

Installing Multiple IF8u Modules on a ControlLogix System

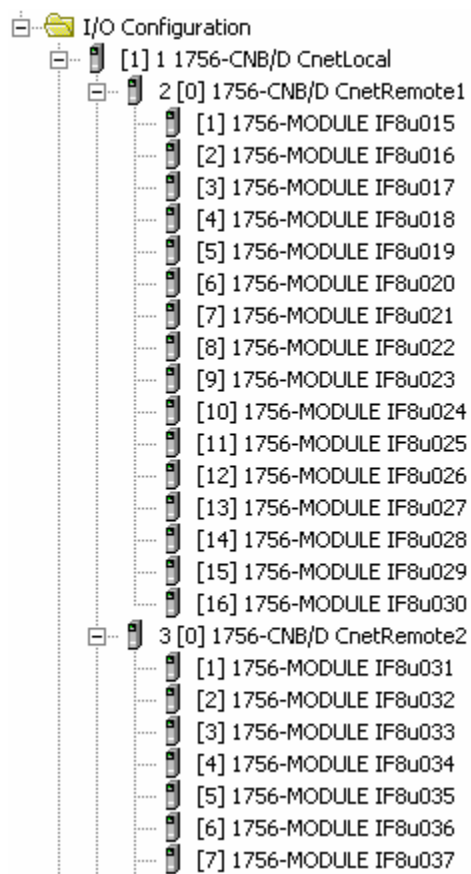
Introduction:

The following procedure details the steps necessary to add multiple IF8u modules to a ControlLogix system. The following procedure was developed to minimize the amount of labor involved in creating ladder needed for configuring and reading data from the modules.

Procedure:

- 1.) Use the existing IF8u sample project found at our website at (www.spectrumcontrols.com) as a starting point. Make use of the ladder sample directly or copy the tags, user defined data types, module profiles, etc., to your project file. **Be sure to copy the user defined data types as they will be needed to create the configuration and input tags for the module.**
- 2.) Add the remaining IF8u modules to the IO configuration tree. Use a sequential naming convention when creating chassis and module names. The naming convention will be critical when duplicating ladder. Be sure to include the necessary network bridges on the remote and local racks. See figure below:

Figure 1



- 3.) Duplicate IF8u configuration and input tags as needed for all universal modules in the system. Use the tag editor in RSLogix 5000 or export the tag database as a CSV file and add the tags using MS Excel. Refer to the figures below.

Figure 2 (RSLogix 5000 Tag Database)

Scope: IF8U_Sample(control) Shgw: Show All Sort: Tag Name

P	Tag Name	Alias For	Base Tag	Type
	+ CnetRemote3:9:I			AB:1756_MODULE_DINT_92Bytes:I:0
	+ CnetRemote3:I			AB:1756_CNB_17SLOT:I:0
	+ CnetRemote3:O			AB:1756_CNB_17SLOT:O:0
<input type="checkbox"/>	+ IF8U_Config0			IF8U_Config_Template
<input type="checkbox"/>	+ IF8U_Config1			IF8U_Config_Template
<input type="checkbox"/>	+ IF8U_Config10			IF8U_Config_Template
<input type="checkbox"/>	+ IF8U_Config11			IF8U_Config_Template
<input type="checkbox"/>	+ IF8U_Config12			IF8U_Config_Template
<input type="checkbox"/>	+ IF8U_Config13			IF8U_Config_Template
<input type="checkbox"/>	+ IF8U_Config14			IF8U_Config_Template
<input type="checkbox"/>	+ IF8U_Config15			IF8U_Config_Template
<input type="checkbox"/>	+ IF8U_Config16			IF8U_Config_Template
<input type="checkbox"/>	+ IF8U_Config17			IF8U_Config_Template
<input type="checkbox"/>	+ IF8U_Config18			IF8U_Config_Template
<input type="checkbox"/>	+ IF8U_Config19			IF8U_Config_Template

Copy Tag, paste
and change the
tag number.

