	00	00	Monday	1	1	node17	2020	01	01	00	00	00	Monday	1	1
node18	2020	01	01	00	00	00	Monday	1	1	node18	2020	01	01	00	00	00	Monday	1	1
node19	2020	01	01	00	00	00	Monday	1	1	node19	2020	01	01	00	00	00	Monday	1	1
node20	2020	01	01	00	00	00	Monday	1	1	node20	2020	01	01	00	00	00	Monday	1	1
node21	2020	01	01	00	00	00	Monday	1	1	node21	2020	01	01	00	00	00	Monday	1	1
node22	2020	01	01	00	00	00	Monday	1	1	node22	2020	01	01	00	00	00	Monday	1	1
node23	2020	01	01	00	00	00	Monday	1	1	node23	2020	01	01	00	00	00	Monday	1	1
node24	2020	01	01	00	00	00	Monday	1	1	node24	2020	01	01	00	00	00	Monday	1	1
node25	2020	01	01	00	00	00	Monday	1	1	node25	2020	01	01	00	00	00	Monday	1	1
node26	2020	01	01	00	00	00	Monday	1	1	node26	2020	01	01	00	00	00	Monday	1	1
node27	2020	01	01	00	00	00	Monday	1	1	node27	2020	01	01	00	00	00	Monday	1	1
node28	2020	01	01	00	00	00	Monday	1	1	node28	2020	01	01	00	00	00	Monday	1	1
node29	2020	01	01	00	00	00	Monday	1	1	node29	2020	01	01	00	00	00	Monday	1	1
node30	2020	01	01	00	00	00	Monday	1	1	node30	2020	01	01	00	00	00	Monday	1	1
node31	2020	01	01	00	00	00	Monday	1	1	node31	2020	01	01	00	00	00	Monday	1	1
node32	2020	01	01	00	00	00	Monday	1	1	node32	2020	01	01	00	00	00	Monday	1	1
node33	2020	01	01	00	00	00	Monday	1	1	node33	2020	01	01	00	00	00	Monday	1	1
node34	2020	01	01	00	00	00	Monday	1	1	node34	2020	01	01	00	00	00	Monday	1	1
node35	2020	01	01	00	00	00	Monday	1	1	node35	2020	01	01	00	00	00	Monday	1	1
node36	2020	01	01	00	00	00	Monday	1	1	node36	2020	01	01	00	00	00	Monday	1	1
node37	2020	01	01	00	00	00	Monday	1	1	node37	2020	01	01	00	00	00	Monday	1	1
node38	2020	01	01	00	00	00	Monday	1	1	node38	2020	01	01	00	00	00	Monday	1	1
node39	2020	01	01	00	00	00	Monday	1	1	node39	2020	01	01	00	00	00	Monday	1	1
node40	2020	01	01	00	00	00	Monday	1	1	node40	2020	01	01	00	00	00	Monday	1	1
node41	2020	01	01	00	00	00	Monday	1	1	node41	2020	01	01	00	00	00	Monday	1	1
node42	2020	01	01	00	00	00	Monday	1	1	node42	2020	01	01	00	00	00	Monday	1	1
node43	2020	01	01	00	00	00	Monday	1	1	node43	2020	01	01	00	00	00	Monday	1	1
node44	2020	01	01	00	00	00	Monday	1	1	node44	2020	01	01	00	00	00	Monday	1	1
node45	2020	01	01	00	00	00	Monday	1	1	node45	2020	01	01	00	00	00	Monday	1	1
node46	2020	01	01	00	00	00	Monday	1	1	node46	2020	01	01	00	00	00	Monday	1	1
node47	2020	01	01	00	00	00	Monday	1	1	node47	2020	01	01	00	00	00	Monday	1	1
node48	2020	01	01	00	00	00	Monday	1	1	node48	2020	01	01	00	00	00	Monday	1	1
node49	2020	01	01	00	00	00	Monday	1	1	node49	2020	01	01	00	00	00	Monday	1	1
node50	2020	01	01	00	00	00	Monday	1	1	node50	2020	01	01	00	00	00	Monday	1	1
