How to Upgrade MOXGRAF V4 to V5

(White Paper Jun 2011)

0742-901-6001-001

Overview

As a total software solution for configuration and programming of a MOX System, MOX is releasing a new MOXGRAF package consisting of three parts.

1. Workbench
2. Target
3. Project

Workbench - PC software by which the user can configure the MOX hardware or write, compile, download and debug control code specific to the final control system solution. In general terms, this software can be regarded as MOXGRAF.

Target - the firmware running in the controller allowing the execution of the object codes that have been compiled and downloaded to the controller from the MOXGRAF workbench.

Project - a set of files that store the configuration information and individual control program object codes. A Project is generated and maintained within the MOXGRAF workbench. The project is compiled into object codes that the target can execute.

MOXGRAF V5 is the new generation of hardware configuration and IEC61131 programming of MOX system controllers. MOXGRAF V5 merges both MOXIDE and MOXGRAF V4, offering a new software package consisting of new features.

MOXGRAF V5 has been designed with system upgrades in mind, therefore there are no system hardware changes required, during the change over from MOXGRAF V4 to MOXGRAF V5. However MOXGRAF V5 has a substantial change in architecture compared to previous versions, this means that upgrading existing systems needs to be performed with special care.

MOXGRAF V5 works on Windows XP and Windows 7 Operating Systems. However it required a V5 licence dongle and will give warning details if the existing dongle needs to be upgraded.

Before attempting the upgrade process, please carefully read the README.txt document located in the MOXGRAF V5 installation folder (./MOXGROUP/IDE/README.pdf). If your current system contains any features that are not supported by the version of MOXGRAF V5 to be installed, the update will NOT be successful. If this is the case please contact your local MOX supplier for help.

Compatibility

•System Dependence

Controller Type	PN
OC	601-5002
	601-5004
Unity	602-5xxx
Gateway	602-3212-xx
IoNix	606-3002-xx

Workbench V4 - MOXGRAF V4.11 or older; MOXIDE V1.02.xx or older
Workbench V5 - MOXGRAF V5.20.19 or above

Target V4

OC:	V2.06.xx or older
Unity:	V3.01.xx or older
Gateway:	V3.01.xx or older
IoNix:	V3.01.xx or older

Target V5

OC:	V2.07.12 or above
Unity:	V3.03.05 or above
Gateway:	V3.03.05 or above
IoNix:	V3.02.03 or above

Project V4 - MOXGRAF Project that is generated and maintained by Workbench V4.
Project V5 - MOXGRAF Project that is generated and maintained by Workbench V5.

•Workbench and Project Compatibility

Project V4 could be edited ONLY by Workbench V4.
Project V5 could be edited ONLY by Workbench V5.

Workbench \ Project	V4	V5
V4	Yes	No
V5	No	Yes

•MOX Target and MOXGRAF Workbench Compatibility

Workbench V4 could work with Target V4 and V5.
Workbench V5 could work with Target V5 ONLY.

Target \ Workbench	V4	V5
V4	Yes	No
V5	Yes	Yes

•MOX Target and MOXGRAF Compiled Project Compatibility

Target V4 could work with Project V4 ONLY (by Workbench V4).
Target V5 could work with Project V4 (by Workbench V4), and Project V5 (by Workbench V5).

Target \ Project	V4	V5
V4	Yes	No
V5	Yes	Yes

To ensure full compatibility with MOXGRAF V5, the Target or the Project will need to be upgraded from V4 to V5. The details of Target and Project upgrading will be described in the following chapters.

Note

MOX will supply all controllers with a Target compatible with MOXGRAF V5. As the new Target supports Workbench V4 and Project V4, the end user does not have to upgrade MOXGRAF V4 in order to get the system to work.

