Advantech AE Technical Share Document

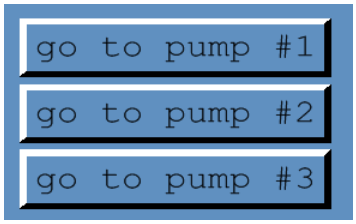
Date	2016 / 2 / 17	**SR#**	1-2374089601
Category	□ FAQ ■ SOP	**Related OS**	Microsoft Windows7
Abstract	Describe how to use both local tag and script to achieve indirect tag function.		
Keyword	WebAccess, Indirect Tag		
Related Product	N/A		

■ **Problem Description:**

Indirect tag is a common function in SCADA software. Instead of inserting physical tags to objects in WebAccess Draw/DrawDAQ, user may assign local tags to the objects. To achieve dynamic changing local tag contents, user has to use script to assign physical tags to local tags.

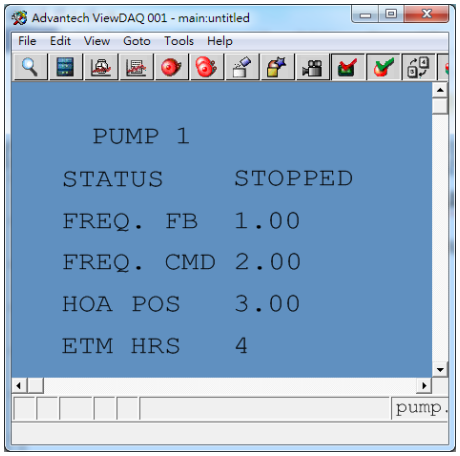
■ **Scenario:**

WebAccess user has three exactly the same pumps; all of them have one digital tag (STATUS) and four analog tags (FREQ_FB, FREQ_CMD, HOA_POS and ETM_HRS). By using indirect tag function, all three pumps are able to display tag values in pump.bgr page separately. The following main.bgr page has three push buttons.

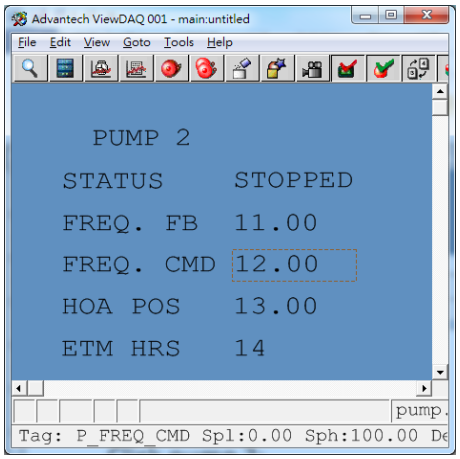


By clicking any of them, WebAccess View/ViewDAQ will go to pump.bgr page and display pump info based on pump number.

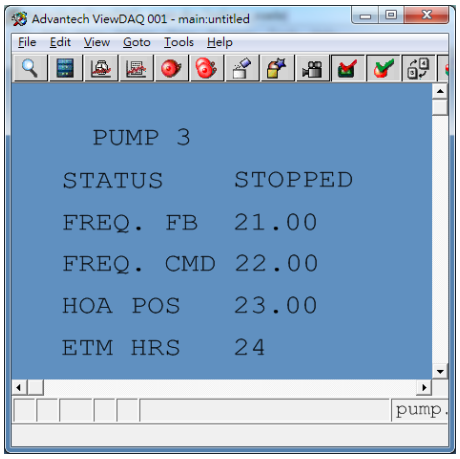
By clicking pump #1 push button in main.bgr, pump.bgr will display Pump 1 tag values:



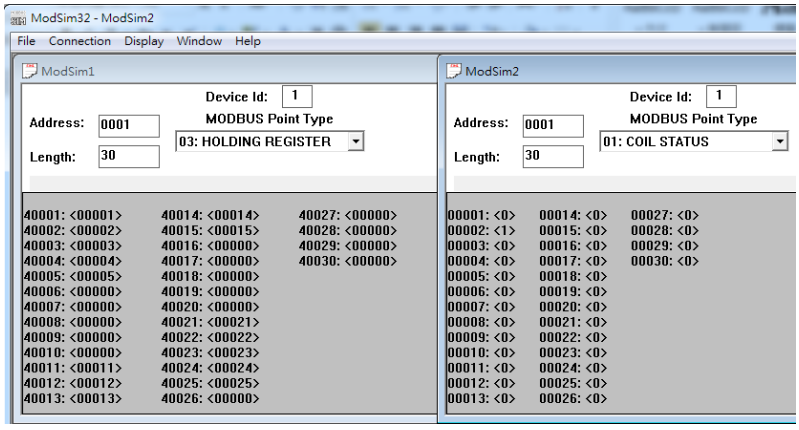
By clicking pump #2 push button in main.bgr, pump.bgr will display Pump 2 tag values:



By clicking pump #3 push button in main.bgr, pump.bgr will display Pump 3 tag values:



For practice, user will use ModSim to simulate these three pumps



Here are tag names with their corresponding Modbus addresses:

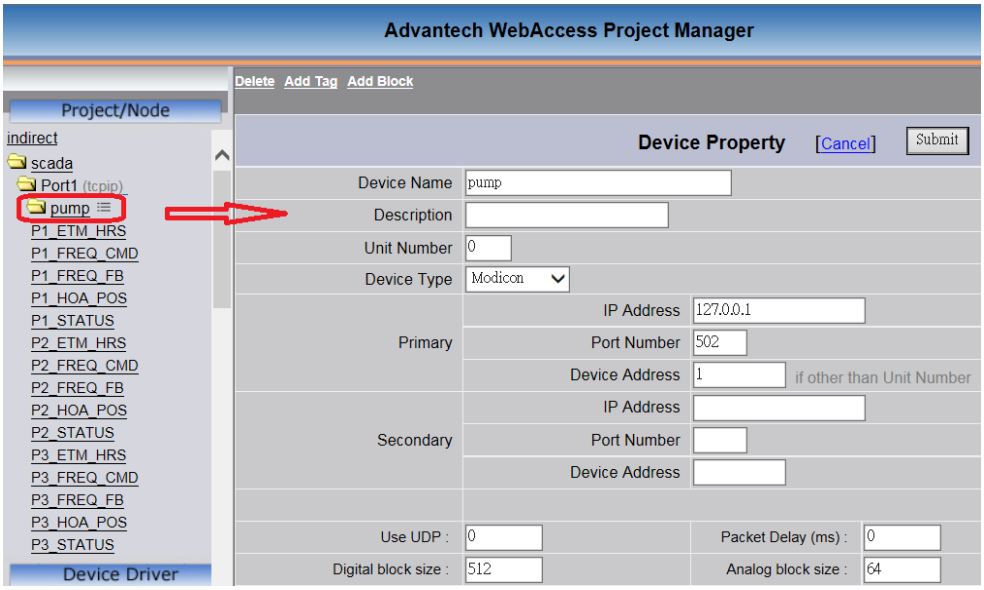
Tag Name	Pump 1	Pump 2	Pump 3
STATUS (DO)	00001	00011	00021
FREQ_FB (AO)	40001	40011	40021
FREQ_CMD (AO)	40002	40012	40022
HOA_POS (AO)	40003	40013	40023
ETM_HRS (AO)	40004	40014	40024

Procedure:

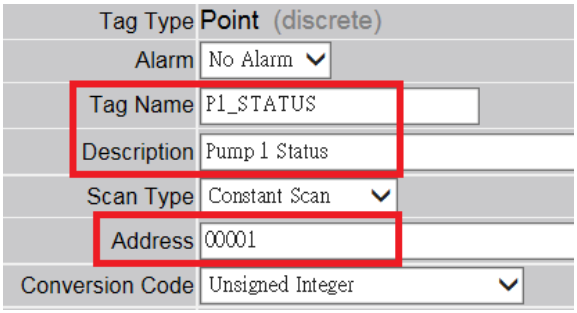
- Create Pump #1, #2 and #3 physical tags in WebAccess Project Manager
- Create local tag, TCLScript in pump.drw page
- Create push buttons in main.drw page.

■ Brief Solution:

1. Let's create all 3 pump physical tags by using Modicon driver.

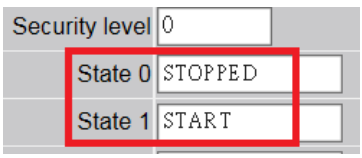


2. Create Pump #1 5 tags:
   - Create a digital tag named P1_STATUS with address 00001
   - Description: Pump 1 Status

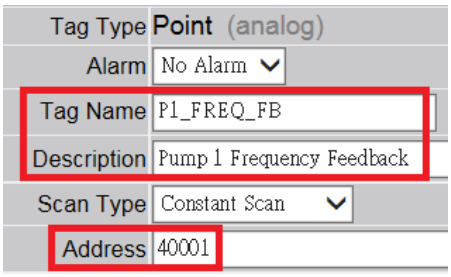


   - When State equals to 0, display "STOPPED"
   - When State equals to 1, display "START"

   Then click "submit" to complete it.

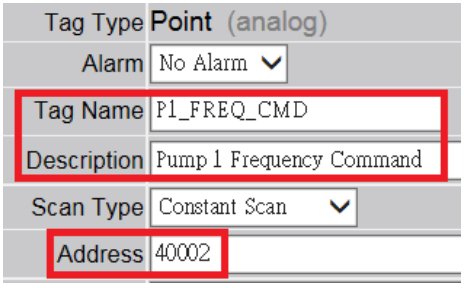


3. Add an analog tag named “P1_FREQ_FB” with address 40001
   Description: Pump 1 Frequency Feedback

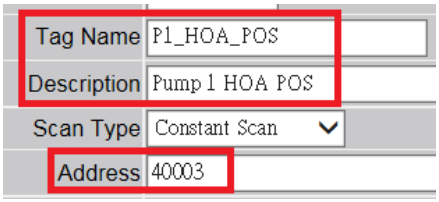


4. Create another 3 analog tags for “P1_FREQ_CMD”, “P1_HOA_POS” and “P1_ETM_HRS”

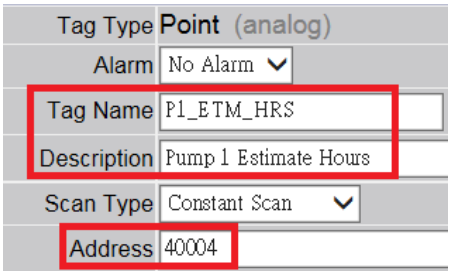
- Tag name: P1_FREQ_CMD
- Address: 40002
- Description: Pump 1 Frequency Command



- Tag name: P1_HOA_POS
- Address: 40003
- Description: Pump 1 HOA POS



- Parameter name: P1_ETM_HRS
- Address: 40004
- Description: Pump 1 Estimate Hours