node51	2020	01	01	00	00	00	Monday	1	1	node51	2020	01	01	00	00	00	Monday	1	1
node52	2020	01	01	00	00	00	Monday	1	1	node52	2020	01	01	00	00	00	Monday	1	1
node53	2020	01	01	00	00	00	Monday	1	1	node53	2020	01	01	00	00	00	Monday	1	1
node54	2020	01	01	00	00	00	Monday	1	1	node54	2020	01	01	00	00	00	Monday	1	1
node55	2020	01	01	00	00	00	Monday	1	1	node55	2020	01	01	00	00	00	Monday	1	1
node56	2020	01	01	00	00	00	Monday	1	1	node56	2020	01	01	00	00	00	Monday	1	1
node57	2020	01	01	00	00	00	Monday	1	1	node57	2020	01	01	00	00	00	Monday	1	1
node58	2020	01	01	00	00	00	Monday	1	1	node58	2020	01	01	00	00	00	Monday	1	1
node59	2020	01	01	00	00	00	Monday	1	1	node59	2020	01	01	00	00	00	Monday	1	1
node60	2020	01	01	00	00	00	Monday	1	1	node60	2020	01	01	00	00	00	Monday	1	1
node61	2020	01	01	00	00	00	Monday	1	1	node61	2020	01	01	00	00	00	Monday	1	1
node62	2020	01	01	00	00	00	Monday	1	1	node62	2020	01	01	00	00	00	Monday	1	1
node63	2020	01	01	00	00	00	Monday	1	1	node63	2020	01	01	00	00	00	Monday	1	1
node64	2020	01	01	00	00	00	Monday	1	1	node64	2020	01	01	00	00	00	Monday	1	1
node65	2020	01	01	00	00	00	Monday	1	1	node65	2020	01	01	00	00	00	Monday	1	1
node66	2020	01	01	00	00	00	Monday	1	1	node66	2020	01	01	00	00	00	Monday	1	1
node67	2020	01	01	00	00	00	Monday	1	1	node67	2020	01	01	00	00	00	Monday	1	1
node68	2020	01	01	00	00	00	Monday	1	1	node68	2020	01	01	00	00	00	Monday	1	1
node69	2020	01	01	00	00	00	Monday	1	1	node69	2020	01	01	00	00	00	Monday	1	1
node70	2020	01	01	00	00	00	Monday	1	1	node70	2020	01	01	00	00	00	Monday	1	1
node71	2020	01	01	00	00	00	Monday	1	1	node71	2020	01	01	00	00	00	Monday	1	1
node72	2020	01	01	00	00	00	Monday	1	1	node72	2020	01	01	00	00	00	Monday	1	1
node73	2020	01	01	00	00	00	Monday	1	1	node73	2020	01	01	00	00	00	Monday	1	1
node74	2020	01	01	00	00	00	Monday	1	1	node74	2020	01	01	00	00	00	Monday	1	1
node75	2020	01	01	00	00	00	Monday	1	1	node75	2020	01	01	00	00	00	Monday	1	1
node76	2020	01	01	00	00	00	Monday	1	1	node76	2020	01	01	00	00	00	Monday	1	1
node77	2020	01	01	00	00	00	Monday	1	1	node77	2020	01	01	00	00	00	Monday	1	1
node78	2020	01	01	00	00	00	Monday	1	1	node78	2020	01	01	00	00	00	Monday	1	1
node79	2020	01	01	00	00	00	Monday	1	1	node79	2020	01	01	00	00	00	Monday	1	1
node80	2020	01	01	00	00	00	Monday	1	1	node80	2020	01	01	00	00	00	Monday	1	1
node81	2020	01	01	00	00	00	Monday	1	1	node81	2020	01	01	00	00	00	Monday	1	1
node82	2020	01	01	00	00	00	Monday	1	1	node82	2020	01	01	00	00	00	Monday	1	1
node83	2020	01	01	00	00	00	Monday	1	1	node83	2020	01	01	00	00	00	Monday	1	1
