How to Configure Your Target PC to Run Standalone xPC

Introduction

Up until now, you've been running xPC in a Host-Target mode. You need a Host computer to build and start/stop you model. In StandAlone xPC, the Target PC runs completely autonomously. The model is no longer downloaded from the host, but is stored on the CF boot disk. When the computer starts, the model begins running automatically, with an indefinite stop time.

What You Need:

- PC/104 PC
- Workstation w/ Matlab
- CompactFlash Card Reader/Writer
- CompactFlash card

Before You Start

- You will need a model to build and run on the PC/104 PC in standalone mode. In this document we assume this model to be named "test.mdl"
- The CF cards should be pre-loaded with xPC and are labeled with their unique IP address. The contents of these disks are as follows:

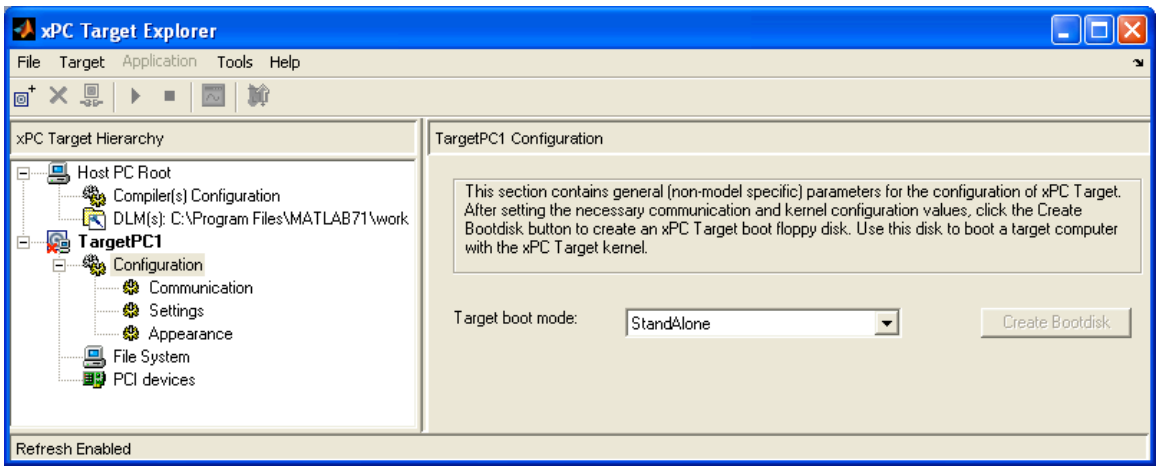
  C:>
  \autoexec.bat - runs the DOS command "xpcboot xpctgo16.rtb" at boot
  \xpcboot.com - the program that boots xPC
  \xpctgo16.rtb - holds the kernel and system configuration info (IP)

- Your version of Matlab should have the Embedded Option enabled. You can check this by typing "ver" at the Matlab prompt. This will list all of the installed toolboxes and you should see "xPC Target Embedded Option" near the bottom of the list.
- Your CF card reader/writer should be attached (usually by USB) and operational.

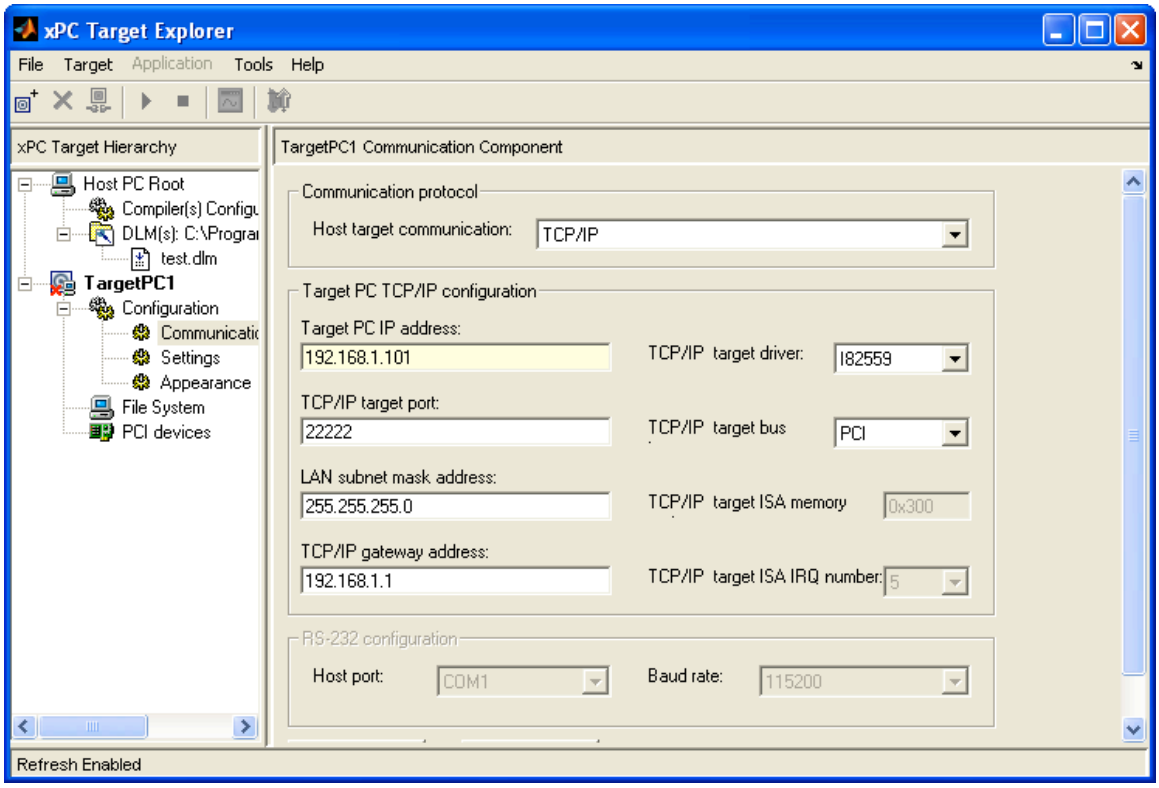
Procedure

- **Instruct the Host PC to compile the model for StandAlone xPC**

1. Open xpcexplr
2. Click on TargetPC1\Configuration in the list on the left.
3. Change the Target Boot Mode to StandAlone



