

Unity Application Generator

How Can I...

Insert and manage Advantys island in Unity PLC based control system

Issue



- I want to insert a Advantys island in Unity PLC based control system.
- I should be able to assign variables to the IOs from Advantys island.



How to do..

Basic explanation

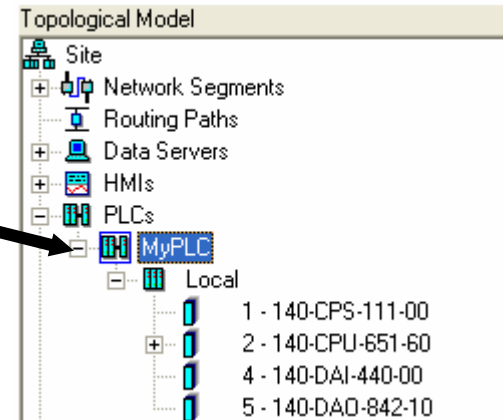
- UAG offers a possibility to include Advantys island over Modbus TCP /Profibus and made it available in architecture so that IOs can be used in control modules.
- Complete Advantys island configuration (developed with Advantys software) can be imported and viewed directly into UAG.
- Goal:
 - To import a Advantys island configuration file developed with Advantys software.
 - Assign addresses to each device.
 - Use IO variables from Advantys modules in control modules.
 - Generate application in Unity with Advantys island connected over IO Scanner.



How to do..

In UAG

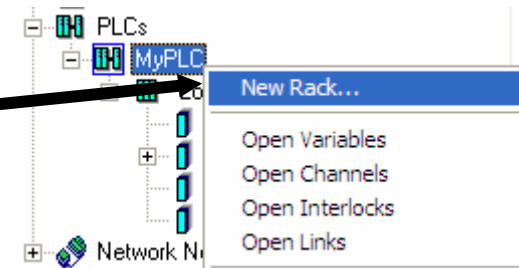
- In UAG, a PLC capable of handling Modbus TCP module should be configured.



How to do..

In UAG

- By right-clicking on the PLC, a small menu with options of inserting new racks will be appeared.
- “NEW RACK” should be selected.





How to do..

In UAG

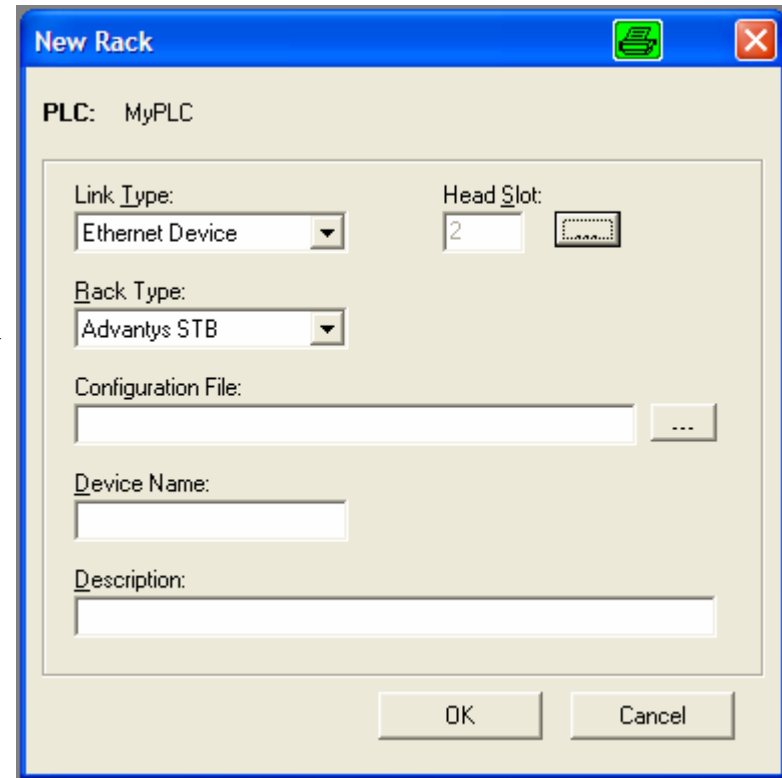
- Window for inserting new rack will be opened:

A screenshot of the 'New Rack' dialog box in a software application. The dialog has a blue title bar with the text 'New Rack' and standard window control buttons. Below the title bar, it says 'PLC: MyPLC'. The main area contains a 'Link Type' dropdown menu with a list of options: 'Generic', 'Ethernet I/O', 'Modbus I/O', and 'Ethernet Device' (which is currently selected and highlighted in blue). To the right of the 'Link Type' dropdown are two input fields: 'Drop Number' (with a small '...' button next to it) and 'Drop Slave' (with a small dropdown arrow next to it). At the bottom of the dialog is a 'Description' text box. At the very bottom are two buttons: 'OK' and 'Cancel'.

How to do..

In UAG

- In “Link Type”, Ethernet device and in “Rack type ” Advantys STB should be selected.

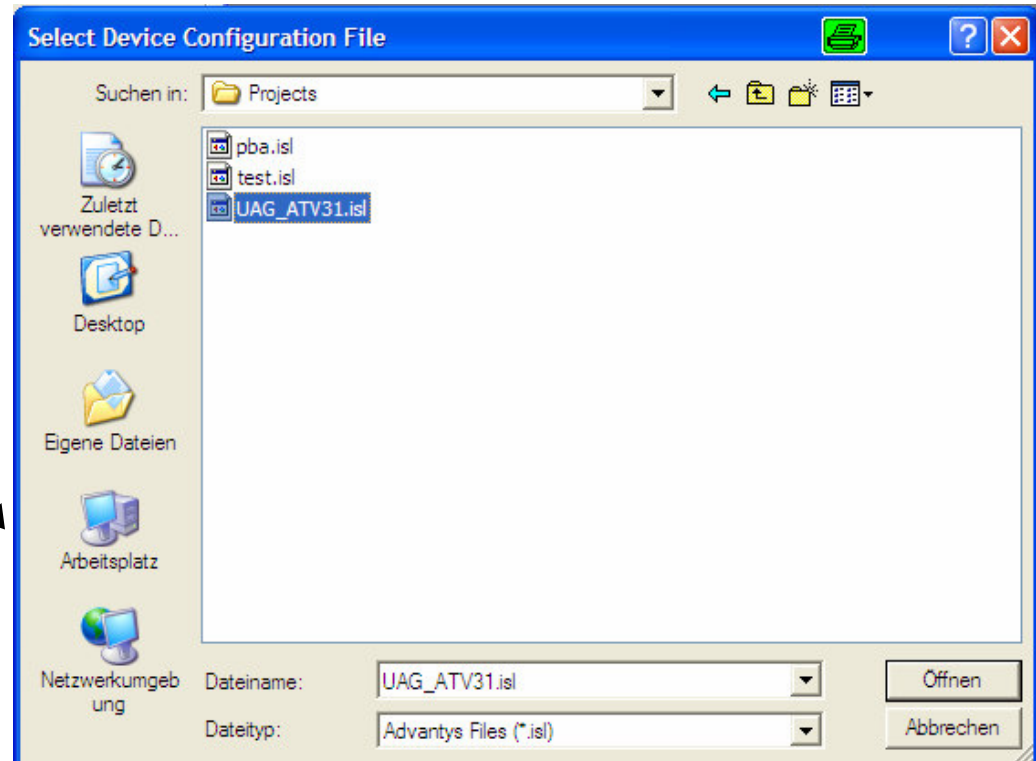
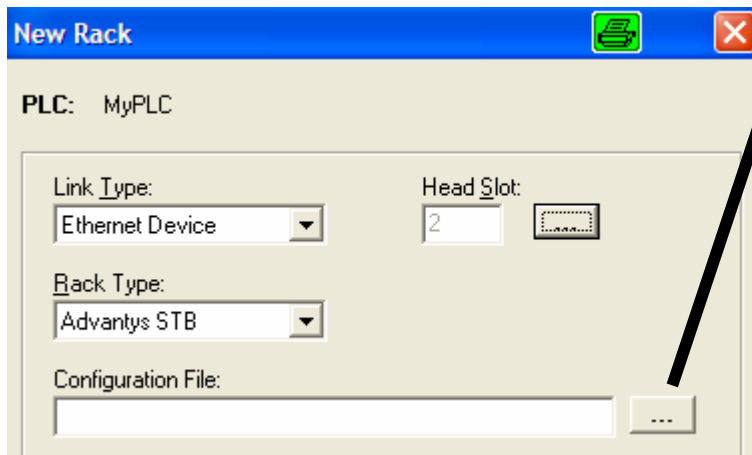