node84	2020	01	01	00	00	00	Monday	1	1	node84	2020	01	01	00	00	00	Monday	1</	

Output	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20	W21	W22	W23	W24	W25	W26	W27	W28	W29	W30	W31	W32	W33	W34	W35	W36	W37	W38	W39	W40	W41	W42	W43	W44	W45	W46	W47	W48	W49	W50	W51	W52	W53	W54	W55	W56	W57	W58	W59	W60	W61	W62	W63	W64	W65	W66	W67	W68	W69	W70	W71	W72	W73	W74	W75	W76	W77	W78	W79	W80	W81	W82	W83	W84	W85	W86	W87	W88	W89	W90	W91	W92	W93	W94	W95	W96	W97	W98	W99	W100	W101	W102	W103	W104	W105	W106	W107	W108	W109	W110	W111	W112	W113	W114	W115	W116	W117	W118	W119	W120	W121	W122	W123	W124	W125	W126	W127	W128	W129	W130	W131	W132	W133	W134	W135	W136	W137	W138	W139	W140	W141	W142	W143	W144	W145	W146	W147	W148	W149	W150	W151	W152	W153	W154	W155	W156	W157	W158	W159	W160	W161	W162	W163	W164	W165	W166	W167	W168	W169	W170	W171	W172	W173	W174	W175	W176	W177	W178	W179	W180	W181	W182	W183	W184	W185	W186	W187	W188	W189	W190	W191	W192	W193	W194	W195	W196	W197	W198	W199	W200	W201	W202	W203	W204	W205	W206	W207	W208	W209	W210	W211	W212	W213	W214	W215	W216	W217	W218	W219	W220	W221	W222	W223	W224	W225	W226	W227	W228	W229	W230	W231	W232	W233	W234	W235	W236	W237	W238	W239	W240	W241	W242	W243	W244	W245	W246	W247	W248	W249	W250	W251	W252	W253	W254	W255	W256	W257	W258	W259	W260	W261	W262	W263	W264	W265	W266	W267	W268	W269	W270	W271	W272	W273	W274	W275	W276	W277	W278	W279	W280	W281	W282	W283	W284	W285	W286	W287	W288	W289	W290	W291	W292	W293	W294	W295	W296	W297	W298	W299	W300	W301	W302	W303	W304	W305	W306	W307	W308	W309	W310	W311	W312	W313	W314	W315	W316	W317	W318	W319	W320	W321	W322	W323	W324	W325	W326	W327	W328	W329	W330	W331	W332	W333	W334	W335	W336	W337	W338	W339	W340	W341	W342	W343	W344	W345	W346	W347	W348	W349	W350	W351	W352	W353	W354	W355	W356	W357	W358	W359	W360	W361	W362	W363	W364	W365	W366	W367	W368	W369	W370	W371	W372	W373	W374	W375	W376	W377	W378	W379	W380	W381	W382	W383	W384	W385	W386	W387	W388	W389	W390	W391	W392	W393	W394	W395	W396	W397	W398	W399	W400	W401	W402	W403	W404	W405	W406	W407	W408	W409	W410	W411	W412	W413	W414	W415	W416	W417	W418	W419	W420	W421	W422	W423	W424	W425	W426	W427	W428	W429	W430	W431	W432	W433	W434	W435	W436	W437	W438	W439	W440	W441	W442	W443	W444	W445	W446	W447	W448	W449	W450	W451	W452	W453	W454	W455	W456	W457	W458	W459	W460	W461	W462	W463	W464	W465
--------	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