Figure 3A (Excel CSV)

	A	B	C	D	E
140	TAG		Bypass		BOOL
141	TAG		IF8U_Config0		IF8U_Config_Template
142	TAG		IF8U_Config1		IF8U_Config_Template
143	TAG		IF8U_Config10		IF8U_Config_Template
144	TAG		IF8U_Config11		IF8U_Config_Template
145	TAG		IF8U_Config12		IF8U_Config_Template
146	TAG		IF8U_Config13		IF8U_Config_Template
147	TAG		IF8U_Config14		IF8U_Config_Template
148	TAG		IF8U_Config15		IF8U_Config_Template
149	TAG		IF8U_Config16		IF8U_Config_Template
150	TAG		IF8U_Config17		IF8U_Config_Template
151	TAG		IF8U_Config18		IF8U_Config_Template
152	TAG		IF8U_Config19		IF8U_Config_Template
153	TAG		IF8U_Config2		IF8U_Config_Template

Enter tag name
with tag number,
drag and add
series

Figure 3B (Excel CSV)

Drag and add series

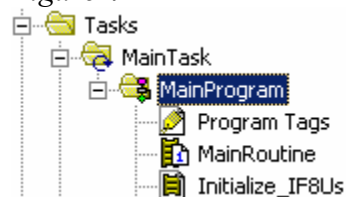
	A	B	C	D	E	F	G
270	TAG		IF8U_Config0		IF8U_Config_Template		
271							
272							
273							
274							
275							
276							
277							
278							
279							
280							
281				IF8U_Config9			
282							
283							
284							
285							
286							
287							
288							
289							
290							
291							

IF8U_Sample60Modules-Tags

Note: If you used Excel to add new tags, remember to import the tags back into your project when you're finished.

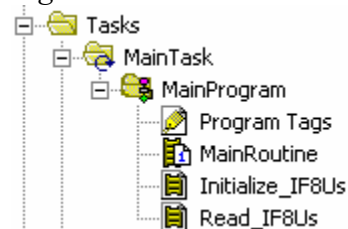
- 4.) Create a routine under the main task called "Initialize_IF8Us".

Figure 4



- 5.) Create a routine under the main task called "Read_IF8Us".

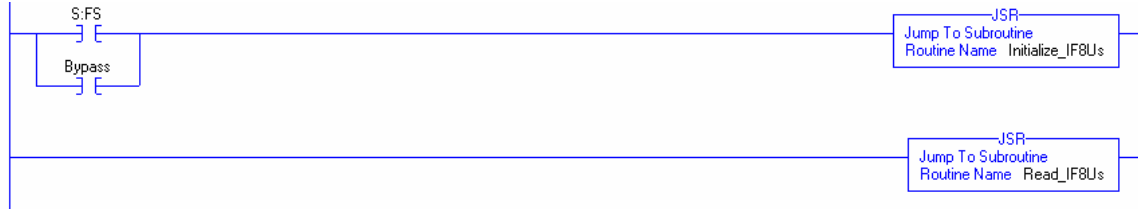
Figure 5



- 6.) Call the two subroutines from the MainRoutine by using the JSR instruction.

Note: You may want to add a first scan condition ahead of the JSR for the Initialize_IF8U subroutine because the configuration only needs to be written once to each module. See figure below:

Figure 6



- 7.) Save your project file as a “structured text file”.
- 8.) Using the provided Excel spread sheet, run the MACROs to create the ladder code for copying the data from the defined tags to the tags generated automatically when the generic profile for the IF8u module was created.

Note: To create the rungs necessary to copy the configuration data from the user defined tags to the module tags, run the ConfigurationLadder macro by pressing CTRL A. To create the rungs necessary to copy the input data from the module tags to the user defined tags, run the InputLadder macro by pressing CTRL B.

Note: Each macro will prompt you to enter data. See figure below.