How to do..

In UAG

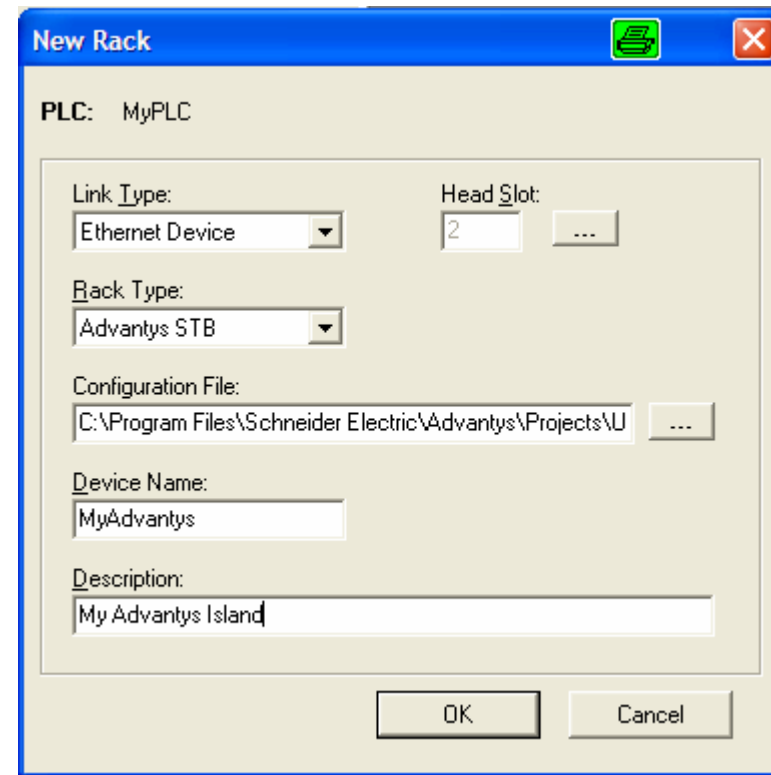
- “Configuration file” refers to *.isl file, a file generated with Advantys Software with configuration.



How to do..

In UAG

- After entering name and description, the window should look like this:

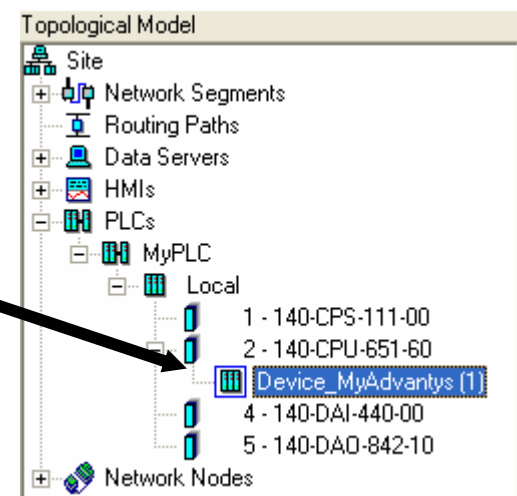




How to do..