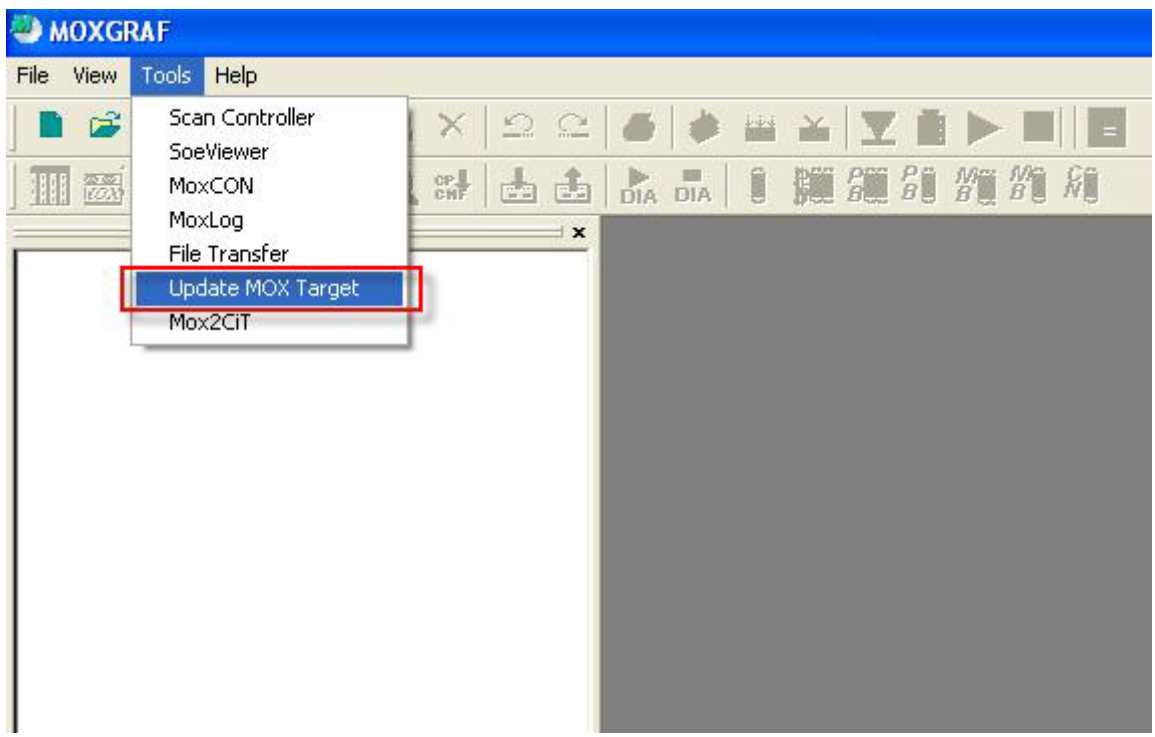
MOXGRAF V5 is designed to work alongside MOXIDE and MOXGRAF V4. It is possible to configure different systems in different software environments on a single PC platform, however MOXGRAF V4 and MOXGRAF V5 CANNOT run simltaneously.

Upgrade Procedure

To perform the upgrade, follow the steps below.

1. Target Upgrade

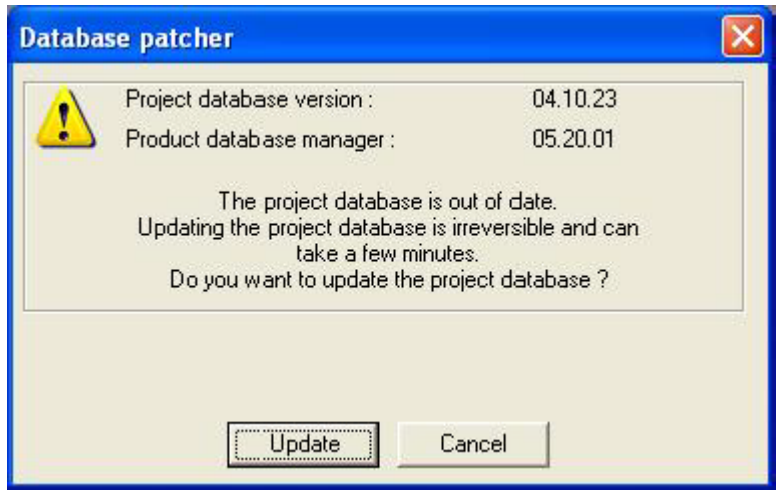
The functionality of MOXGRAF V5 depends upon the specific target version currently running on the MOX controller. Before the use of MOXGRAF V5, it is required to update the target running on the controller.