Figure 7

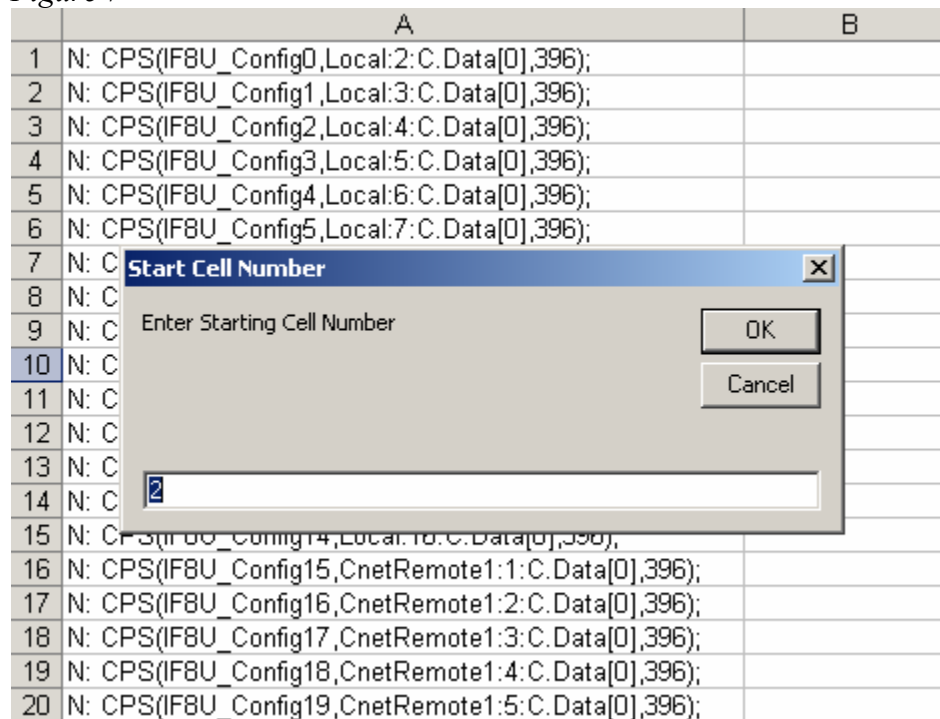
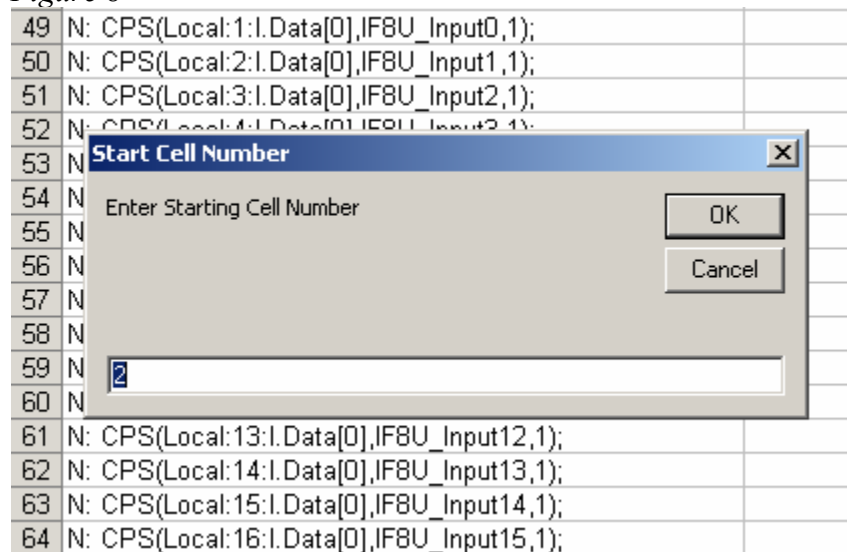


Figure 8

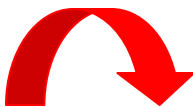


- 9.) Copy and paste the logic generated by the excel spreadsheet into the structured text file created in step 7.

Note: Please be sure to paste the logic into the correct subroutine. See figures below.

