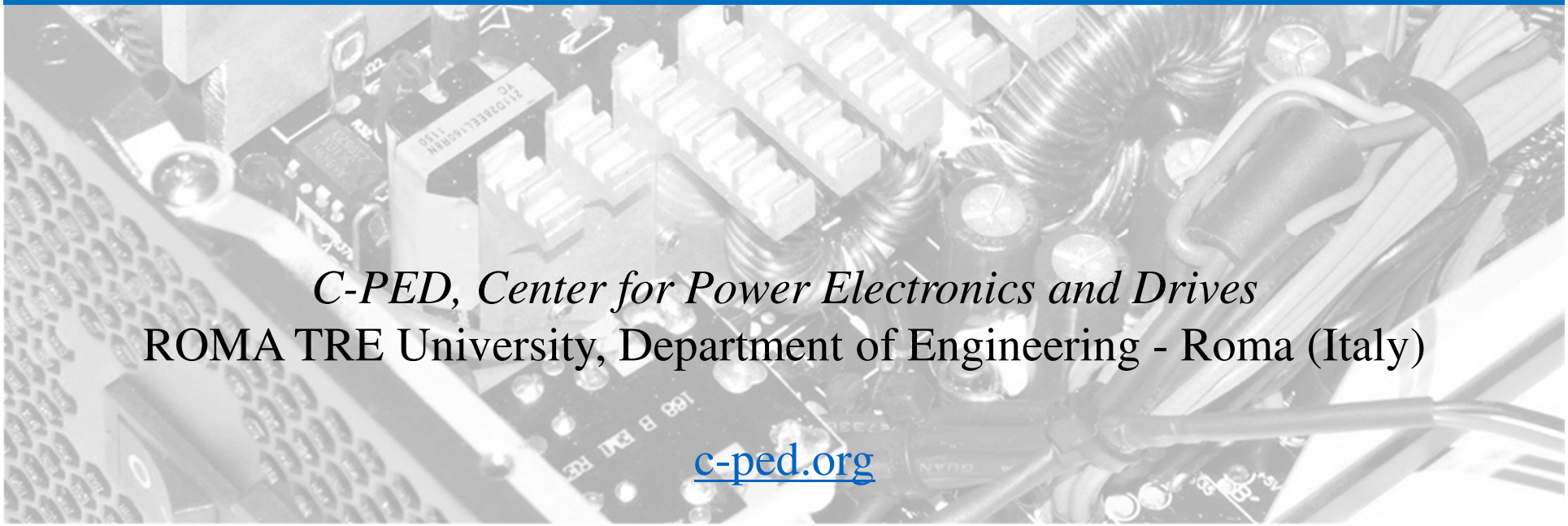
ROMA TRE
UNIVERSITÀ DEGLI STUDI

C-PED
CENTER FOR POWER ELECTRONICS AND DRIVES

PED-Board®

Getting Started



C-PED, Center for Power Electronics and Drives
ROMA TRE University, Department of Engineering - Roma (Italy)

c-ped.org

Power-Up the PED-Board , V2 and Mini

1,3: Vin
2,4: GND

- Mate connector DIGIKEY code WM3701-ND, manufacturer Molex
- Pin DIGIKEY code WM2501-ND, manufacturer MOLEX

Recommended input voltage supply	**12**	**V**	**Vin - DC**
Input voltage supply range	**±10%**		**Respect to Vin**
No reverse voltage protection			
Input current	**2.5**	**A**	**Minimum power supply requirements**

Power-Up the PED-Board V3

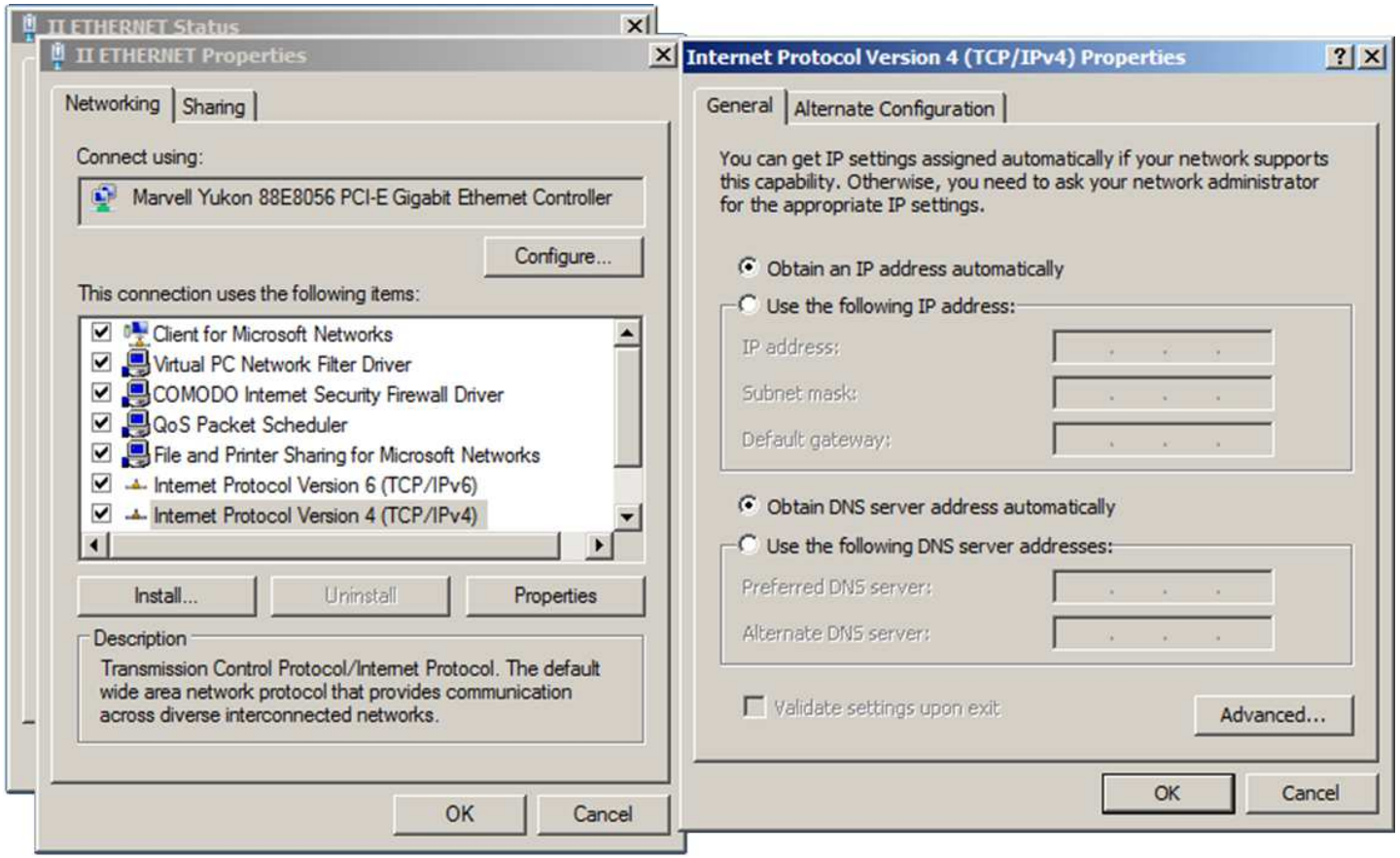
- Connector OMNIMATE SL
  Weidmuller, RS code 403-998