In UAG

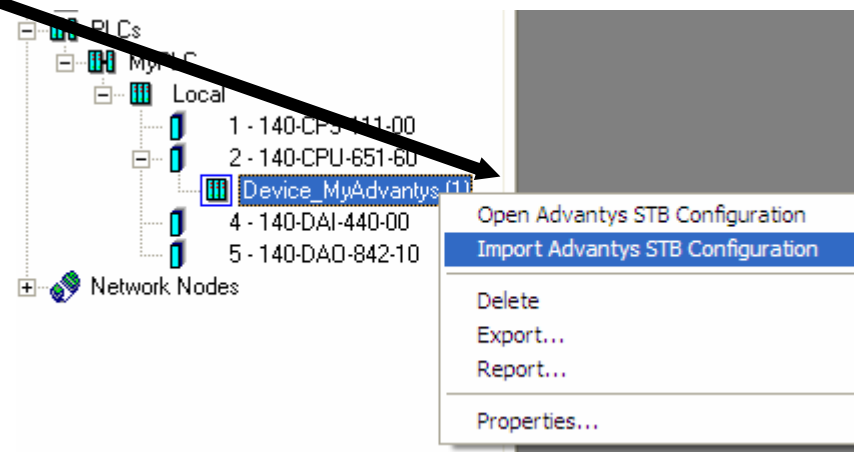
- The Advantys island will appear like this in the topological model under PLC.



How to do..

In UAG

- Advantys configuration can be imported by right-clicking on the Advantys device and selecting “Import”.

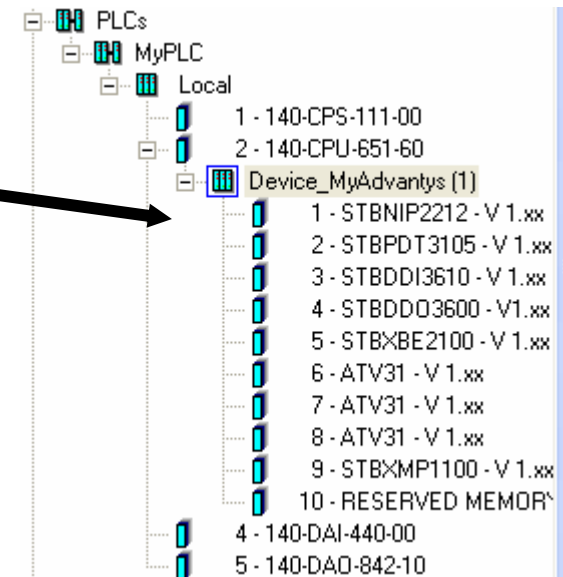


How to do..

In UAG

- The Advantys island will be imported.
- User should ensure that no error message reported..