2. MOXGRAF Project Upgrade

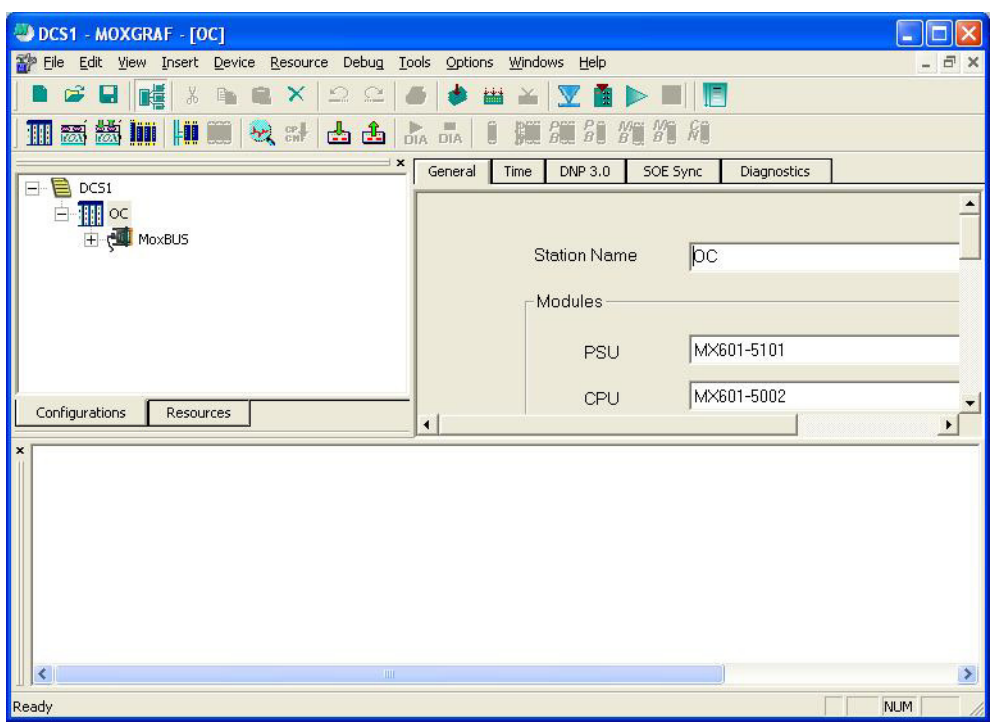
Taking a MOXGRAF V4 project named 'DCS1' for instance (hereafter referred to as 'DCS1V4'), the upgrading process is detailed step by step. Suppose the MOXGRAF V5 installation directory is 'C:\Program Files\MOX Group\MOXGRAF' (referred to as MOXGRAFV5Dir). Before updating work, it is stongly recommended to backup the DCS1V4 project.

2.1 Run MOXGRAFV5Dir\MOXGRAF 5.2\Bin\DPM.exe. Open PRJlibrary.mdb file that is located in DCS1V4 directory by selecting 'File-> Open Project / Library', and click the 'Update' button from the pop-up dialog box shown in the following figure.