- Mate connector, Farnell 1729275
- DataSheet

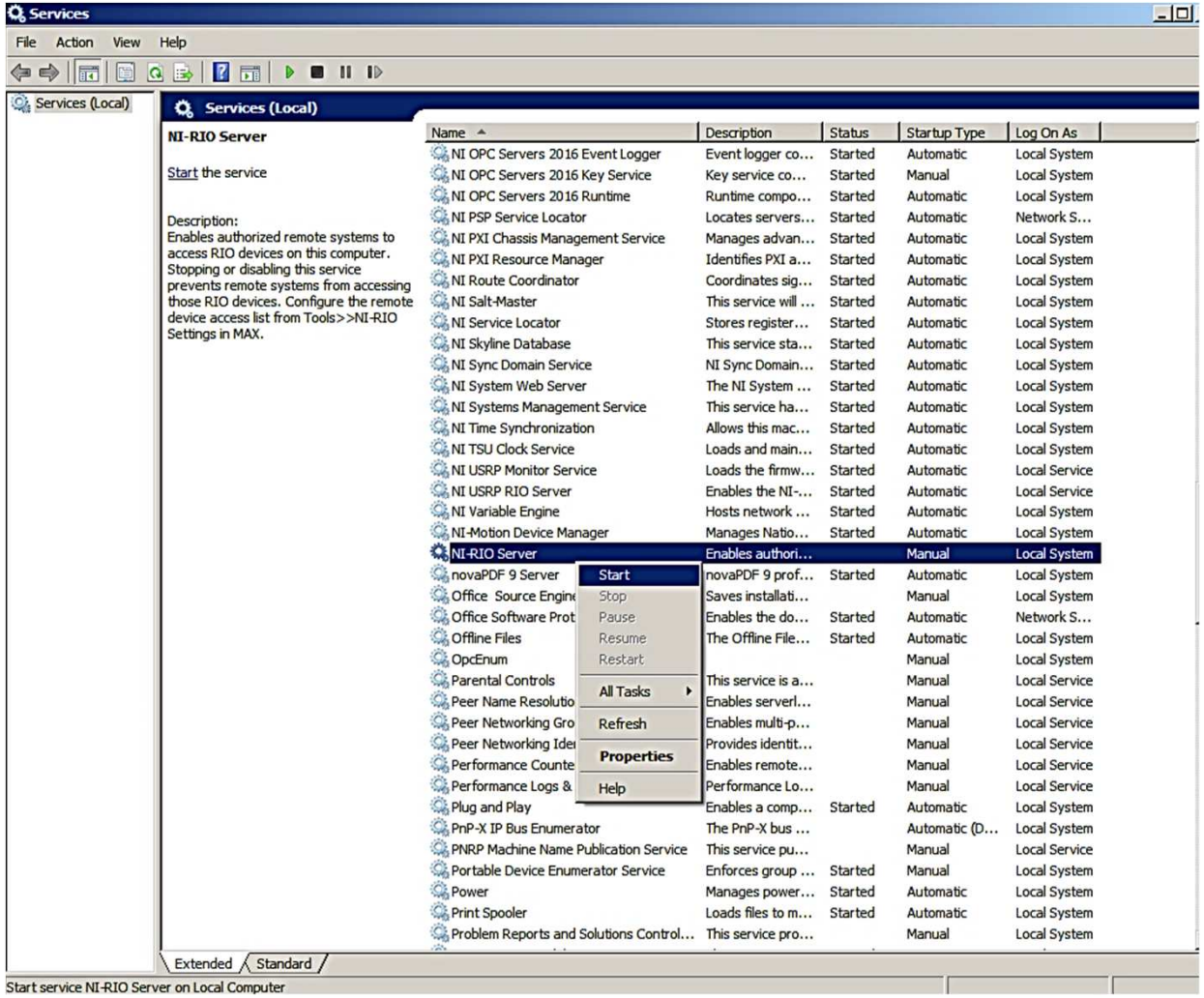
Recommended input voltage supply	12	V	Vin - DC
Input voltage supply range	±10%		Respect to Vin
No reverse voltage protection			
Input current	2.5	A	Minimum power supply requirements

Starting configuration of the NI-SoM

- Connect the PED-Board directly to the PC network adapter → point-to-point connection (crossed cable is not mandatory)
- Set the PC network card for DHCP as shown below



Starting NI-RIO Server under Win OS

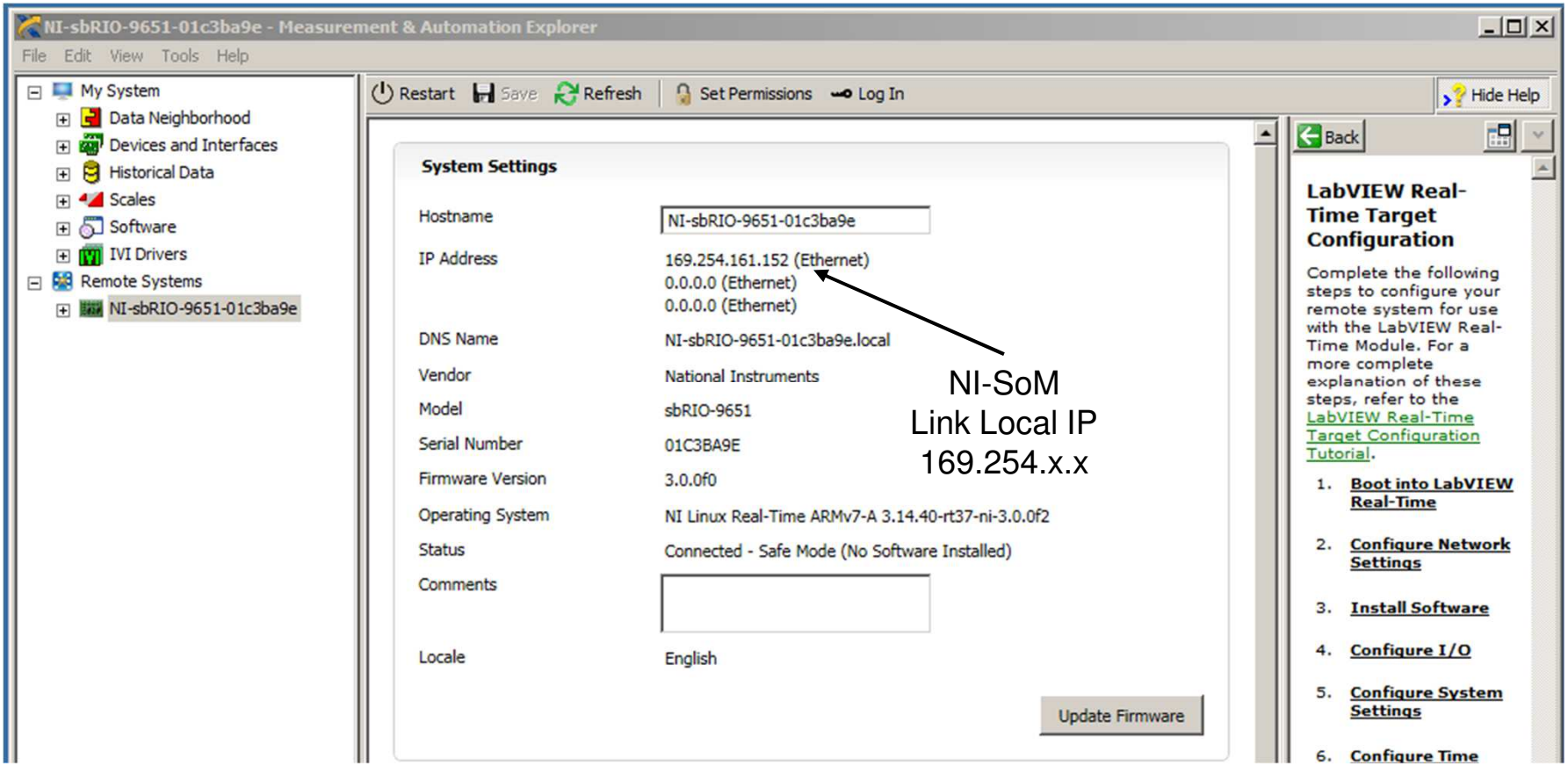


Verify that also the following Windows services have been started:

- NI Configuration Manager
- NI Device Loader

Starting configuration of the NI-SoM

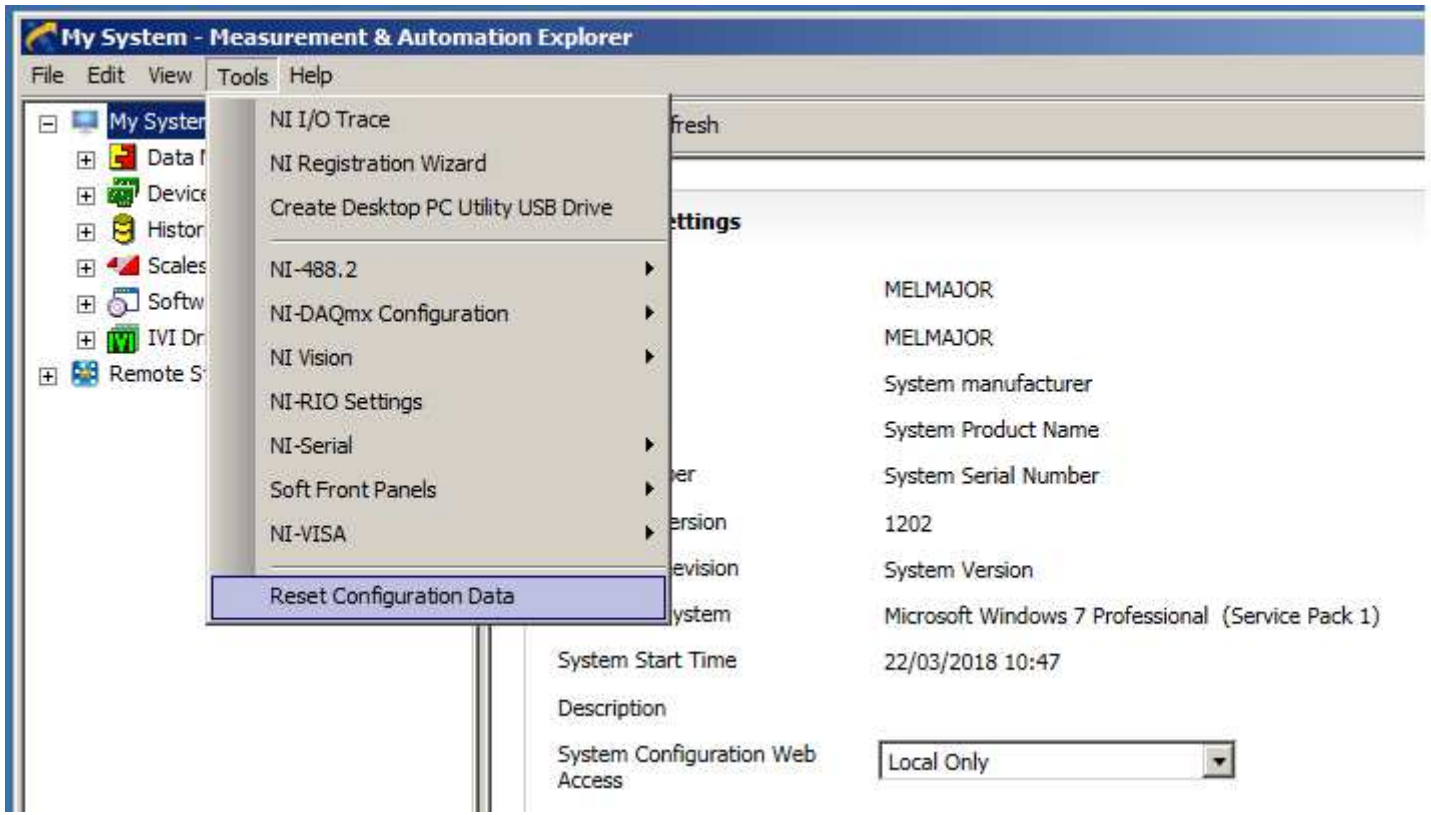
- Open NI-MAX and go to Remote Systems
- The NI-SoM on-board the PED-Board should appear in the list



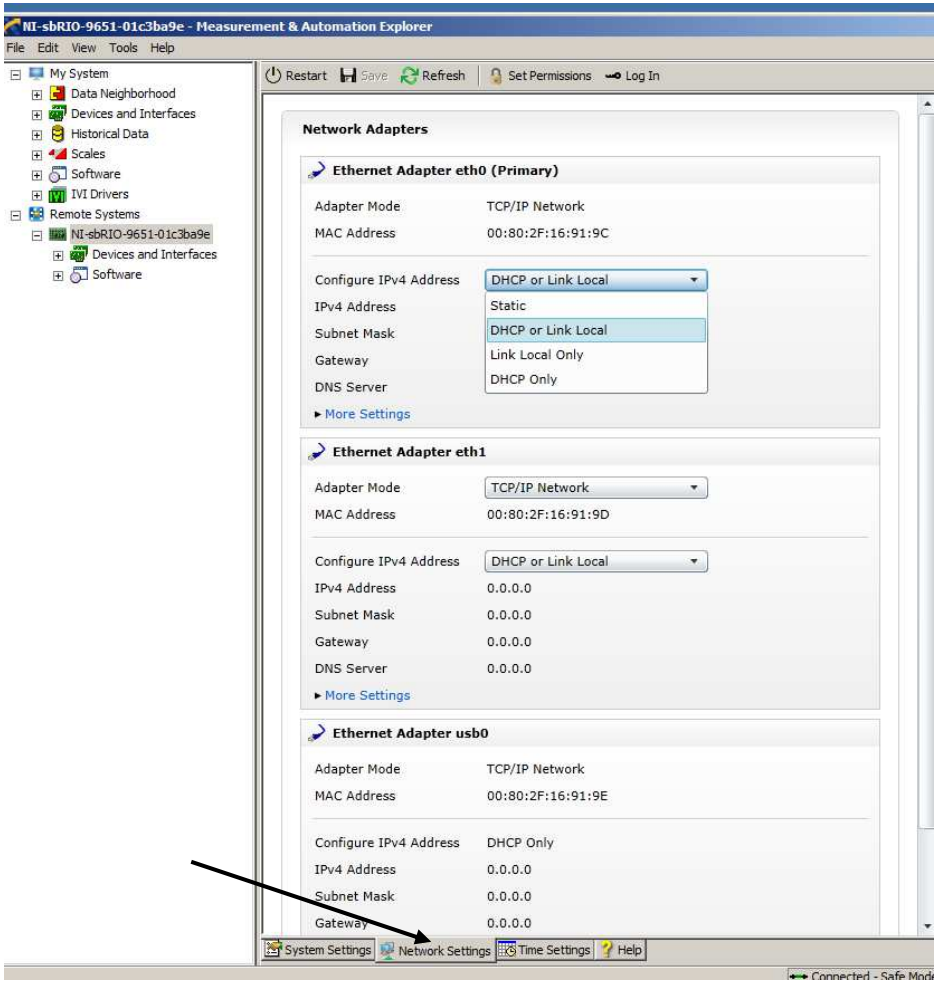
If the SoM is not present under Remote Systems, go to Resetting NI-MAX…(next slide)