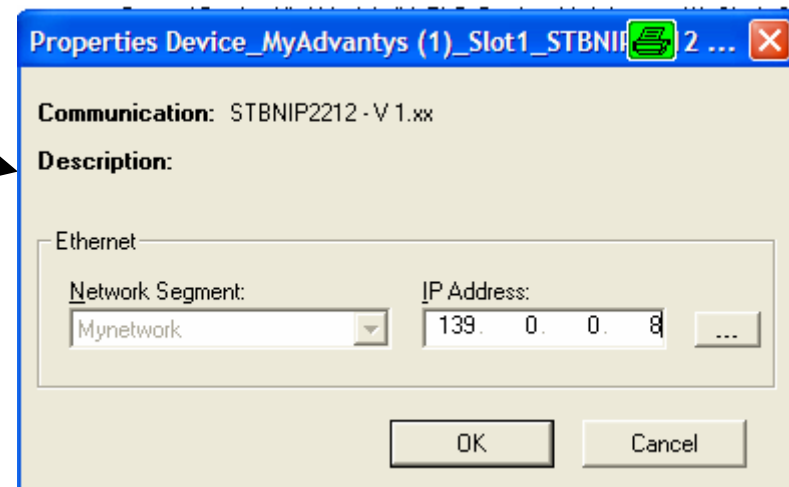
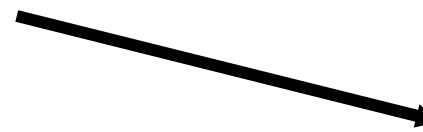
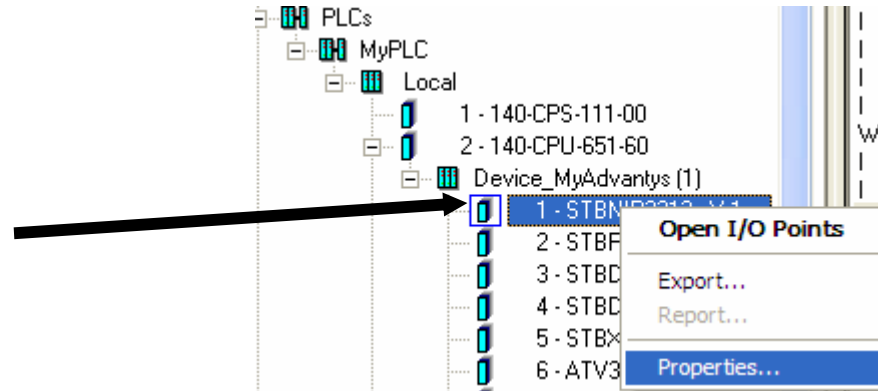
Import Configuration	
Type	Information
	Start: 01/09/2009 12:03:14 +0100
	Rack 'MyAdvantys': 'Type' was changed.
	Rack 'MyAdvantys': HW module 'STBNIP2212 - V 1.xx' (Slot 1) was created.
	Rack 'MyAdvantys': HW module 'STBPDT3105 - V 1.xx' (Slot 2) was created.
	Rack 'MyAdvantys': HW module 'STBDDI3610 - V 1.xx' (Slot 3) was created.
	Rack 'MyAdvantys': HW module 'STBDDO3600 - V1.xx' (Slot 4) was created.
	Rack 'MyAdvantys': HW module 'STBXBE2100 - V 1.xx' (Slot 5) was created.
	Rack 'MyAdvantys': HW module 'ATV31 - V 1.xx' (Slot 6) was created.
	Rack 'MyAdvantys': HW module 'ATV31 - V 1.xx' (Slot 7) was created.
	Rack 'MyAdvantys': HW module 'ATV31 - V 1.xx' (Slot 8) was created.
	Rack 'MyAdvantys': HW module 'STBXMP1100 - V 1.xx' (Slot 9) was created.
	Rack 'MyAdvantys': HW module 'RESERVED MEMORY' (Slot 10) was created.
	Finished: warnings: 0 errors: 0
	End: 01/09/2009 12:03:22 +0100
	Elapsed time: 8 sec



How to do..

In UAG

- IP address should be assigned to the Advantys island by right clicking on the device head module.
- This window will appear:

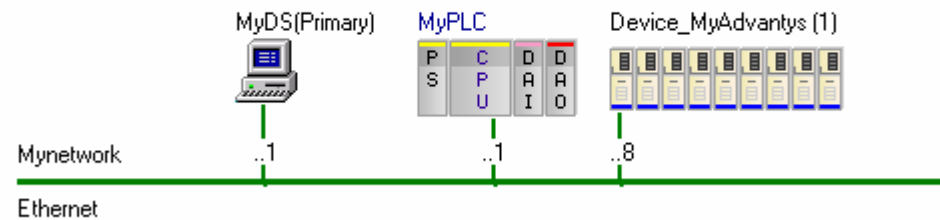




How to do..

In UAG

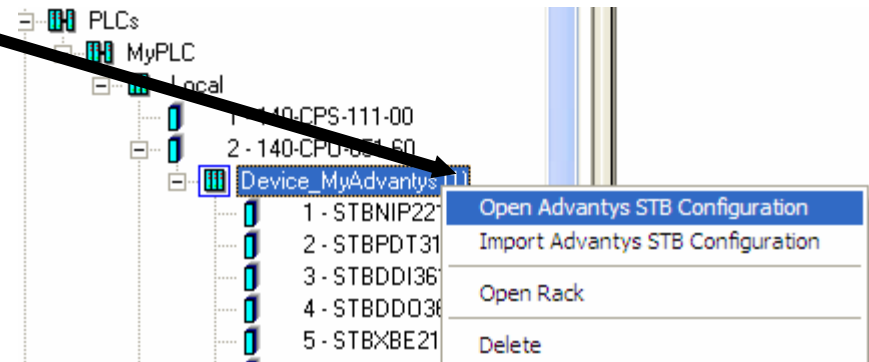
- The new device will appear like this under UAG → VIEW → Topological viewer



How to do..