5. Result of Pump #1 tags

Tagname		Description	Address
P1_ETM_HRS	A	Pump 1 Estimate Hours	40004
P1_FREQ_CMD	A	Pump 1 Frequency Command	40002
P1_FREQ_FB	A	Pump 1 Frequency Feedback	40001
P1_HOA_POS	A	Pump 1 HOA POS	40003
P1_STATUS	D	Pump 1 Status	00001

Tag Name	Pump 1
STATUS (DO)	00001
FREQ_FB (AO)	40001
FREQ_CMD (AO)	40002
HOA_POS (AO)	40003
ETM_HRS (AO)	40004

6. Create Pump #2 5 tags:

P2_ETM_HRS	A	Pump 2 Estimate Hours	40014
P2_FREQ_CMD	A	Pump 2 Frequency Command	40012
P2_FREQ_FB	A	Pump 2 Frequency Feedback	40011
P2_HOA_POS	A	Pump 2 HOA POS	40013
P2_STATUS	D	Pump 2 Status	00011

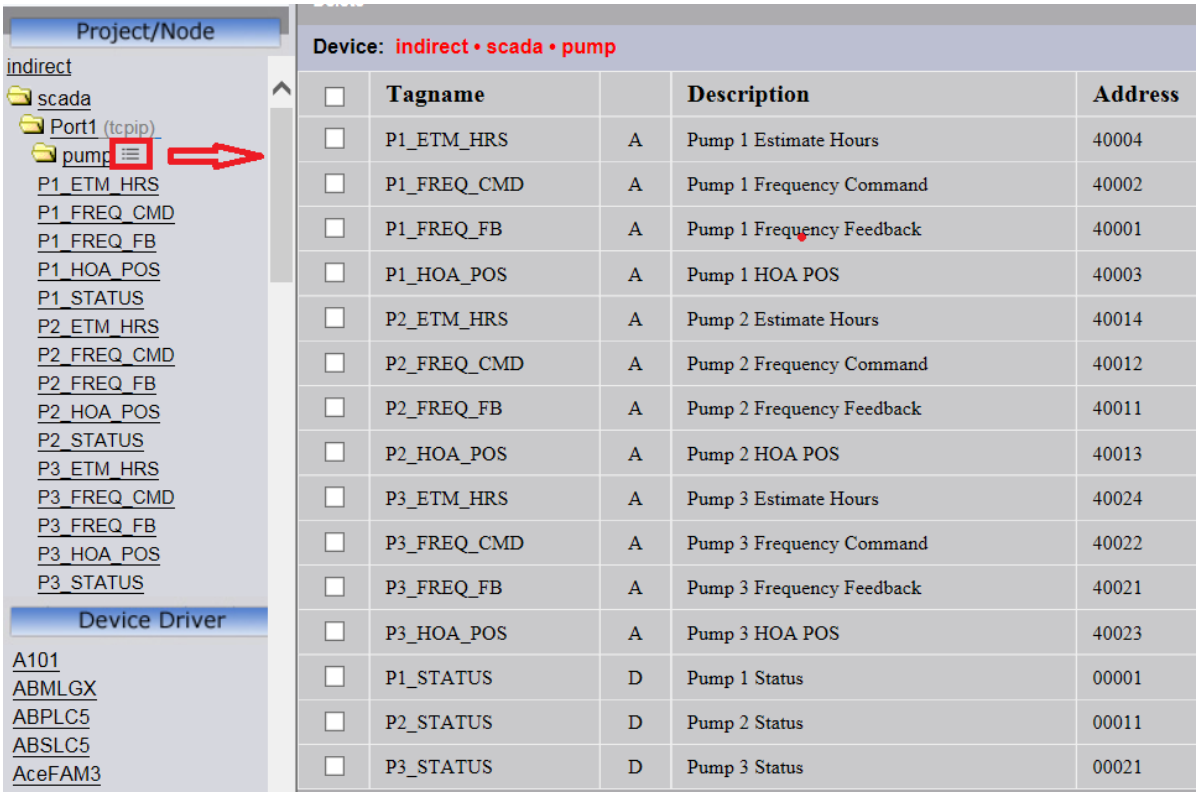
Tag Name	Pump 1	Pump 2
STATUS (DO)	00001	00011
FREQ_FB (AO)	40001	40011
FREQ_CMD (AO)	40002	40012
HOA_POS (AO)	40003	40013
ETM_HRS (AO)	40004	40014

7. Create Pump #3 5 tags:

P3_ETM_HRS	A	Pump 3 Estimate Hours	40024
P3_FREQ_CMD	A	Pump 3 Frequency Command	40022
P3_FREQ_FB	A	Pump 3 Frequency Feedback	40021
P3_HOA_POS	A	Pump 3 HOA POS	40023
P3_STATUS	D	Pump 3 Status	00021

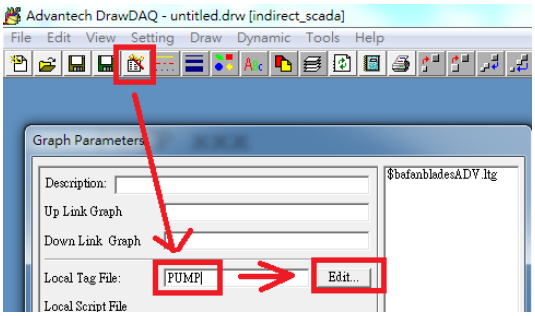
Tag Name	Pump 1	Pump 2	Pump 3
STATUS (DO)	00001	00011	00021
FREQ_FB (AO)	40001	40011	40021
FREQ_CMD (AO)	40002	40012	40022
HOA_POS (AO)	40003	40013	40023
ETM_HRS (AO)	40004	40014	40024