Starting configuration of the NI-SoM
Resetting NI-MAX

- Reset NI-MAX and then restart the PC



Starting configuration of the NI-SoM
Changing ethernet configuration

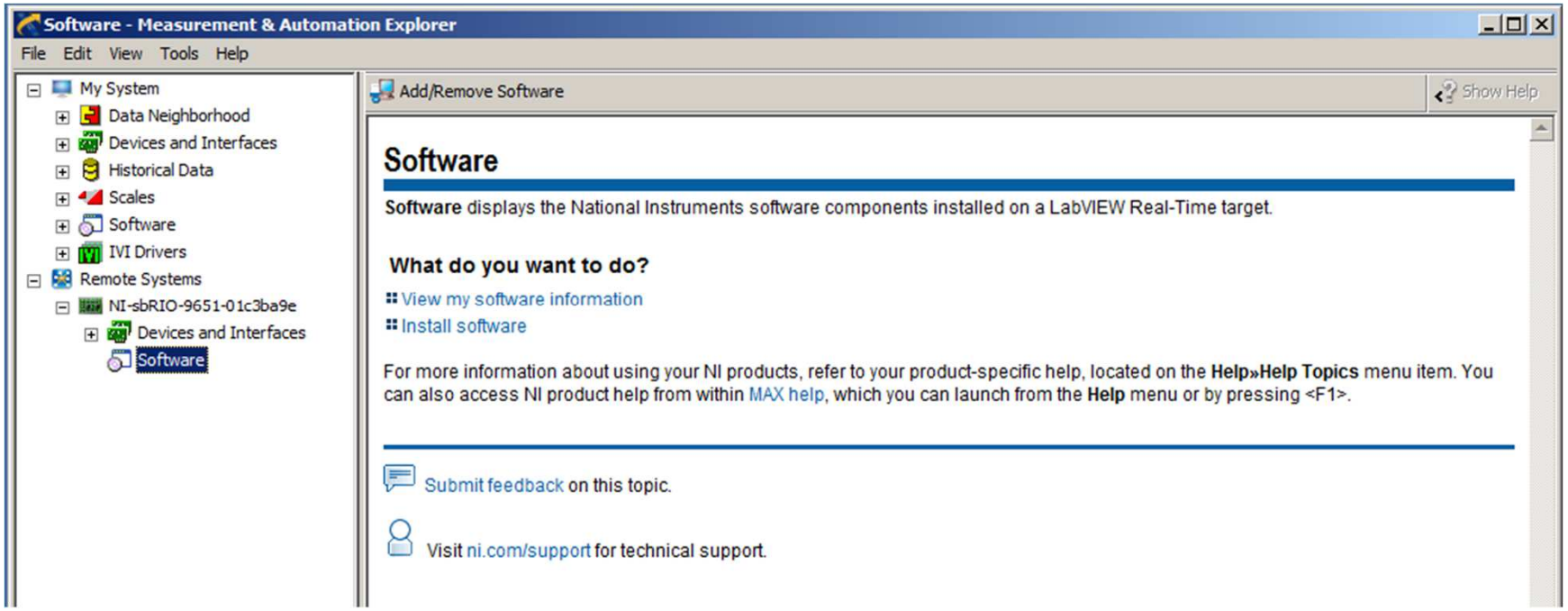


- Select the Network Settings tab
- eth1 adapter could be disabled, it is not supported on the PED-Board
- Configure the eth0 according to your network

More info: [Discovering the Controller in MAX]

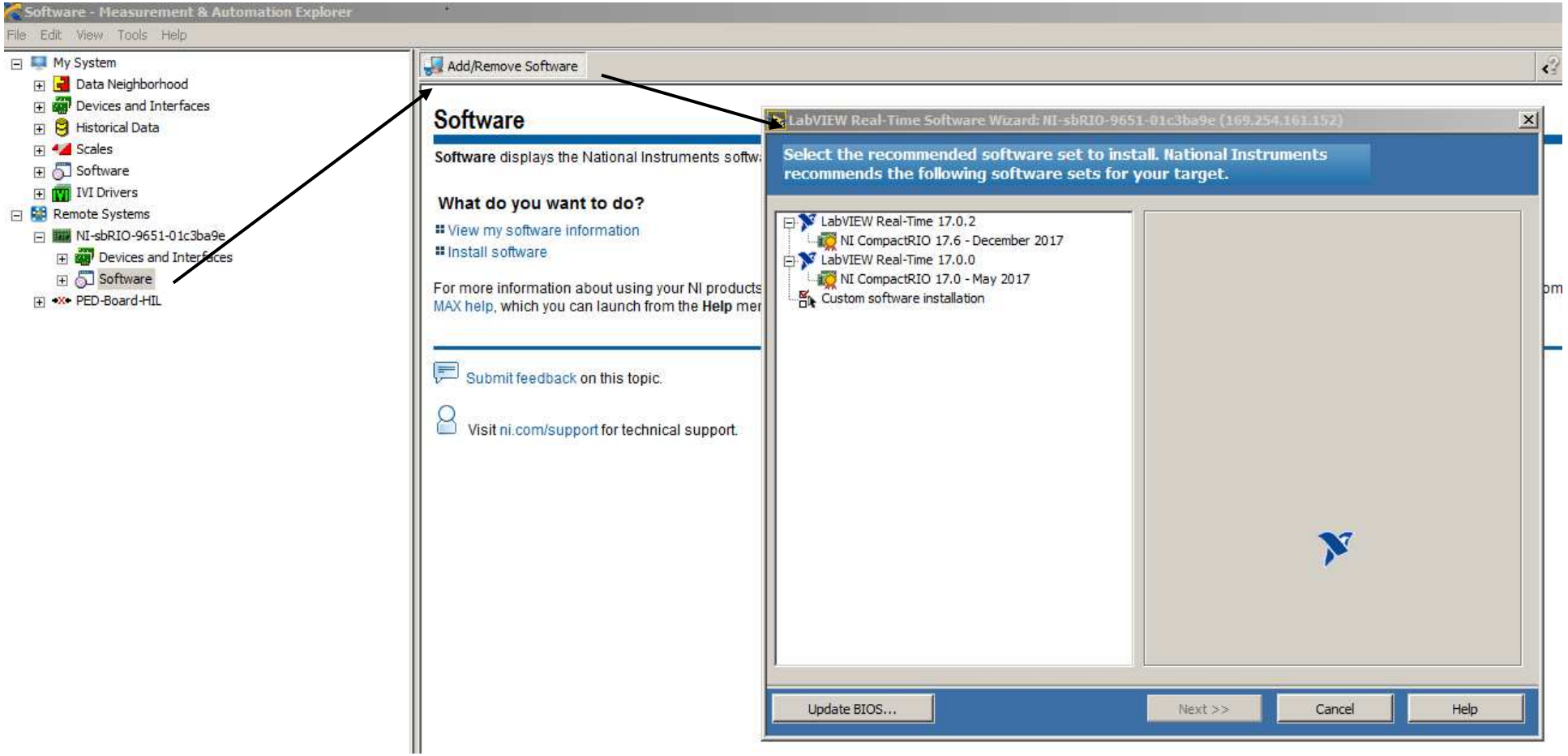
Starting configuration of the NI-SoM Add/Remove Software

- Go to Software and select Add/Remove Software
- By default SoM has
  - User name: Admin
  - Password: leave blank (do not write anything, default setup)
- Install the software you need and update the SoM bios



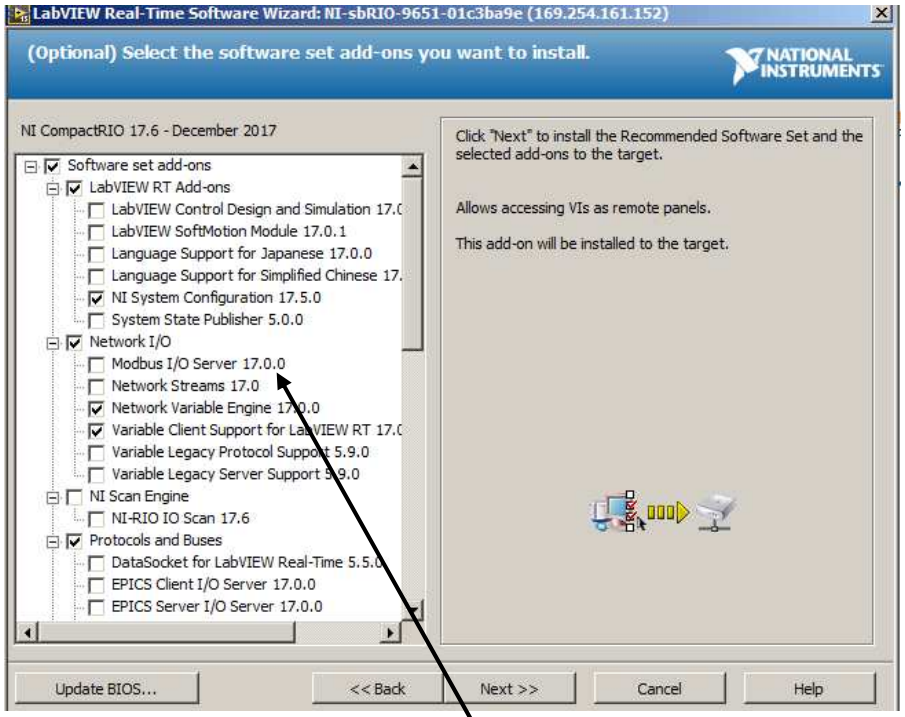
Starting configuration of the NI-SoM
Add/Remove Software