In UAG

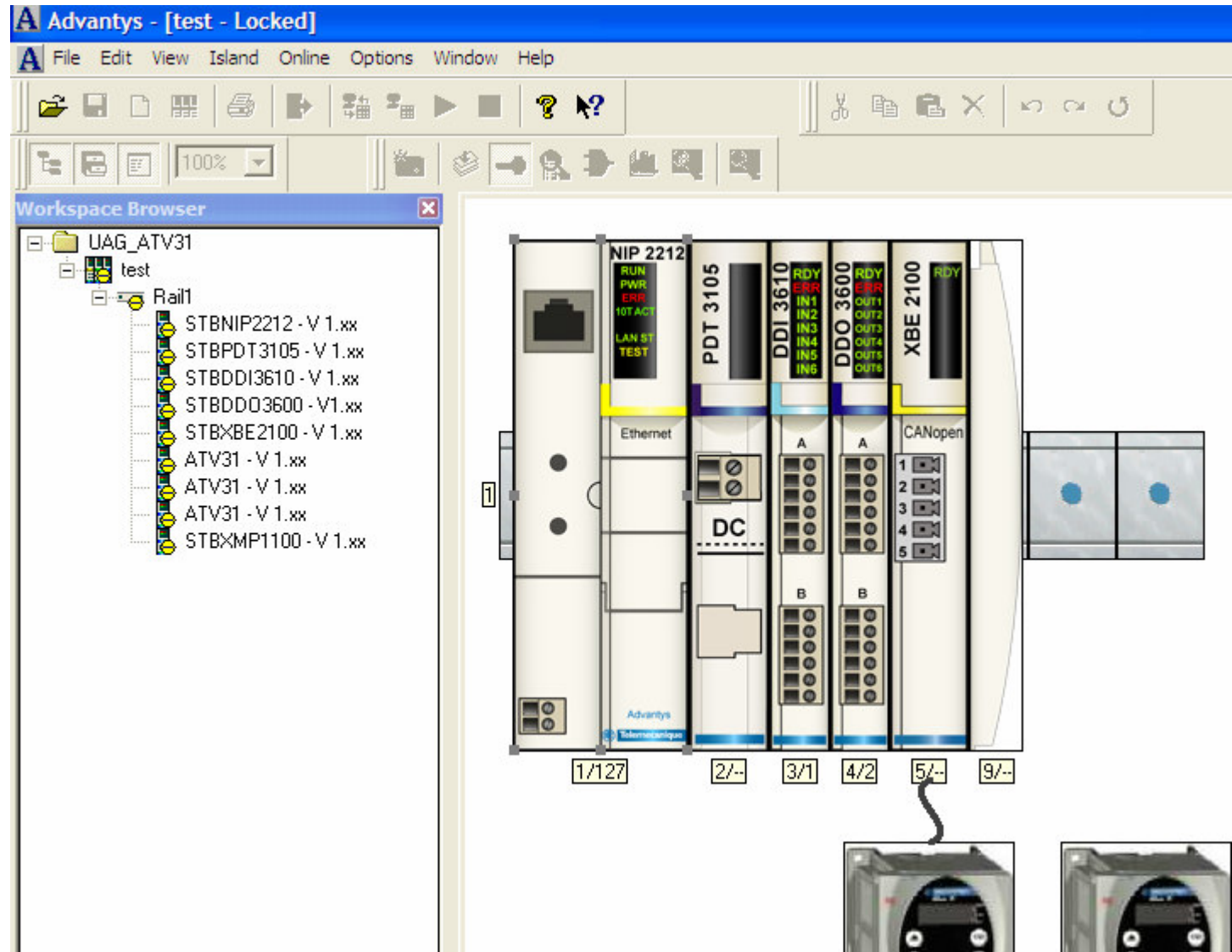
- The Advantys island can be opened by right clicking on the device.