Figure 9

A	
22	N: CPS(IF8U_Config21,CnetRemote1:7:C.Data[0],396);
23	N: CPS(IF8U_Config22,CnetRemote1:8:C.Data[0],396);
24	N: CPS(IF8U_Config23,CnetRemote1:9:C.Data[0],396);
25	N: CPS(IF8U_Config24,CnetRemote1:10:C.Data[0],396);
26	N: CPS(IF8U_Config25,CnetRemote1:11:C.Data[0],396);
27	N: CPS(IF8U_Config26,CnetRemote1:12:C.Data[0],396);
28	N: CPS(IF8U_Config27,CnetRemote1:13:C.Data[0],396);
29	N: CPS(IF8U_Config28,CnetRemote1:14:C.Data[0],396);
30	N: CPS(IF8U_Config29,CnetRemote1:15:C.Data[0],396);
31	N: CPS(IF8U_Config30,CnetRemote1:16:C.Data[0],396);
32	N: CPS(IF8U_Config31,CnetRemote2:1:C.Data[0],396);
33	N: CPS(IF8U_Config32,CnetRemote2:2:C.Data[0],396);
34	N: CPS(IF8U_Config33,CnetRemote2:3:C.Data[0],396);
35	N: CPS(IF8U_Config34,CnetRemote2:4:C.Data[0],396);
36	N: CPS(IF8U_Config35,CnetRemote2:5:C.Data[0],396);
37	N: CPS(IF8U_Config36,CnetRemote2:6:C.Data[0],396);
38	N: CPS(IF8U_Config37,CnetRemote2:7:C.Data[0],396);
39	N: CPS(IF8U_Config38,CnetRemote2:8:C.Data[0],396);
40	N: CPS(IF8U_Config39,CnetRemote2:9:C.Data[0],396);
41	N: CPS(IF8U_Config40,CnetRemote2:10:C.Data[0],396);
42	N: CPS(IF8U_Config41,CnetRemote2:11:C.Data[0],396);
43	N: CPS(IF8U_Config42,CnetRemote2:12:C.Data[0],396);
44	N: CPS(IF8U_Config43,CnetRemote2:13:C.Data[0],396);
45	N: CPS(IF8U_Config44,CnetRemote2:14:C.Data[0],396);
46	N: CPS(IF8U_Config45,CnetRemote2:15:C.Data[0],396);
47	N: CPS(IF8U_Config46,CnetRemote2:16:C.Data[0],396);
48	N: CPS(IF8U_Config47,CnetRemote3:1:C.Data[0],396);
49	N: CPS(IF8U_Config48,CnetRemote3:2:C.Data[0],396);
50	N: CPS(IF8U_Config49,CnetRemote3:3:C.Data[0],396);
51	N: CPS(IF8U_Config50,CnetRemote3:4:C.Data[0],396);
52	N: CPS(IF8U_Config51,CnetRemote3:5:C.Data[0],396);
53	N: CPS(IF8U_Config52,CnetRemote3:6:C.Data[0],396);
54	N: CPS(IF8U_Config53,CnetRemote3:7:C.Data[0],396);
55	N: CPS(IF8U_Config54,CnetRemote3:8:C.Data[0],396);
56	N: CPS(IF8U_Config55,CnetRemote3:9:C.Data[0],396);
57	N: CPS(IF8U_Config56,CnetRemote3:10:C.Data[0],396);
58	N: CPS(IF8U_Config57,CnetRemote3:11:C.Data[0],396);
59	N: CPS(IF8U_Config58,CnetRemote3:12:C.Data[0],396);
60	N: CPS(IF8U_Config59,CnetRemote3:13:C.Data[0],396);
61	N: CPS(IF8U_Config60,CnetRemote3:14:C.Data[0],396);
62	N: CPS(IF8U_Config61,CnetRemote3:15:C.Data[0],396);
63	N: CPS(IF8U_Config62,CnetRemote3:16:C.Data[0],396);



```

ROUTINE Initialize_IF8Us
N: CPS(IF8U_Config0,Local:2:C.Data[0],396);
N: CPS(IF8U_Config1,Local:3:C.Data[0],396);
N: CPS(IF8U_Config2,Local:4:C.Data[0],396);
N: CPS(IF8U_Config3,Local:5:C.Data[0],396);
N: CPS(IF8U_Config4,Local:6:C.Data[0],396);