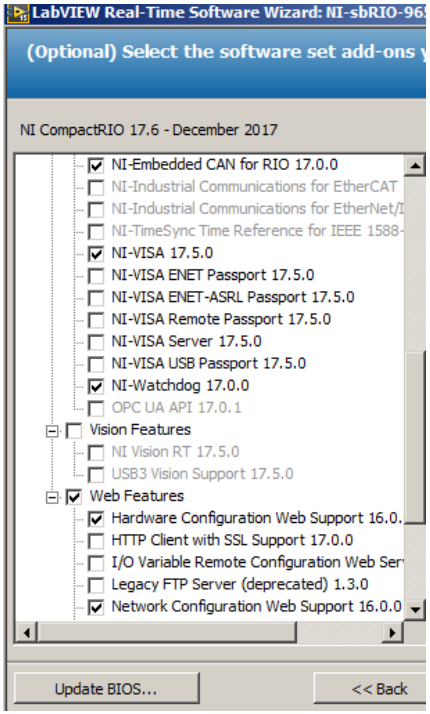
- Select the latest version, then Next >>

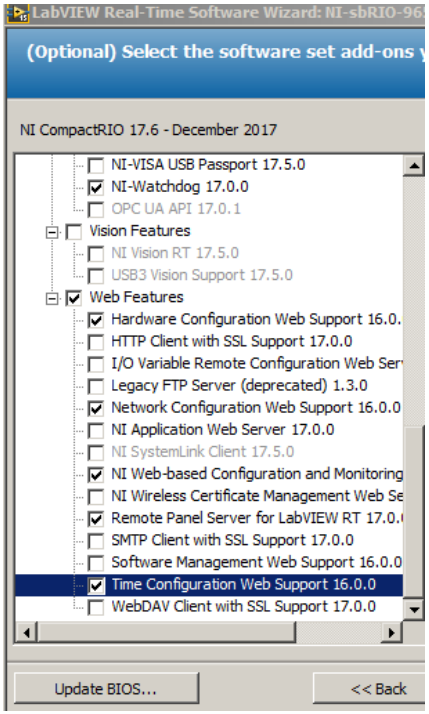


Starting configuration of the NI-SoM
Select packages to install

- Proposed packages selection usually fits most of the applications

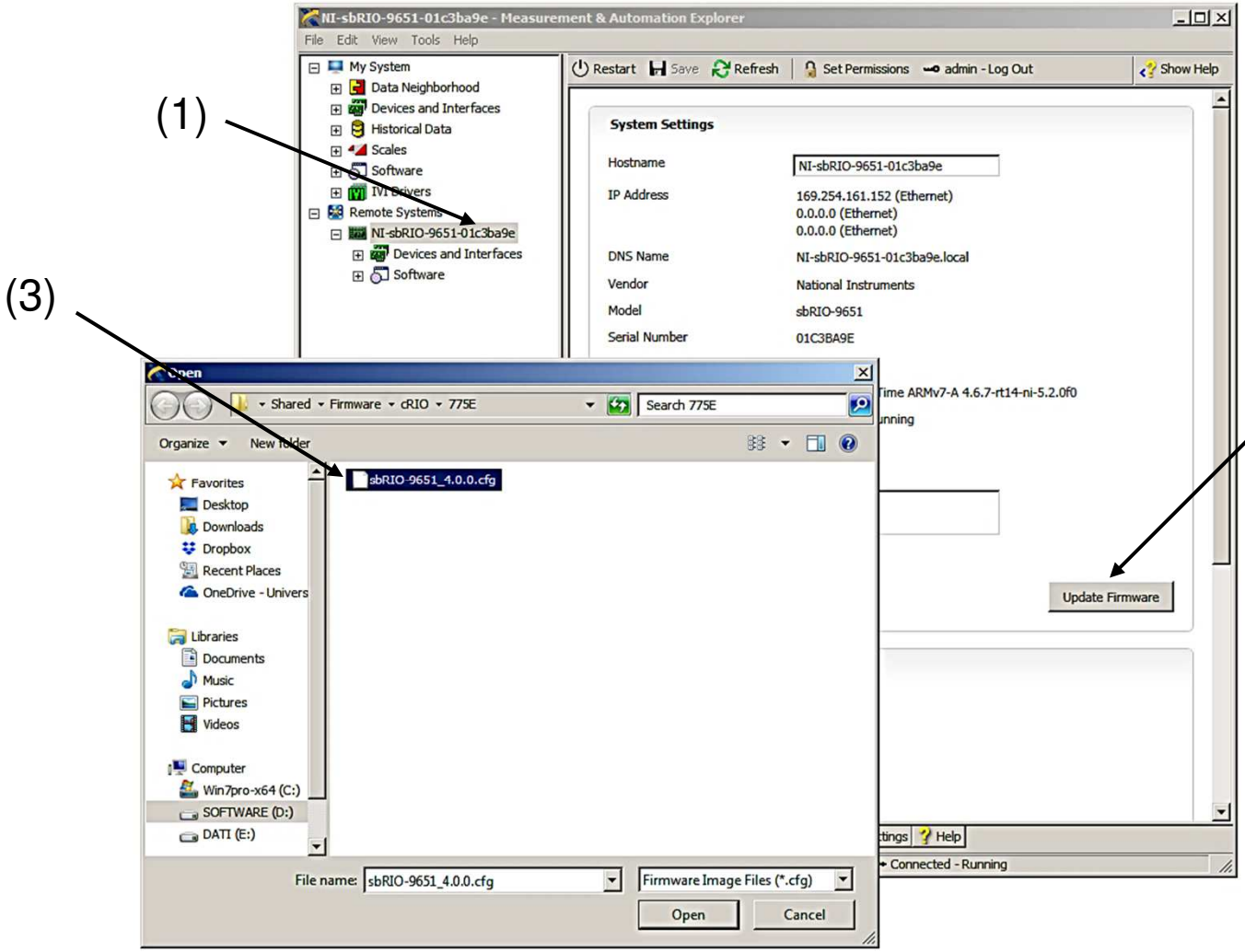






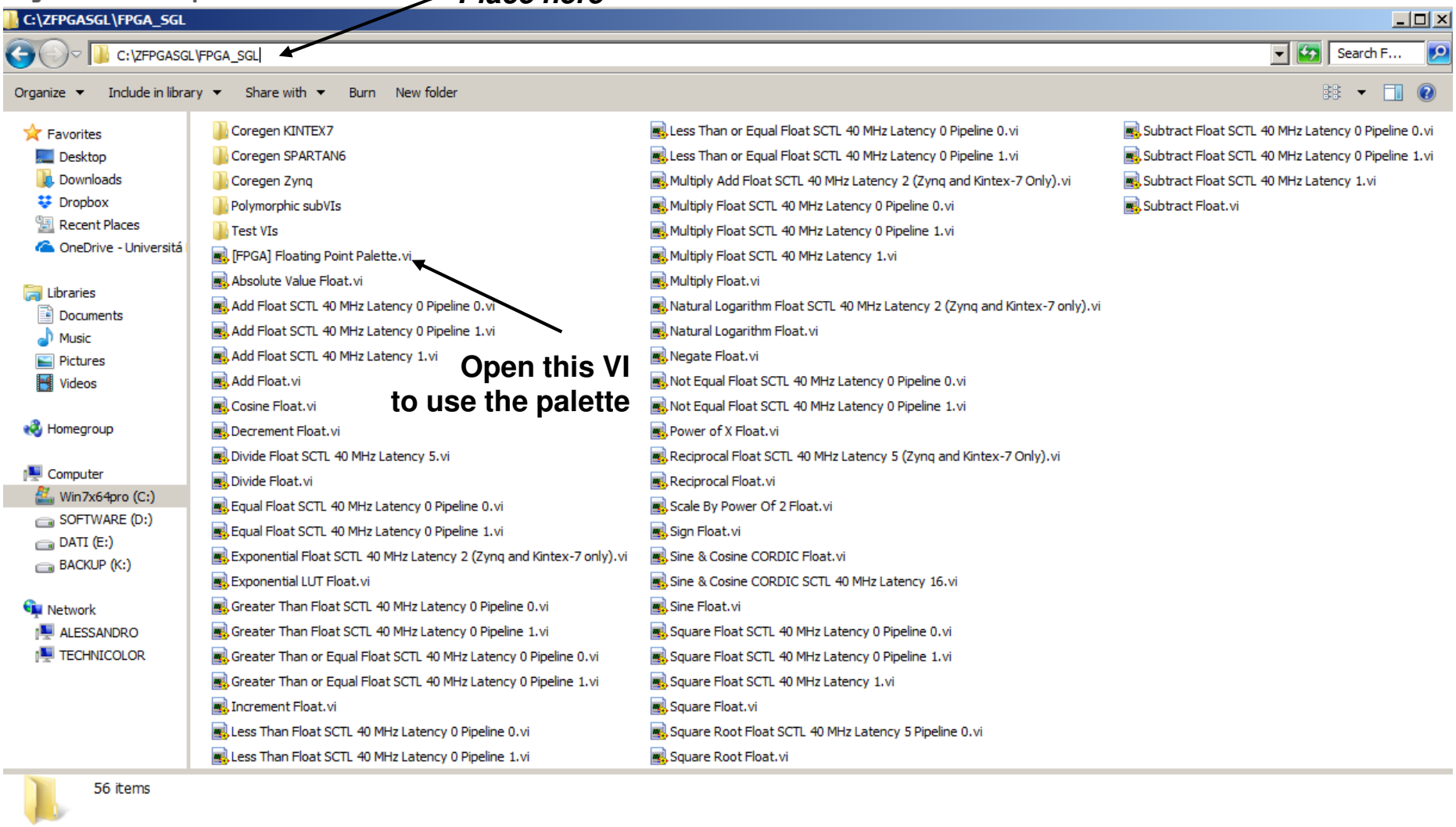