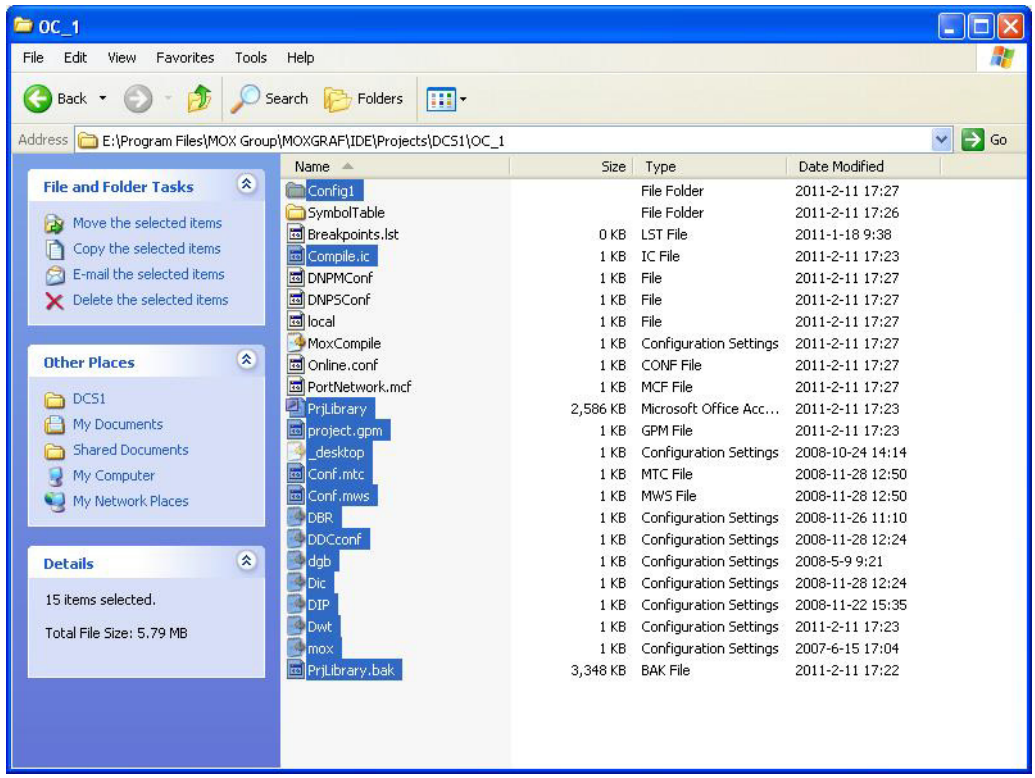


2.2 When the update finishes, DPM will open the updated project (DCS1V4_updated) automatically. Then proceed to delete all the I/O devices, if any, in the 'I/O Wiring' window. When one I/O device is deleted, all wired variables to it will be freed as global with input or output direction attribute unchanged. After completed, save the project and quit the DPM program.

2.3 Start MOXGRAF V5 program. Create a new project by selecting ‘File-> New Project’. Input ‘DCS1’ as the project name (hereafter referred to as 'DCS1V5'). Then add corresponding controller according to the template used in DCS1V4. Select adding OC if DCS1V4 template is 'MoxStandardPrj', or adding Unity if DCS1V4 is based on ‘MoxRTUStandardPrj’, or adding IoNix if DCS1V4 is based on ‘MoxIoNixStandardPrj’). For this case, add controller OC. After that , save the project and close the MOXGRAF V5 Program.

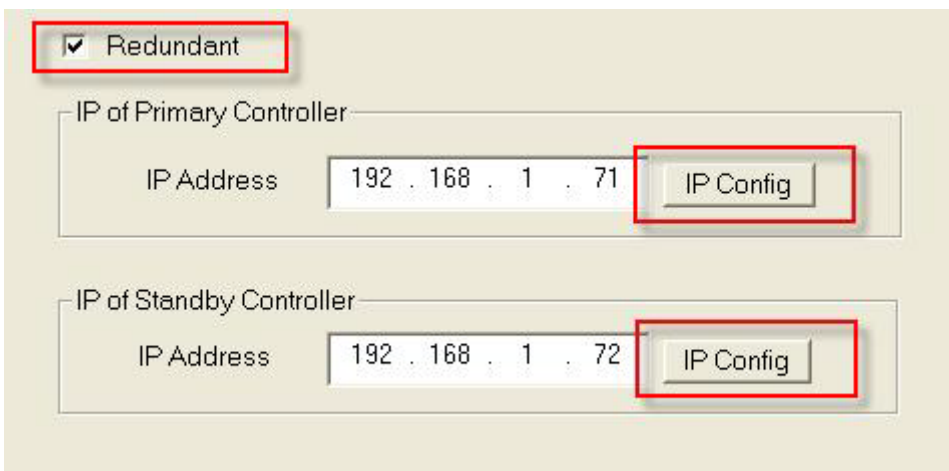


2.4 Copy all the files in the DCS1V4_updated project directory to DCS1V5 project directory and overwrite all files with the same name. The resulting DCS1V5 directory will then look like that shown in the following figure.