8. There will be total 15 physical tags



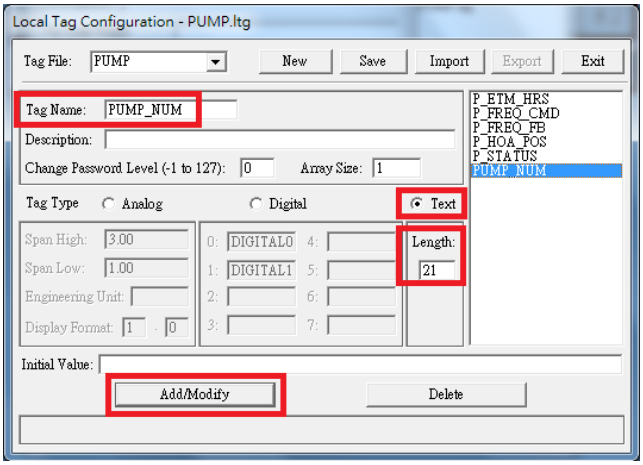
	Tagname		Description	Address
☐	P1_ETM_HRS	A	Pump 1 Estimate Hours	40004
☐	P1_FREQ_CMD	A	Pump 1 Frequency Command	40002
☐	P1_FREQ_FB	A	Pump 1 Frequency Feedback	40001
☐	P1_HOA_POS	A	Pump 1 HOA POS	40003
☐	P2_ETM_HRS	A	Pump 2 Estimate Hours	40014
☐	P2_FREQ_CMD	A	Pump 2 Frequency Command	40012
☐	P2_FREQ_FB	A	Pump 2 Frequency Feedback	40011
☐	P2_HOA_POS	A	Pump 2 HOA POS	40013
☐	P3_ETM_HRS	A	Pump 3 Estimate Hours	40024
☐	P3_FREQ_CMD	A	Pump 3 Frequency Command	40022
☐	P3_FREQ_FB	A	Pump 3 Frequency Feedback	40021
☐	P3_HOA_POS	A	Pump 3 HOA POS	40023
☐	P1_STATUS	D	Pump 1 Status	00001
☐	P2_STATUS	D	Pump 2 Status	00011
☐	P3_STATUS	D	Pump 3 Status	00021

9. Next step will be created a pump.bgr page.
   - Indirect Tags: create a local tag file for 6 local tags
   - Set Graph Parameter -> Local Tag File -> enter “PUMP” -> Edit



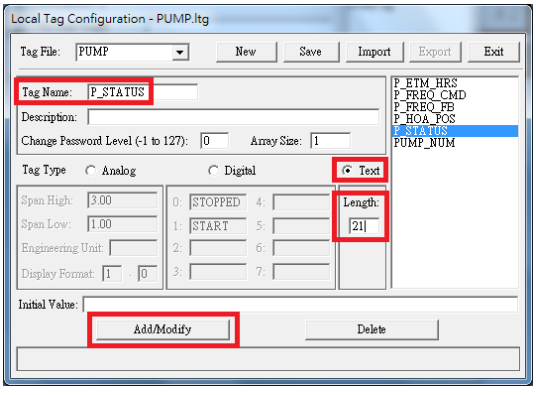
10. Create a text tag “PUMP_NUM” for display pump number in Pump.bgr
    - Tag Name: PUMP_NUM
    - Tag Type: Text
    - Length: 21 (because max length of tag is 21 characters)

    Click “Add/Modify” button to complete it.



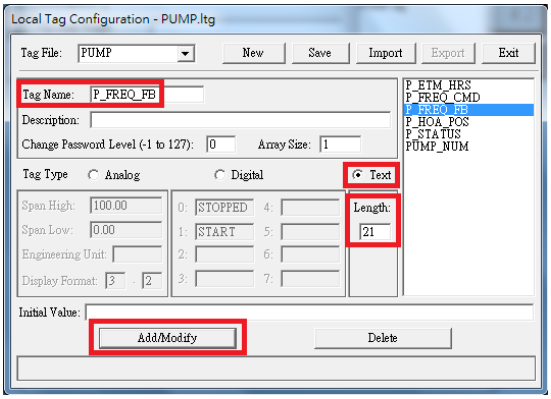
11. Create a text tag named “P_STATUS”
    - Tag Name: P_STATUS
    - Tag Type: Text
    - Length: 21

    Click “Add/Modify” button to complete it



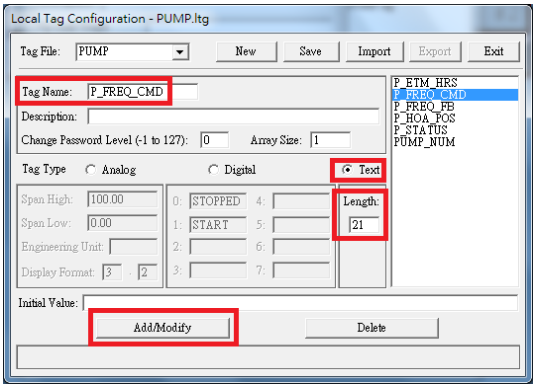
12. Create a text tag named “P_FREQ_FB”
    - Tag Name: P_FREQ_FB
    - Tag Type: Text
    - Length: 21