Select if you specifically need to use the ModBus

Starting configuration of the NI-SoM
Updating SoM bios (firmware)



After installing the OS and drivers, the SoM bios can be updated.

FPGA 32-bit Floating-Point Toolkit



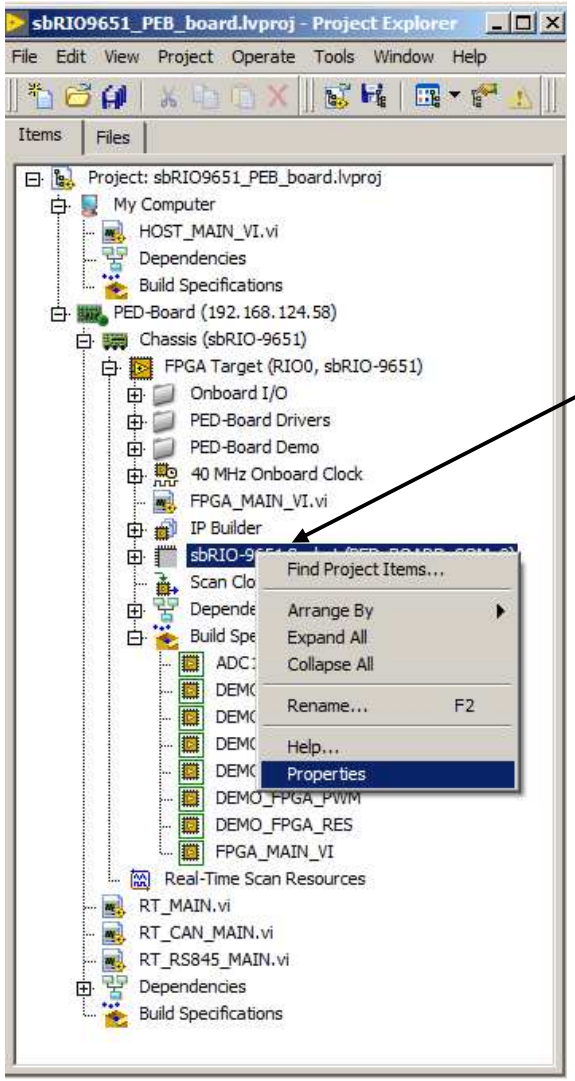
Latest version of the FPGA floating-point toolkit can be download from: ZFPGASGL_V6_LV2017.rar