How to do..

In UAG

- Advantys configuration file will be opened:
- The file should be closed after viewing.





How to do..

In UAG

- IOs from the Advantys module can be opened by clicking on the module.
- Variable from any of the Control module should be connected to the Advantys module by drag-n-drop.

Variables: 31 found/listed.

	Name	Full Variable Name	Description	Connection Type
	LStop	MyEqu_MyMotor_LStop	Local Stop Cmd	IO_PLC ✓
▶	FbFwd	MyEqu_MyMotor_FbFwd	FB Forward	IO_PLC ✓
⊕	PAR	MyEqu_MyMotor_PAR	Par Structure	PLC
	Ctrl	MyEqu_MyMotor_Ctrl	Control Word	PLC_HMI

Ready

I/O Points [3 - STBDDI3610 - V 1.xx]

HW Module: 3 - STBDDI3610 - V 1.xx

PLC: MyPLC **Rack:** Device_MyAdvantys (1) (My Advantys Island)

	I/O	I/O Type	Data Type	I/O Description	Variable	Addr
	1		BOOL	Channel 1 [Input Data]	MyEqu_MyMotor_LFwd	
	2		BOOL	Channel 2 [Input Data]	MyEqu_MyMotor_LStop	
▶	3		BOOL	Channel 3 [Input Data]	MyEqu_MyMotor_FbFwd	
	4		BOOL	Channel 4 [Input Data]		
	5		BOOL	Channel 5 [Input Data]		



How to do..

In UAG

- Unity application can be generated by using “Generate PLC” function in UAG.

```
Memory Mapper | Generate PLC |
+-----+-----+
| Type | Information |
+-----+-----+
| | Start: 19.12.2008 16:23:50 +0100 |
| | Checking control modules for link consistency... |
| | Consistency check completed. |
| | Preparing generation for 'D:\UAG\Applications\MyPLC' |
| |   Created Fieldbus configuration Group 'FieldbusConfiguration' |
| |   Created Fieldbus Configuration Section 'FieldbusConfig_1_1' |
| |   Created HW Module 'MyPLC_Local_Slot6_PTQ-PDP-MV1' |
| |   Created Fieldbus Configuration Section 'FieldbusConfig_6_1' |
| |   Created fieldbus configuration logic for hardware module 'MyPLC_170 BDI 354 00 / 01_Slot0_170 BDI 354 0' |
| |   Created Fieldbus Configuration Section 'FieldbusConfig_6_2' |
| |   Created fieldbus configuration logic for hardware module 'MyPLC_ATV71-Profibus-DPV1-Modu_Slot0_Periodi' |
| |   Created fieldbus configuration logic for hardware module 'MyPLC_LUFP7_Slot1_IN/OUT: 2 Byte ( 1 word)' |
| |   Created Fieldbus Configuration Section 'FieldbusConfig_6_3' |
| |   Created fieldbus configuration logic for hardware module 'MyPLC_LUFP7_Slot2_IN/OUT: 4 Byte ( 2 word)' |
| |   Modified configuration logic for hardware module 'MyPLC_170 BDI 354 00 / 01_Slot0_170 BDI 354 00/01 3' |
| |   Modified configuration logic for hardware module 'MyPLC_170 BDI 354 00 / 01_Slot0_170 BDI 354 00/01 3' |
| |   Modified configuration logic for hardware module 'MyPLC_170 BDI 354 00 / 01_Slot0_170 BDI 354 00/01 3' |
| | Closing project 'D:\UAG\Applications\MyPLC'. |
| | Finished: warnings: 0 errors: 0 |
| | End: 19.12.2008 16:24:51 +0100 |
+-----+-----+
| Elapsed time: 60,5 sec |
+-----+-----+
```



How to do..