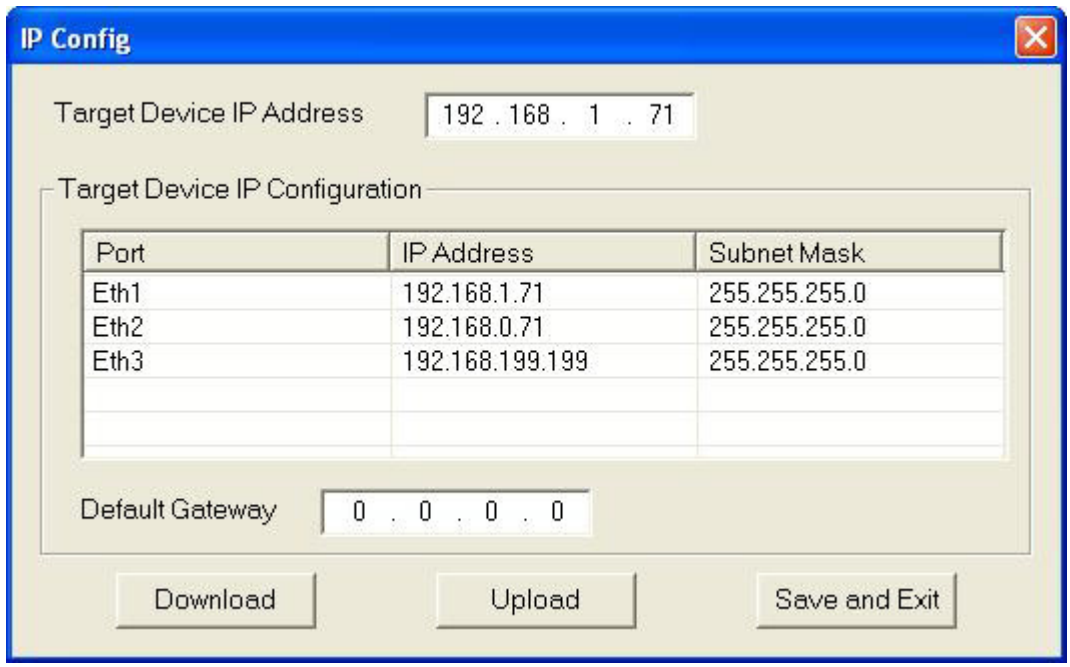


2.5 Run MOXGRAF V5, and open DCS1V5 project. The IP address and redundancy information cannot be brought up from DCS1V4 to DCS1V5 and it is required to update them in DCS1V5 manually at first.

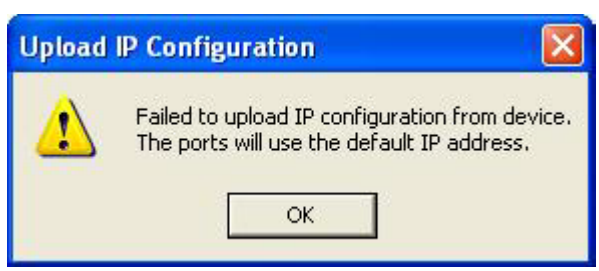
2.6 If DCS1V4 is configured as redundancy, check the "Redundancy" option on the "General" tab of the controller, and input the actual IP addresses of the communication ports of the redundant pair, as follows.



And then, click "IP Config" button to configure the IP address of primary controller and standby controller one by one. The IP Config utility will be popped out as follows.

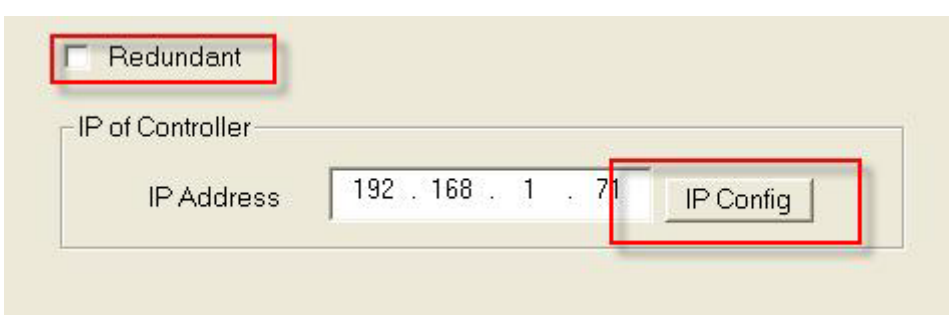


When IP Config starts up, the actual IP addresses configuration will be uploaded from the target controllers and refreshed to the Target Device IP Configuration area automatically.
Click Save and Exit to save this settings to the DCS1V5 and exit IP Config.
If the IP Address of the controller is unreachable, the following message will be shown.