FPGA 32-bit Floating-Point Toolkit

- Since LabVIEW 2018, floating-point toolkit has been consolidated

Accessible from any VI under FPGA target

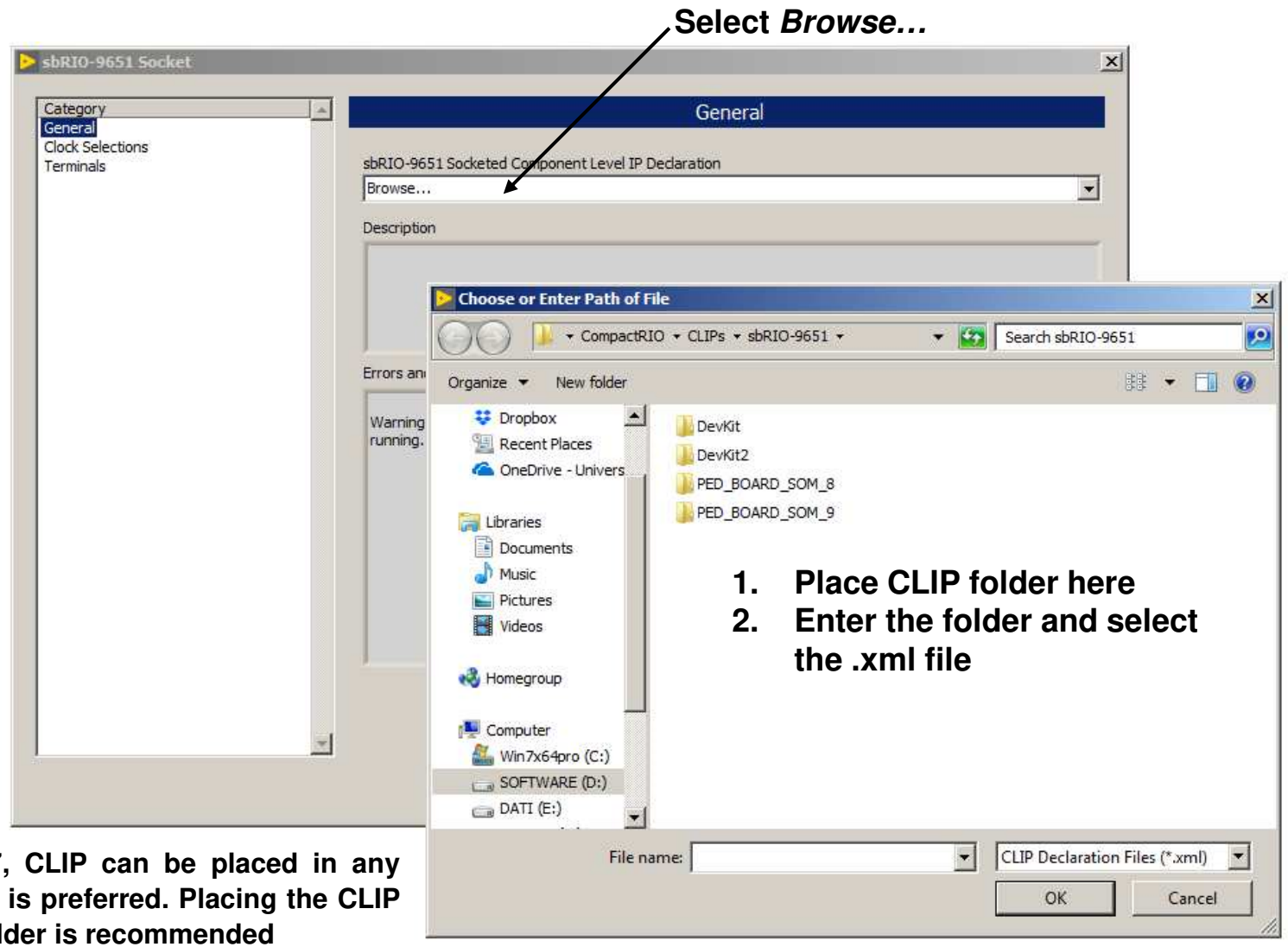
Selecting LabVIEW CLIP



Linking or updating the LabVIEW Project with the latest CLIP

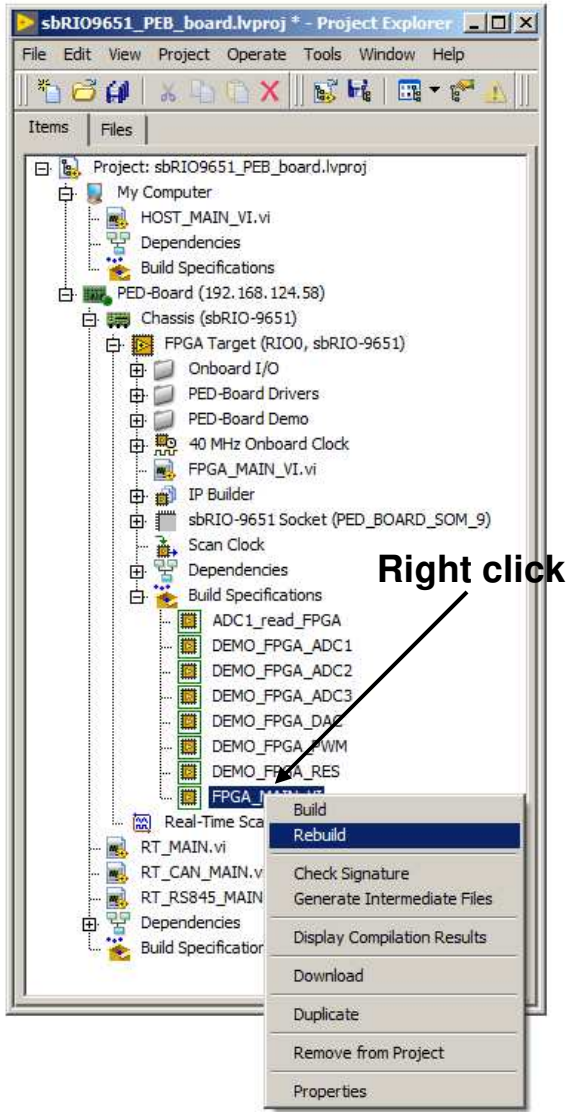
Right click, then select *Properties*

Selecting LabVIEW CLIP



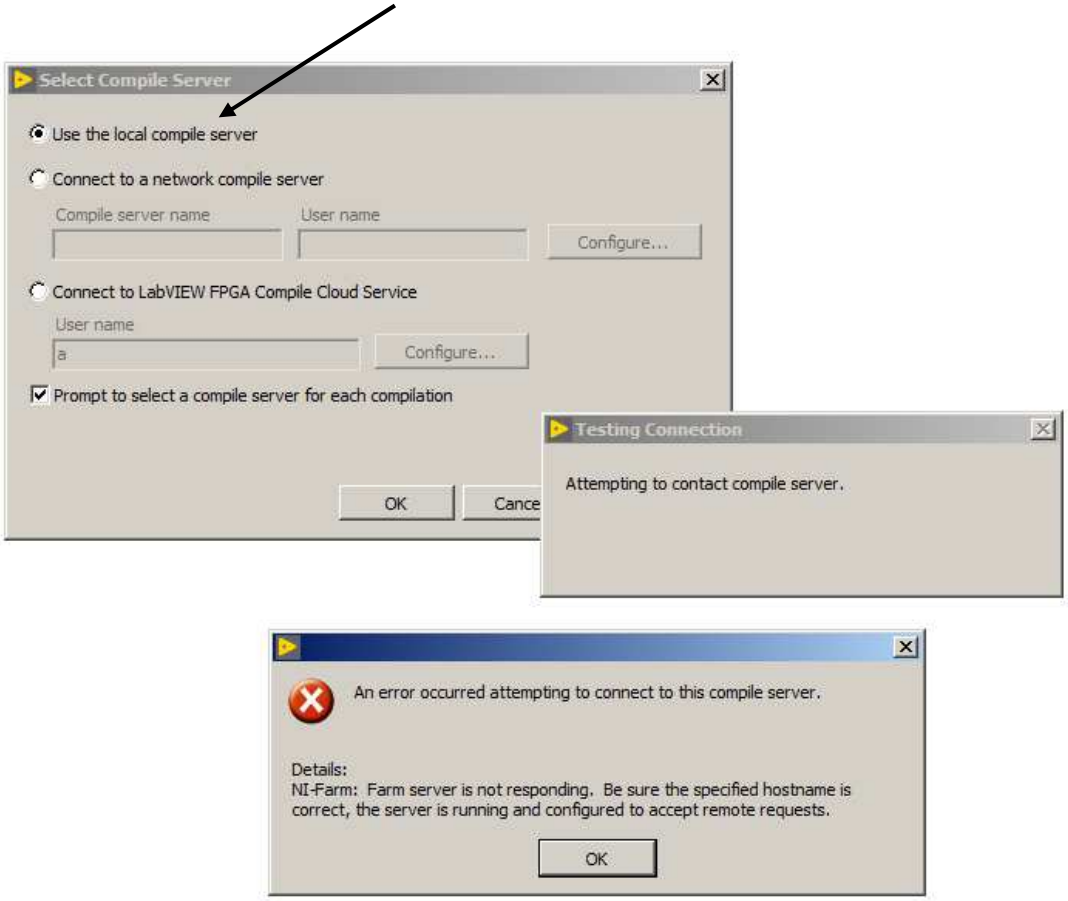
Since LabVIEW2017, CLIP can be placed in any path. Select the one is preferred. Placing the CLIP within the project folder is recommended