N: CPS(IF8U_Config5,Local:7:C.Data[0],396);
N: CPS(IF8U_Config6,Local:8:C.Data[0],396);
N: CPS(IF8U_Config7,Local:9:C.Data[0],396);
N: CPS(IF8U_Config8,Local:10:C.Data[0],396);
N: CPS(IF8U_Config9,Local:11:C.Data[0],396);
N: CPS(IF8U_Config10,Local:12:C.Data[0],396);
N: CPS(IF8U_Config11,Local:13:C.Data[0],396);
N: CPS(IF8U_Config12,Local:14:C.Data[0],396);
N: CPS(IF8U_Config13,Local:15:C.Data[0],396);
N: CPS(IF8U_Config14,Local:16:C.Data[0],396);
N: CPS(IF8U_Config15,CnetRemote1:1:C.Data[0],396);
N: CPS(IF8U_Config16,CnetRemote1:2:C.Data[0],396);
N: CPS(IF8U_Config17,CnetRemote1:3:C.Data[0],396);
N: CPS(IF8U_Config18,CnetRemote1:4:C.Data[0],396);
N: CPS(IF8U_Config19,CnetRemote1:5:C.Data[0],396);
N: CPS(IF8U_Config20,CnetRemote1:6:C.Data[0],396);
N: CPS(IF8U_Config21,CnetRemote1:7:C.Data[0],396);
N: CPS(IF8U_Config22,CnetRemote1:8:C.Data[0],396);
N: CPS(IF8U_Config23,CnetRemote1:9:C.Data[0],396);
N: CPS(IF8U_Config24,CnetRemote1:10:C.Data[0],396);
N: CPS(IF8U_Config25,CnetRemote1:11:C.Data[0],396);
N: CPS(IF8U_Config26,CnetRemote1:12:C.Data[0],396);
N: CPS(IF8U_Config27,CnetRemote1:13:C.Data[0],396);
N: CPS(IF8U_Config28,CnetRemote1:14:C.Data[0],396);
N: CPS(IF8U_Config29,CnetRemote1:15:C.Data[0],396);
N: CPS(IF8U_Config30,CnetRemote1:16:C.Data[0],396);
N: CPS(IF8U_Config31,CnetRemote2:1:C.Data[0],396);
N: CPS(IF8U_Config32,CnetRemote2:2:C.Data[0],396);
N: CPS(IF8U_Config33,CnetRemote2:3:C.Data[0],396);
N: CPS(IF8U_Config34,CnetRemote2:4:C.Data[0],396);
N: CPS(IF8U_Config35,CnetRemote2:5:C.Data[0],396);
N: CPS(IF8U_Config36,CnetRemote2:6:C.Data[0],396);
N: CPS(IF8U_Config37,CnetRemote2:7:C.Data[0],396);
N: CPS(IF8U_Config38,CnetRemote2:8:C.Data[0],396);
N: CPS(IF8U_Config39,CnetRemote2:9:C.Data[0],396);
N: CPS(IF8U_Config40,CnetRemote2:10:C.Data[0],396);
N: CPS(IF8U_Config41,CnetRemote2:11:C.Data[0],396);
N: CPS(IF8U_Config42,CnetRemote2:12:C.Data[0],396);
N: CPS(IF8U_Config43,CnetRemote2:13:C.Data[0],396);
N: CPS(IF8U_Config44,CnetRemote2:14:C.Data[0],396);
N: CPS(IF8U_Config45,CnetRemote2:15:C.Data[0],396);
N: CPS(IF8U_Config46,CnetRemote2:16:C.Data[0],396);
N: CPS(IF8U_Config47,CnetRemote3:1:C.Data[0],396);
N: CPS(IF8U_Config48,CnetRemote3:2:C.Data[0],396);
N: CPS(IF8U_Config49,CnetRemote3:3:C.Data[0],396);
N: CPS(IF8U_Config50,CnetRemote3:4:C.Data[0],396);
N: CPS(IF8U_Config51,CnetRemote3:5:C.Data[0],396);
N: CPS(IF8U_Config52,CnetRemote3:6:C.Data[0],396);
N: CPS(IF8U_Config53,CnetRemote3:7:C.Data[0],396);
N: CPS(IF8U_Config54,CnetRemote3:8:C.Data[0],396);
N: CPS(IF8U_Config55,CnetRemote3:9:C.Data[0],396);