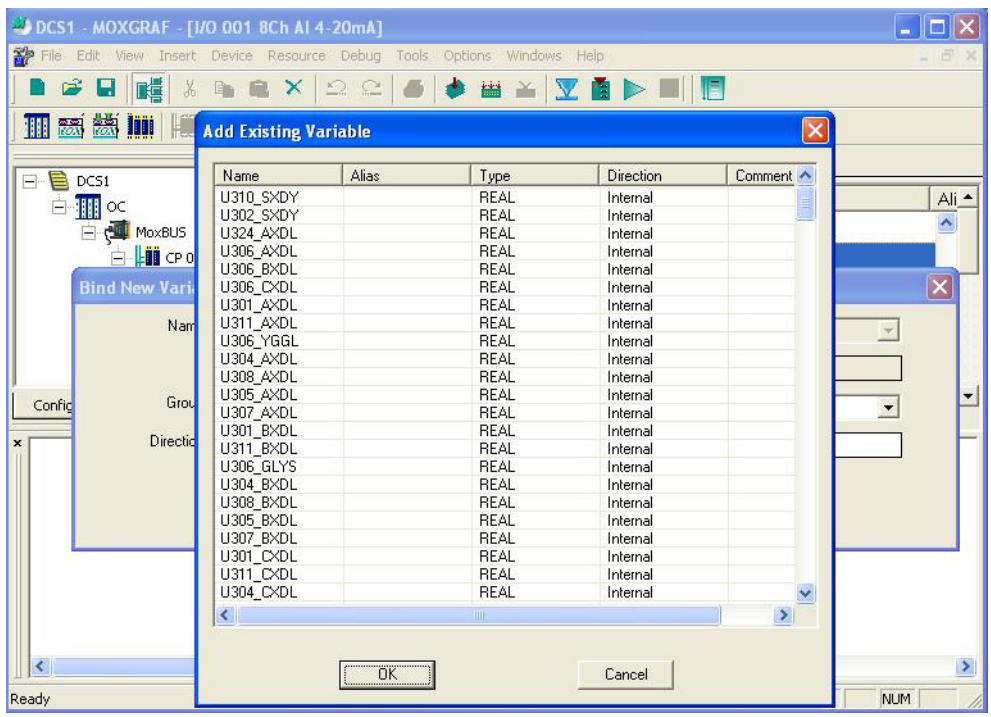
Click OK and the Target Device IP Configuration area will be filled up with default IP address settings.

2.7 If DCS1V4 is configured as standalone, uncheck the "Redundancy" option on the "General" tab of the controller, and input the actual IP addresses of the communication ports of the controller, as follows.



And then, click "IP Config" button to configure the IP address of the standalone controller.

2.8 Re-bind channel variables in the 'I/O Variables' page.
All available variables are listed in the 'Add Existing Variables dialog box'. For input card, Internal variables and Input variables are listed; for output cards, Internal variables and Output variables are listed.



Note

The group and scope attributes of all I/O variables in MOXGRAFV5 are forced to be "non-grouped" and "Global"; therefore, the original attributes of those in DCS1V4 will be lost during the update.