Output Image	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30	S31	S32	S33	S34	S35	S36	S37	S38	S39	S40	S41	S42	S43	S44	S45	S46	S47	S48	S49	S50	S51	S52	S53	S54	S55	S56	S57	S58	S59	S60	S61	S62	S63	S64	S65	S66	S67	S68	S69	S70	S71	S72	S73	S74	S75	S76	S77	S78	S79	S80	S81	S82	S83	S84	S85	S86	S87	S88	S89	S90	S91	S92	S93	S94	S95	S96	S97	S98	S99	S100	S101	S102	S103	S104	S105	S106	S107	S108	S109	S110	S111	S112	S113	S114	S115	S116	S117	S118	S119	S120	S121	S122	S123	S124	S125	S126	S127	S128	S129	S130	S131	S132	S133	S134	S135	S136	S137	S138	S139	S140	S141	S142	S143	S144	S145	S146	S147	S148	S149	S150	S151	S152	S153	S154	S155	S156	S157	S158	S159	S160	S161	S162	S163	S164	S165	S166	S167	S168	S169	S170	S171	S172	S173	S174	S175	S176	S177	S178	S179	S180	S181	S182	S183	S184	S185	S186	S187	S188	S189	S190	S191	S192	S193	S194	S195	S196	S197	S198	S199	S200	S201	S202	S203	S204	S205	S206	S207	S208	S209	S210	S211	S212	S213	S214	S215	S216	S217	S218	S219	S220	S221	S222	S223	S224	S225	S226	S227	S228	S229	S230	S231	S232	S233	S234	S235	S236	S237	S238	S239	S240	S241	S242	S243	S244	S245	S246	S247	S248	S249	S250	S251	S252	S253	S254	S255	S256	S257	S258	S259	S260	S261	S262	S263	S264	S265	S266	S267	S268	S269	S270	S271	S272	S273	S274	S275	S276	S277	S278	S279	S280	S281	S282	S283	S284	S285	S286	S287	S288	S289	S290	S291	S292	S293	S294	S295	S296	S297	S298	S299	S300	S301	S302	S303	S304	S305	S306	S307	S308	S309	S310	S311	S312	S313	S314	S315	S316	S317	S318	S319	S320	S321	S322	S323	S324	S325	S326	S327	S328	S329	S330	S331	S332	S333	S334	S335	S336	S337	S338	S339	S340	S341	S342	S343	S344	S345	S346	S347	S348	S349	S350	S351	S352	S353	S354	S355	S356	S357	S358	S359	S360	S361	S362	S363	S364	S365	S366	S367	S368	S369	S370	S371	S372	S373	S374	S375	S376	S377	S378	S379	S380	S381	S382	S383	S384	S385	S386	S387	S388	S389	S390	S391	S392	S393	S394	S395	S396	S397	S398	S399	S400	S401	S402	S403	S404	S405	S406	S407	S408	S409	S410	S411	S412	S413	S414	S415	S416	S417	S418	S419	S420	S421	S422	S423	S424	S425	S426	S427	S428	S429	S430	S431	S432	S433	S434	S435	S436	S437	S438	S439	S440	S441	S442	S443	S444	S445	S446	S447	S448	S449	S450	S451	S452	S453	S454	S455	S456	S457	S458	S459	S460	S461	S462	S463	S464	S465	S466	S467	S468	S469	S470	S471	S472	S473	S474	S475	S476	S477	S478	S479	S480	S481	S482	S483	S484	S485	S486	S487	S488	S489	S490	S491	S492	S493	S494	S495	S496	S497	S498	S499	S500	S501	S502	S503	S504	S505	S506	S507	S508	S509	S510	S511	S512	S513	S514	S515	S516	S517	S518	S519	S520	S521	S522	S523
--------------	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

ASI-1+2 Discrete + Analog 10-31 + Safety

Discrete Input	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	1486	1487	1488</
----------------	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	--------

[illegible]