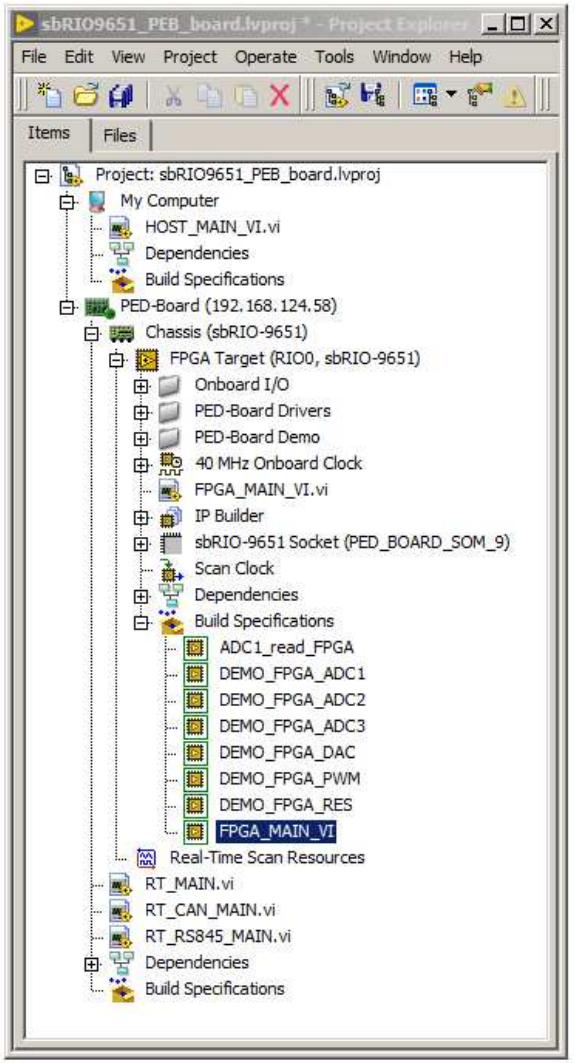
Compiling FPGA VI



Right click and then…

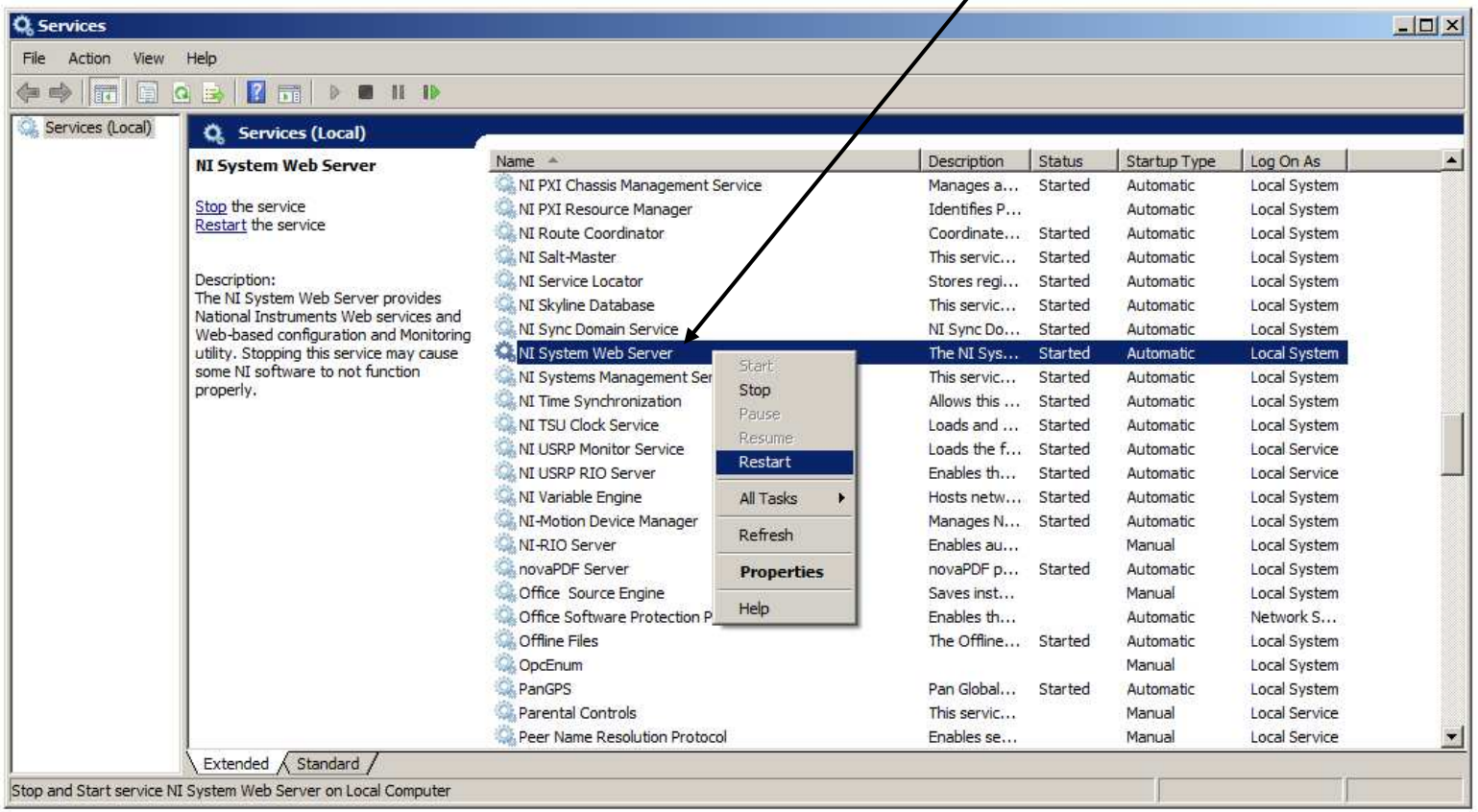
FPGA Local Compiler Issue





Fixing FPGA Local Compiler Issue

Right click, then select *Restart*



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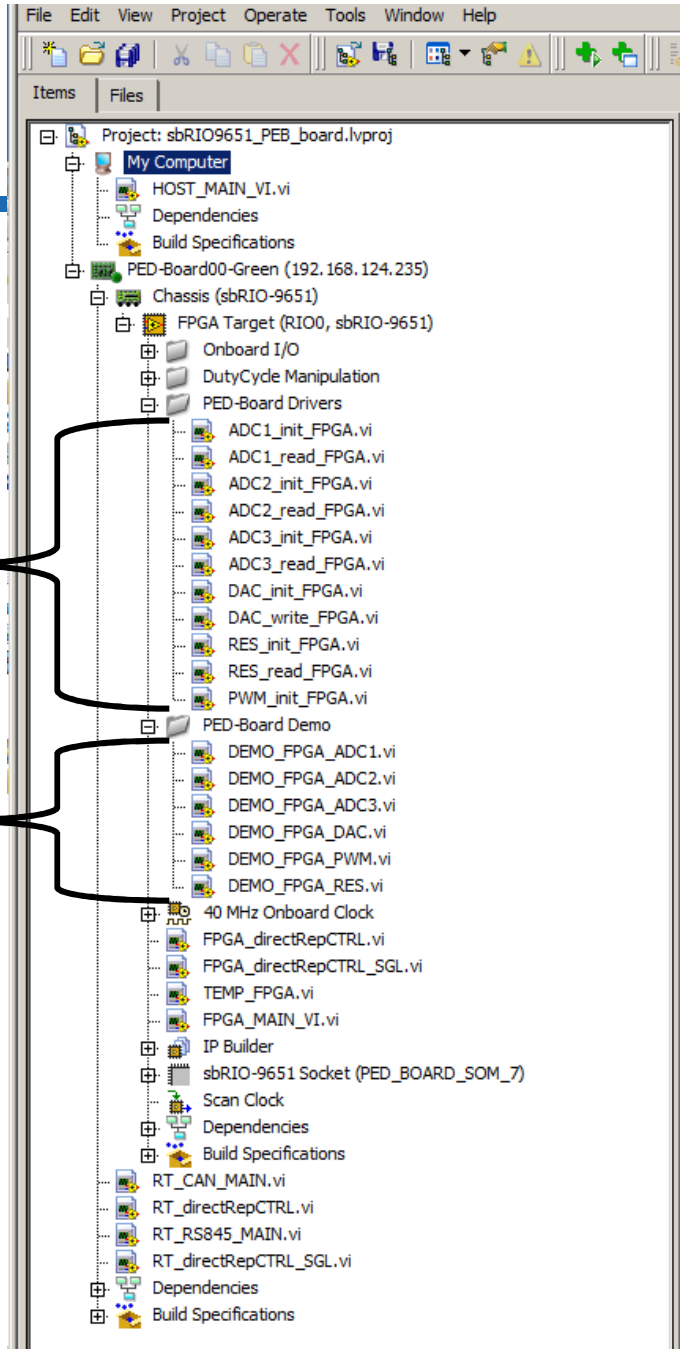
just add power

LabVIEW PROJECT EXAMPLE

PED-Board PERIPHERALS DRIVERS

PED-Board PERIPHERALS DEMO PROGRAMS



Examples and demo projects can be downloaded from

www.ped-board.com/projects

PED-Board
just add power

Recommended classes

- ✓ LabVIEW Core 1
- ✓ LabVIEW Core 2
- ✓ LabVIEW Real-Time 1
- ✓ LabVIEW Real-Time 2
- ✓ LabVIEW FPGA

} LabVIEW Embedded

http://sine.ni.com/tacs/app/main/p/ap/ov/lang/en/fmid/498

**Classroom or online courses*

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