```

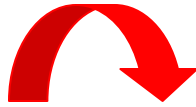


Figure 10

```

65 N: CPS(Local:2:I.Data[0],IF8U_Input0,1);
66 N: CPS(Local:3:I.Data[0],IF8U_Input1,1);
67 N: CPS(Local:4:I.Data[0],IF8U_Input2,1);
68 N: CPS(Local:5:I.Data[0],IF8U_Input3,1);
69 N: CPS(Local:6:I.Data[0],IF8U_Input4,1);
70 N: CPS(Local:7:I.Data[0],IF8U_Input5,1);
71 N: CPS(Local:8:I.Data[0],IF8U_Input6,1);
72 N: CPS(Local:9:I.Data[0],IF8U_Input7,1);
73 N: CPS(Local:10:I.Data[0],IF8U_Input8,1);
74 N: CPS(Local:11:I.Data[0],IF8U_Input9,1);
75 N: CPS(Local:12:I.Data[0],IF8U_Input10,1);
76 N: CPS(Local:13:I.Data[0],IF8U_Input11,1);
77 N: CPS(Local:14:I.Data[0],IF8U_Input12,1);
78 N: CPS(Local:15:I.Data[0],IF8U_Input13,1);
79 N: CPS(Local:16:I.Data[0],IF8U_Input14,1);
80 N: CPS(CnetRemote1:1:I.Data[0],IF8U_Input15,1);
81 N: CPS(CnetRemote1:2:I.Data[0],IF8U_Input16,1);
82 N: CPS(CnetRemote1:3:I.Data[0],IF8U_Input17,1);
83 N: CPS(CnetRemote1:4:I.Data[0],IF8U_Input18,1);
84 N: CPS(CnetRemote1:5:I.Data[0],IF8U_Input19,1);
85 N: CPS(CnetRemote1:6:I.Data[0],IF8U_Input20,1);
86 N: CPS(CnetRemote1:7:I.Data[0],IF8U_Input21,1);
87 N: CPS(CnetRemote1:8:I.Data[0],IF8U_Input22,1);
88 N: CPS(CnetRemote1:9:I.Data[0],IF8U_Input23,1);
89 N: CPS(CnetRemote1:10:I.Data[0],IF8U_Input24,1);
90 N: CPS(CnetRemote1:11:I.Data[0],IF8U_Input25,1);
91 N: CPS(CnetRemote1:12:I.Data[0],IF8U_Input26,1);
92 N: CPS(CnetRemote1:13:I.Data[0],IF8U_Input27,1);
93 N: CPS(CnetRemote1:14:I.Data[0],IF8U_Input28,1);
94 N: CPS(CnetRemote1:15:I.Data[0],IF8U_Input29,1);
95 N: CPS(CnetRemote1:16:I.Data[0],IF8U_Input30,1);
96 N: CPS(CnetRemote2:1:I.Data[0],IF8U_Input31,1);
97 N: CPS(CnetRemote2:2:I.Data[0],IF8U_Input32,1);
98 N: CPS(CnetRemote2:3:I.Data[0],IF8U_Input33,1);
99 N: CPS(CnetRemote2:4:I.Data[0],IF8U_Input34,1);
100 N: CPS(CnetRemote2:5:I.Data[0],IF8U_Input35,1);
101 N: CPS(CnetRemote2:6:I.Data[0],IF8U_Input36,1);
102 N: CPS(CnetRemote2:7:I.Data[0],IF8U_Input37,1);
103 N: CPS(CnetRemote2:8:I.Data[0],IF8U_Input38,1);
104 N: CPS(CnetRemote2:9:I.Data[0],IF8U_Input39,1);
105 N: CPS(CnetRemote2:10:I.Data[0],IF8U_Input40,1);
106 N: CPS(CnetRemote2:11:I.Data[0],IF8U_Input41,1);
107 N: CPS(CnetRemote2:12:I.Data[0],IF8U_Input42,1);
108 N: CPS(CnetRemote2:13:I.Data[0],IF8U_Input43,1);
  