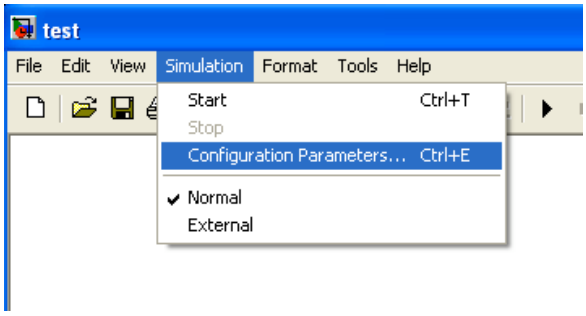
4. Click on TargetPC1\Configuration\Communication
5. Edit the Target PC IP address so that it matches the one printed on your CF card.



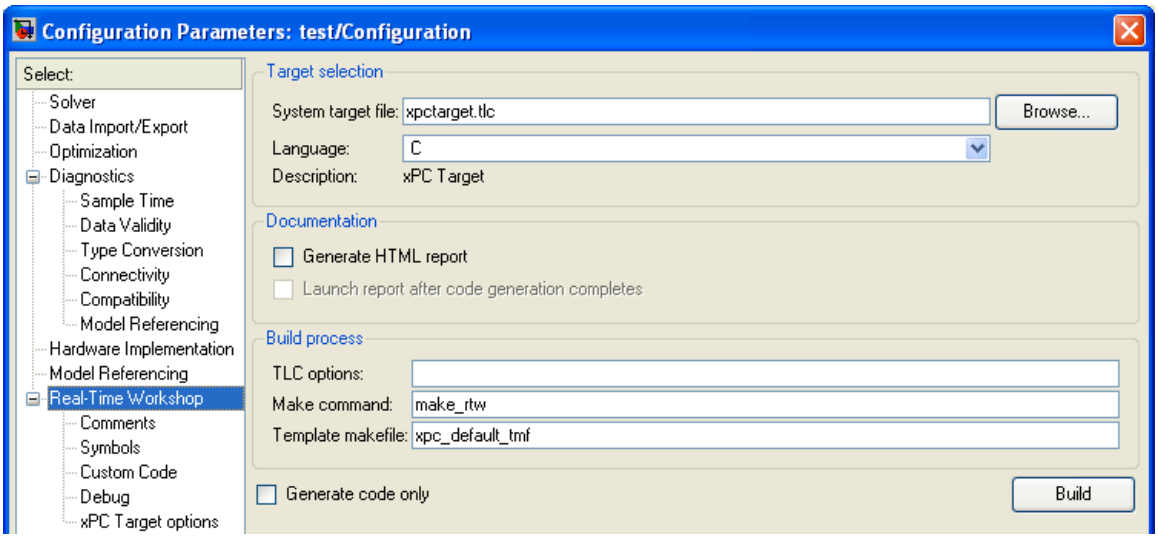
6. Click Apply and close xpcexplr

- **Configure and Build the Model**

1. Open Simulation \ Configuration Parameters from the Simulink model menu.



2. In the Real-Time Workshop menu, make sure the System target file is set to "xpctarget.tlc"



3. Click OK and exit the dialog.
4. Build the model (Ctrl+B)
5. When complete, the matlab window should say:

```
### xPC Target StandAlone application test.rtb in directory test_xpc_emb created
### Successful completion of xPC Target build procedure for model: test
```

- **Copy the Boot Files to the CompactFlash Card**

1. Insert the xPC compact flash disk into the CF reader/writer.
2. A window will pop up showing the contents of the disk.
3. Now, open Windows Explorer or My Computer in another window and go to the Matlab Work folder. Usually it is C:\Program Files\Matlab71\work
4. You will see lots of files created by Matlab and by other users in this folder. As the compiler said above, it created a directory called "test_xpc_emb." Open this directory.
5. The contents of this directory are as such:

   C:\Program Files\Matlab71\work\test_xpc_emb

\autoexect.bat - runs the DOS command “xpcboot test.rtb” at boot
\test.rtb - contains the xpc kernel AND your model
\xpcboot.com

6. Copy “test.rtb” from the “test_xpc_emb” folder to the CF disk.
7. Right-click on the autoexec.bat file on the CF disk and select Edit. This opens a notepad editor.
8. Change the autoexec.bat file to run the standalone file instead of the regular one. The file should look like:

```
xpcboot test.rtb
```

9. Save the autoexec.bat file and remove the CF disk from the reader/writer. It should now boot the PC/104 stack into StandAlone mode and begin running your model immediately.

- **Change the CF disk to boot normally again**

1. Insert the CF disk into the CF reader/writer.
2. A window should pop up showing the contents of the disk.
3. Right-click on the autoexec.bat file and select Edit
4. Change the file to read:

```
xpcboot xpctgo16.rtb
```

5. Save the file and remove the CF disk.