In Unity

- UAG will generate Unity project with read/write area under IO Scanner

IP Configuration | Messaging | **IO Scanning** | Global Data | SNMP | Address Server | Bandwidth

IO Scanner configuration Device Control Block: (%MD):4 %MD:4

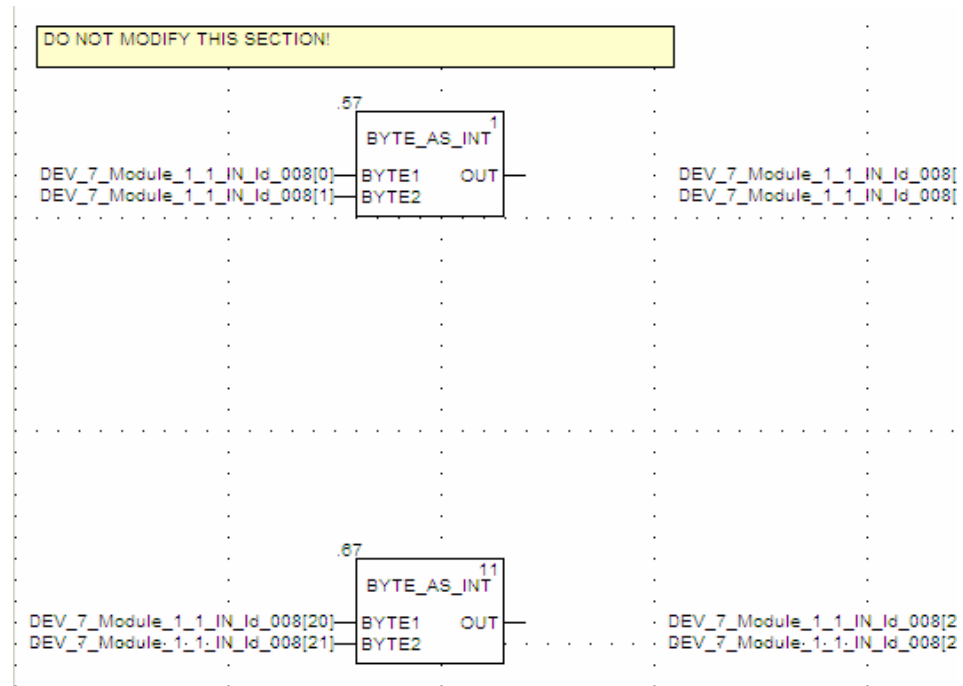
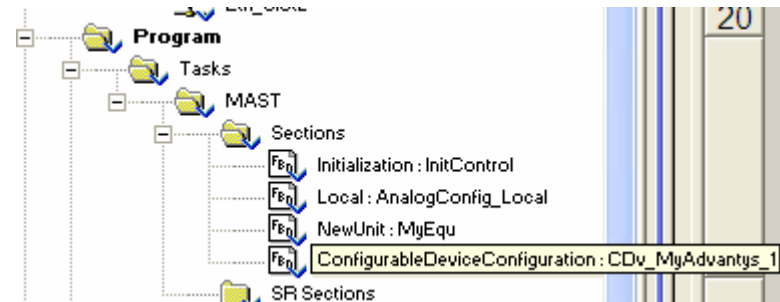
	Slave IP Address	Unit ID	Health Timeout (ms)	Repetitive rate (ms)	RD Master Object	RD Slave Index	RD length	Last value (Input)	WR Master Object
1	139.0.0.8	255	2000	100	%Iw1	5356	35	Hold last	%Mw1
2	139.0.0.8	255	2000	100	%Iw36	5391	100	Hold last	%Mw1
3									
4									
5									
6									

Read/write areas for IO scanner

How to do..

In Unity

- UAG will generate sections for communication and the section will be containing the variables like this





How to do..

Recommendations /Notes

- Advantys island can be connected over Ethernet and Profibus.
- Devices over CANOPEN can be attached to Advantys island and then inserted in UAG. In slide 16, one can see ATV31s are connected to Advantys over CanOpen.

Conclusion



- Advantys island can be connected to Unity PLC based architecture using UAG.

Thanks for your attention!