    Click “Add/Modify” button to complete it



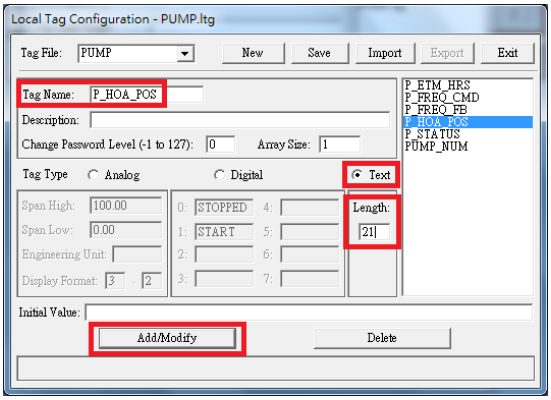
13. Create a text tag named P_FREQ_CMD
    - Tag Name: P_FREQ_CMD
    - Tag Type: Text
    - Length: 21

    Click “Add/Modify” button to complete it



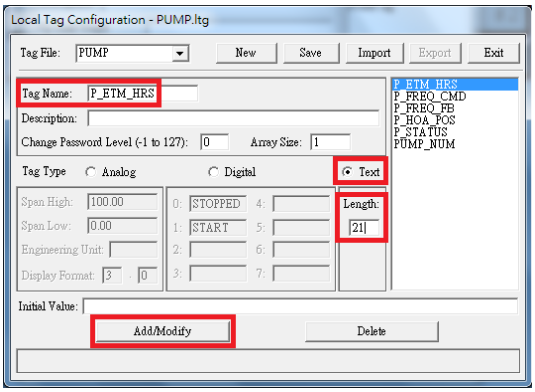
14. Create an analog tag named P_HOA_POS
    - Tag Name: P_HOA_POS
    - Tag Type: Text
    - Length: 21

    Click “Add/Modify” button to complete it

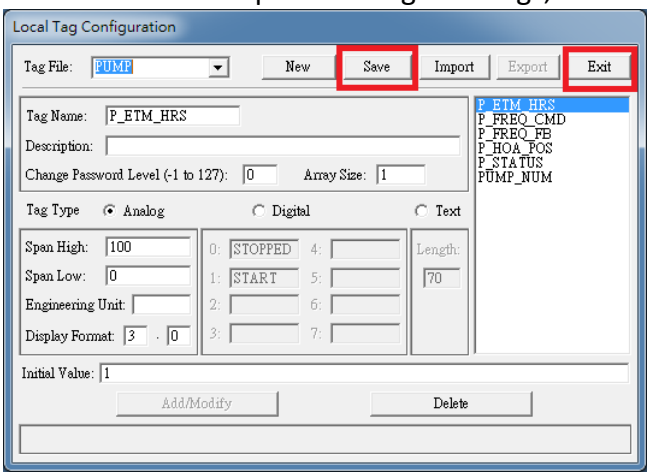


15. Create an analog tag named P_ETM_HRS
    - Tag Name: P_ETM_HRS
    - Tag Type: Text
    - Length: 21

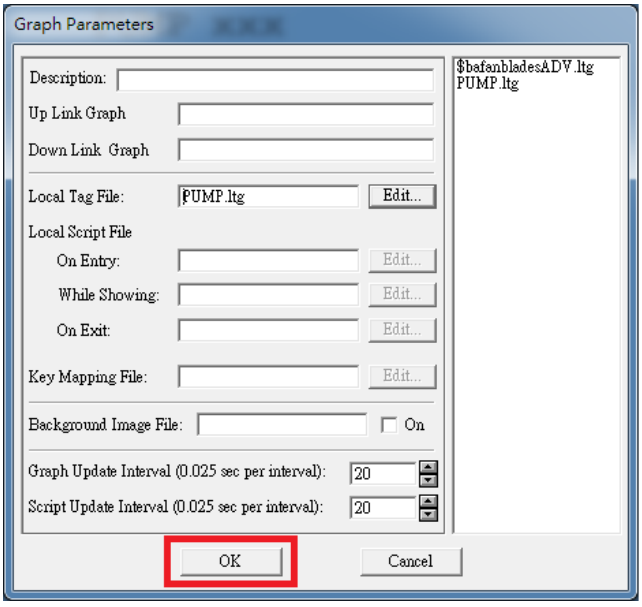
    Click “Add/Modify” button to complete it



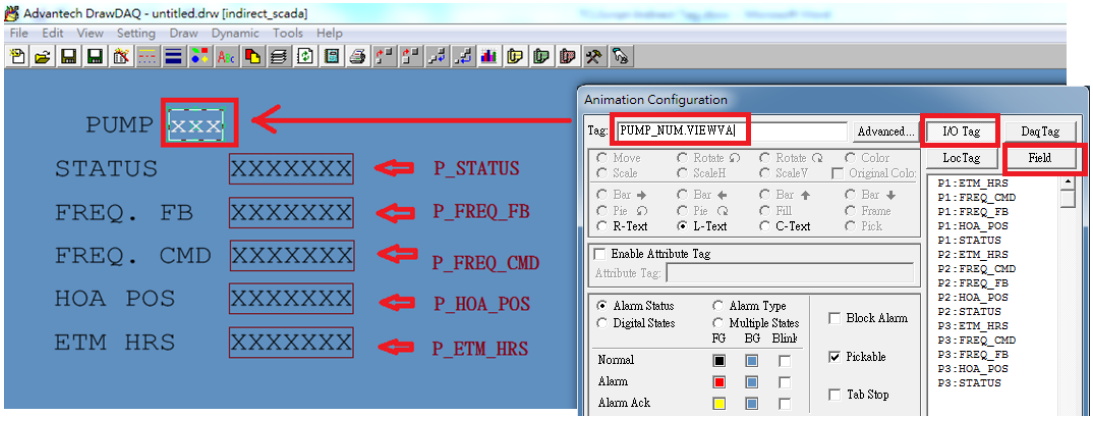
16. Click “Save” to complete adding local tags, then click “Exit”