```

```

ROUTINE Read_IF8Us
N: CPS(Local:2:I.Data[0],IF8U_Input0,1);
N: CPS(Local:3:I.Data[0],IF8U_Input1,1);
N: CPS(Local:4:I.Data[0],IF8U_Input2,1);
N: CPS(Local:5:I.Data[0],IF8U_Input3,1);
N: CPS(Local:6:I.Data[0],IF8U_Input4,1);
N: CPS(Local:7:I.Data[0],IF8U_Input5,1);
N: CPS(Local:8:I.Data[0],IF8U_Input6,1);
N: CPS(Local:9:I.Data[0],IF8U_Input7,1);
N: CPS(Local:10:I.Data[0],IF8U_Input8,1);
N: CPS(Local:11:I.Data[0],IF8U_Input9,1);
N: CPS(Local:12:I.Data[0],IF8U_Input10,1);
N: CPS(Local:13:I.Data[0],IF8U_Input11,1);
N: CPS(Local:14:I.Data[0],IF8U_Input12,1);
N: CPS(Local:15:I.Data[0],IF8U_Input13,1);
N: CPS(Local:16:I.Data[0],IF8U_Input14,1);
N: CPS(CnetRemote1:1:I.Data[0],IF8U_Input15,1);
N: CPS(CnetRemote1:2:I.Data[0],IF8U_Input16,1);
N: CPS(CnetRemote1:3:I.Data[0],IF8U_Input17,1);
N: CPS(CnetRemote1:4:I.Data[0],IF8U_Input18,1);
N: CPS(CnetRemote1:5:I.Data[0],IF8U_Input19,1);
N: CPS(CnetRemote1:6:I.Data[0],IF8U_Input20,1);
N: CPS(CnetRemote1:7:I.Data[0],IF8U_Input21,1);
N: CPS(CnetRemote1:8:I.Data[0],IF8U_Input22,1);
N: CPS(CnetRemote1:9:I.Data[0],IF8U_Input23,1);
N: CPS(CnetRemote1:10:I.Data[0],IF8U_Input24,1);
N: CPS(CnetRemote1:11:I.Data[0],IF8U_Input25,1);
N: CPS(CnetRemote1:12:I.Data[0],IF8U_Input26,1);
N: CPS(CnetRemote1:13:I.Data[0],IF8U_Input27,1);
N: CPS(CnetRemote1:14:I.Data[0],IF8U_Input28,1);
N: CPS(CnetRemote1:15:I.Data[0],IF8U_Input29,1);
N: CPS(CnetRemote1:16:I.Data[0],IF8U_Input30,1);
N: CPS(CnetRemote2:1:I.Data[0],IF8U_Input31,1);
N: CPS(CnetRemote2:2:I.Data[0],IF8U_Input32,1);
N: CPS(CnetRemote2:3:I.Data[0],IF8U_Input33,1);
N: CPS(CnetRemote2:4:I.Data[0],IF8U_Input34,1);
N: CPS(CnetRemote2:5:I.Data[0],IF8U_Input35,1);
N: CPS(CnetRemote2:6:I.Data[0],IF8U_Input36,1);
N: CPS(CnetRemote2:7:I.Data[0],IF8U_Input37,1);
N: CPS(CnetRemote2:8:I.Data[0],IF8U_Input38,1);
N: CPS(CnetRemote2:9:I.Data[0],IF8U_Input39,1);
N: CPS(CnetRemote2:10:I.Data[0],IF8U_Input40,1);
N: CPS(CnetRemote2:11:I.Data[0],IF8U_Input41,1);
N: CPS(CnetRemote2:12:I.Data[0],IF8U_Input42,1);
N: CPS(CnetRemote2:13:I.Data[0],IF8U_Input43,1);
N: CPS(CnetRemote2:14:I.Data[0],IF8U_Input44,1);
N: CPS(CnetRemote2:15:I.Data[0],IF8U_Input45,1);
N: CPS(CnetRemote2:16:I.Data[0],IF8U_Input46,1);
N: CPS(CnetRemote3:1:I.Data[0],IF8U_Input47,1);
N: CPS(CnetRemote3:2:I.Data[0],IF8U_Input48,1);
N: CPS(CnetRemote3:3:I.Data[0],IF8U_Input49,1);
N: CPS(CnetRemote3:4:I.Data[0],IF8U_Input50,1);
N: CPS(CnetRemote3:5:I.Data[0],IF8U_Input51,1);
N: CPS(CnetRemote3:6:I.Data[0],IF8U_Input52,1);
N: CPS(CnetRemote3:7:I.Data[0],IF8U_Input53,1);
N: CPS(CnetRemote3:8:I.Data[0],IF8U_Input54,1);
N: CPS(CnetRemote3:9:I.Data[0],IF8U_Input55,1);
N: CPS(CnetRemote3:10:I.Data[0],IF8U_Input56,1);
  
```

10.) Import the structured text file back into RSLogix 5000.

5/25/04
Jeff Robel
Applications Engineer
Spectrum Controls, Inc.
(425) 746-9481