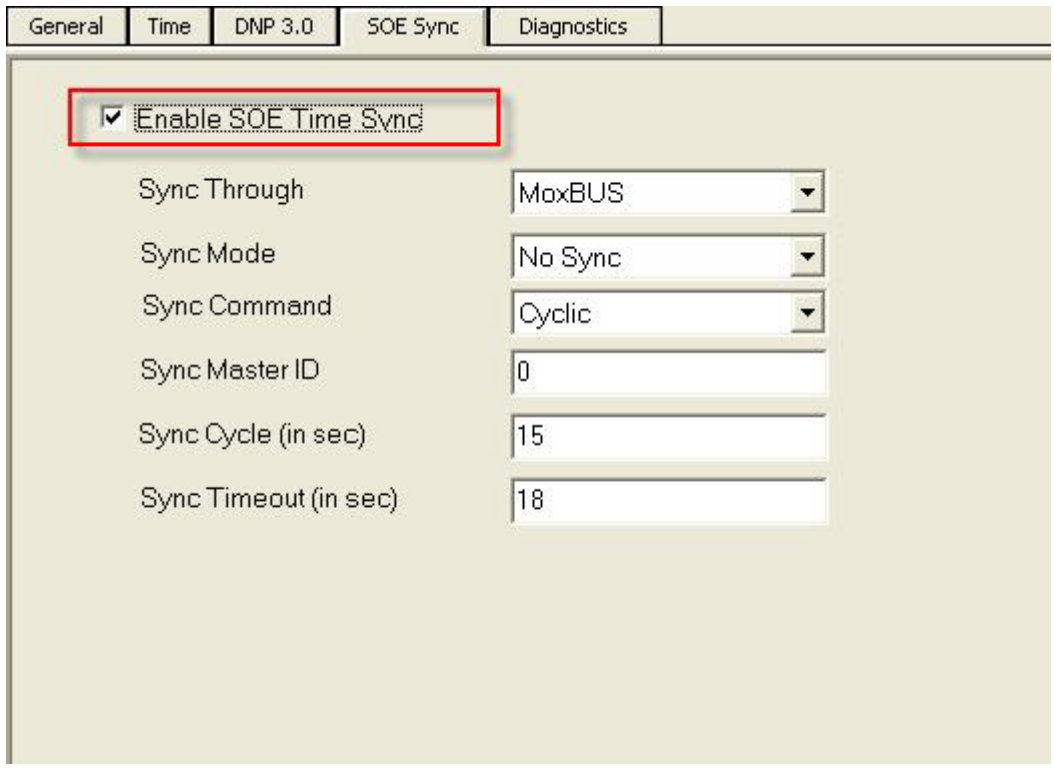
2.9 The variables that are wired to the last channel of MOX 603 I/O devices in DCS1V4 should be updated differently from other channels.

The last channel of MOX 603 I/O device in MOXGRAF V4 is called "module status" which indicates the online status of the actual device; in some cases, one actual device may have more than one I/O devices in MOXGRAF V4 to represent multiple data types, and the last channels of these I/O devices show a same value because they share the same module status actually.

MOXGRAF V5 redefines the MOX 603 I/O wiring architecture and permits only one "Module Status" variable for each I/O device. This "ModuleStatus" is restricted to be "DINT" and "Internal" which is not compatible to the "last channel" solution in MOXGRAF V4.

It is recommended to delete all variables that are wired ever to the last channels in DCS1V4 and reprogram them in DCS1V5.

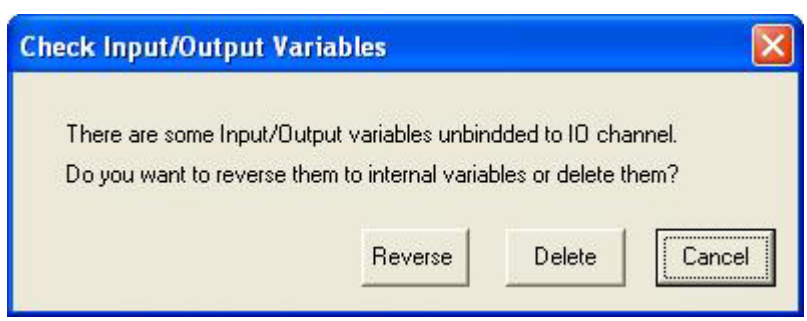
2.10 For the SOE application in MOXGRAF V4, SOE_TS I/O device was used for SOE synchronization control. In MOXGRAF V5, the SOE synchronization is configured by the "SOE Sync" of the controller as follows.



If SOE_TS was used in DSC1V4, all I/O variables wired to this I/O device should be deleted, and the information in this tab of DCS1V5 should be configured as the requirements.

Please refer to the online help of MOXGRAF V5 for the details.

2.11 Save and compile the project. The following dialog box pops up in the compilation process, if there are unbinded Input or Output variables. The most possible reason is that some wired variables in DCS1V4 are missed in the rebinding work. It is strongly recommended to check all the variables with Input or Output direction attribute. After everything is OK, you may need to select reversing the Read/Write variable to internal/ Free or deleting them to continue compiling the project.



Note

When the following dialog box occasionally pops up in MOXGRAF V5, you need to choose 'Yes' before you can continue compiling.