17. Click “OK” to complete adding local tags



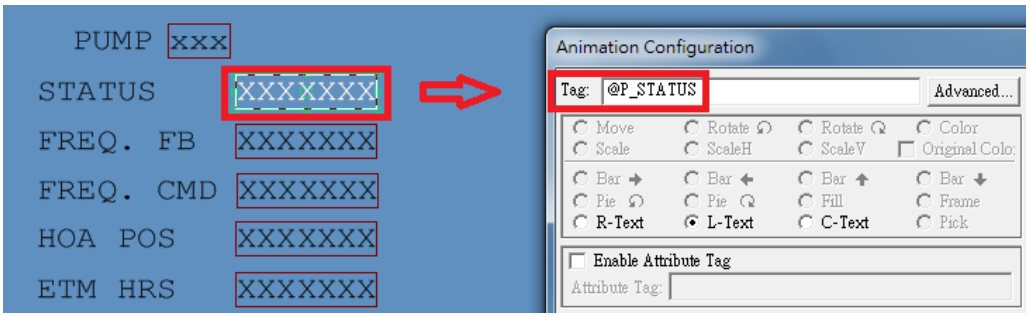
18. Create a bgr page that looks like the following, and assign Local Tags to corresponding text objects.
    - xxx object of PUMP => assign local tag “PUMP_NUM.VIEWVA”
        - PUMP_NUM can be found in I/O Tag
        - .VIEWVA can be found in Field



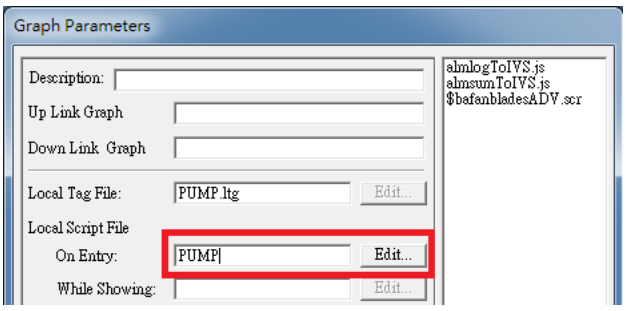
NOTE: .VIEWVA allows tag values pass from one page to another.

Add reference “@” sign in front of 5 tags: “P_STATUS”, “P_FREQ_FB”, “P_FREQ_CMD”, “P_HOA_POS” and “P_ETM_HRS”

- xxxxxxx object of STATUS => assign local tag “@P_STATUS”
- xxxxxxx object of FREQ. FB => assign local tag “@P_FREQ_FB”
- xxxxxxx object of FREQ. CMD => assign local tag “@P_FREQ_CMD”
- xxxxxxx object of HOA POS => assign local tag “@P_HOA_POS”
- xxxxxxx object of ETM HRS => assign local tag “@P_ETM_HRS”

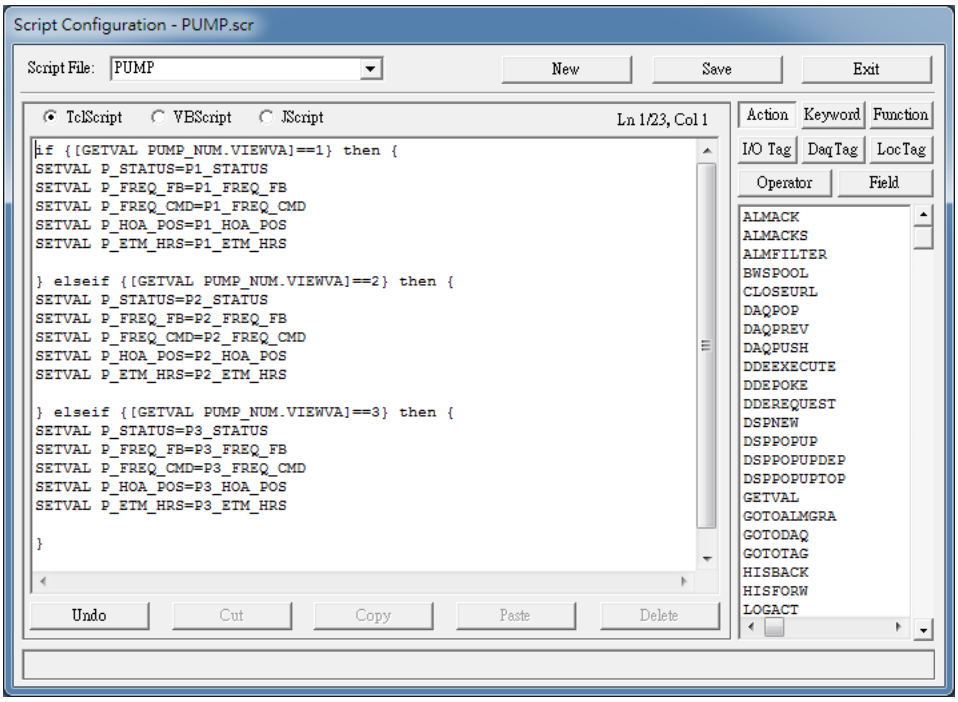


19. Add TCLScript in Local Script File -> On Entry -> named “PUMP”
    Click “Edit” button to continue



20. On Entry TCLScript: PUMP.scr

Purpose: assign physical tag to local tags



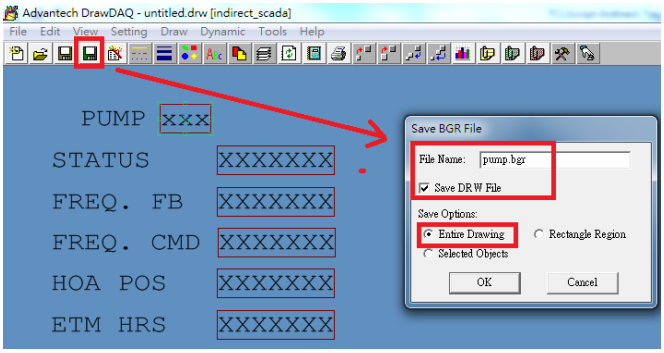

```
if {[GETVAL PUMP_NUM.VIEWVA]==1} then {
SETVAL P_STATUS=P1_STATUS
SETVAL P_FREQ_FB=P1_FREQ_FB
SETVAL P_FREQ_CMD=P1_FREQ_CMD
SETVAL P_HOA_POS=P1_HOA_POS
SETVAL P_ETM_HRS=P1_ETM_HRS

} elseif {[GETVAL PUMP_NUM.VIEWVA]==2} then {
SETVAL P_STATUS=P2_STATUS
SETVAL P_FREQ_FB=P2_FREQ_FB
SETVAL P_FREQ_CMD=P2_FREQ_CMD
SETVAL P_HOA_POS=P2_HOA_POS
SETVAL P_ETM_HRS=P2_ETM_HRS

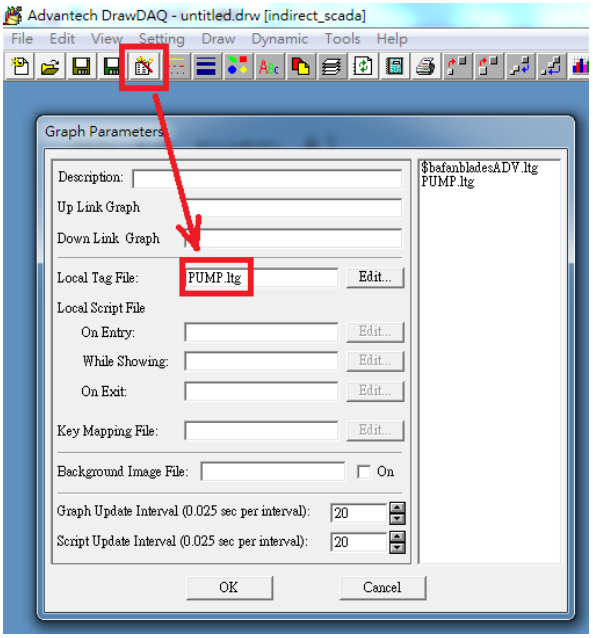
} elseif {[GETVAL PUMP_NUM.VIEWVA]==3} then {
SETVAL P_STATUS=P3_STATUS
SETVAL P_FREQ_FB=P3_FREQ_FB
SETVAL P_FREQ_CMD=P3_FREQ_CMD
SETVAL P_HOA_POS=P3_HOA_POS
SETVAL P_ETM_HRS=P3_ETM_HRS

}
```

21. Save this page to “pump.bgr” and “pump.drw”



22. Create a new page, then assign local tag file PUMP.ltg to Local Tag File

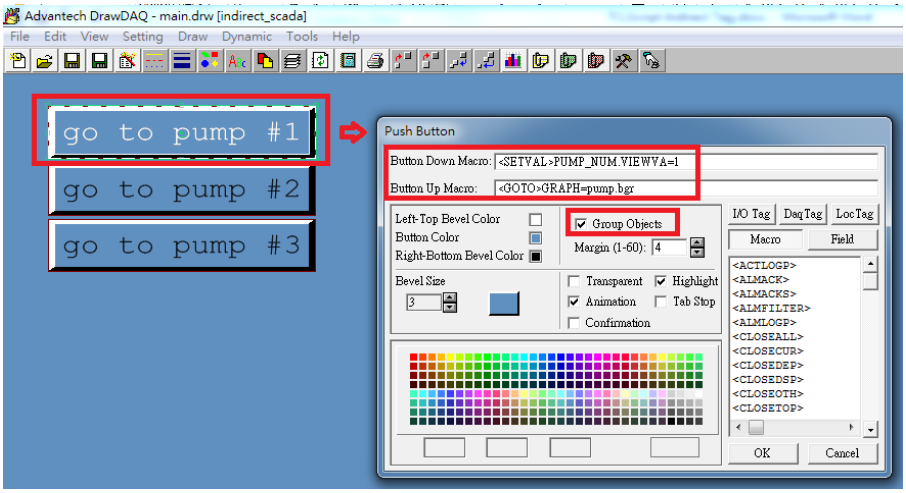


23. Add a new page for main.drw

Create a Push Button that will go to pump #1

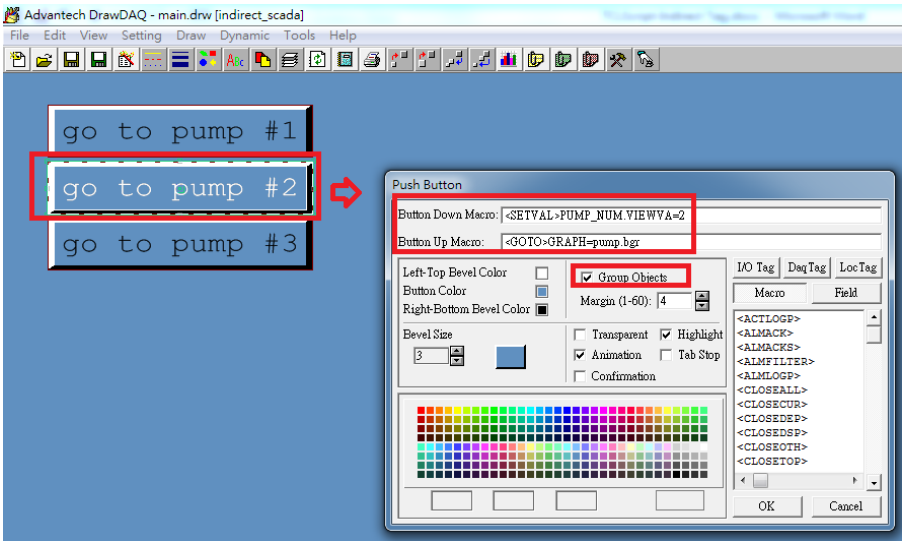
- Button Down Macro: <SETVAL>PUMP_NUM.VIEWVA=1
- Button Up Macro: <GOTO>GRAPH=pump.bgr

Put checkmark in “Group Objects”



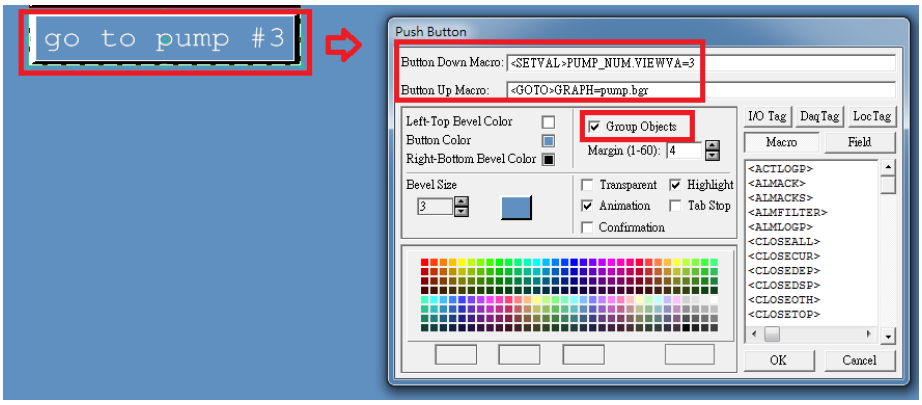
24. Create a Push Button that will go to pump #2
    - Button Down Macro: <SETVAL>PUMP_NUM.VIEWVA =2
    - Button Up Macro: <GOTO>GRAPH=pump.bgr

    Put checkmark in “Group Objects”

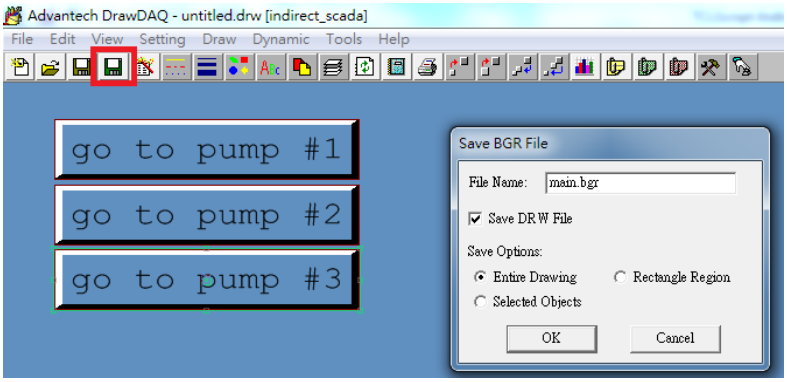


25. Create a Push Button that will go to pump #3
    - Button Down Macro: <SETVAL>PUMP_NUM.VIEWVA =3
    - Button Up Macro: <GOTO>GRAPH=pump.bgr

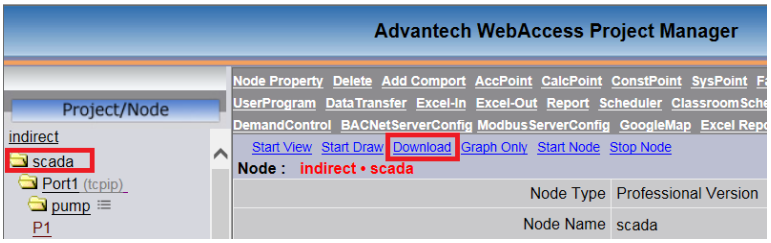
    Put checkmark in “Group Objects”



26. Save this page to main.bgr and main.drw



27. Go to SCADA Node and Download project



28. Result in ViewDAQ

When user clicks “go to pump #2” push button in main.bgr, ViewDAQ switches to pump.bgr with PUMP #2 tag information.

