



Install Avnet Board Definition Files in Vivado 2014.2, 2014.3 or 2014.4

24 February 2015

Version 1.5

Overview

The Vivado® Design Suite allows you to create projects based on specific development boards. When you select a specific board, Vivado design tools enable additional designer assistance as part of its IP customization for IP integrator designs. For more information about this capability, please refer to the following Quick Take video.

<http://www.xilinx.com/training/vivado/using-vivado-with-xilinx-evaluation-boards.htm>

Objectives

This document describes how to install Avnet Board Definition files so that the Avnet boards become visible in Vivado Design Suite 2014.2, 2014.3, or 2014.4.

Software Requirements

The software used to test the procedures outlined in this document is:

- Windows-7 64-bit
- Xilinx Vivado 2014.2, 2014.3, or 2014.4

© 2015 Avnet. All rights reserved. All trademarks and registered trademarks are the property of their respective owners. All specifications are subject to change without notice.

NOTICE OF DISCLAIMER: Avnet is providing this design, code, or information "as is." By providing the design, code, or information as one possible implementation of this feature, application, or standard, Avnet makes no representation that this implementation is free from any claims of infringement. You are responsible for obtaining any rights you may require for your implementation. Avnet expressly disclaims any warranty whatsoever with respect to the adequacy of the implementation, including but not limited to any warranties or representations that this implementation is free from claims of infringement and any implied warranties of merchantability or fitness for a particular purpose.

Instructions

1. This installation will supersede the *microzed* board definition that comes pre-loaded with Vivado 2014.x. The first recommended step is to remove this board definition, although it is not required. Browse to the following location in your Vivado installation.

```
installdir\Vivado\2014.x\data\boards\board_parts\zynq
```

2. Delete the *microzed* directory.

You now have two options for installing the Avnet Board Definition files. Choose only one of the following:

- Option 1: Install into the Vivado installation
- Option 2: Install into a User Repository

Option 1: Install into the Vivado installation

This is the quickest option, but it is not recommended by Xilinx. Use at your own risk.

1. The provided archive has the following structure:

```
boards\board_parts\zynq\<board_name>\1.0\<board_files>
```

2. Extract the archive to the following location.

```
installdir\Vivado\2014.x\data
```

3. Now browse to the following location. The screenshot below shows the contents of this directory after the installation of the MicroZed 7010 and 7020 boards and PicoZed 7010, 7015, 7020, and 7030 boards.

```
installdir\Vivado\2014.x\data\boards\board_parts\zynq
```

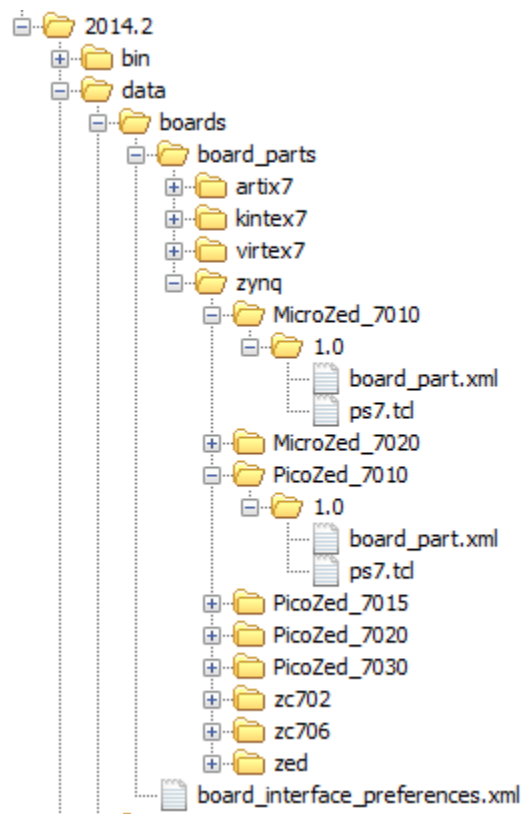


Figure 1 – Xilinx Install After Extraction of Definitions

Option 2: Install Into a User Repository

The second option allows you to install the board definitions to any location of your choosing. This method is useful if you do not have write access to the Xilinx tool install. The disadvantage is that it requires an additional command to point the tools to your repository.

1. Extract the archive to a location of your choosing. This document and the included `init.tcl` file will use `C:/AvnetBoards` for the path. You will need to modify the instructions and edit the `init.tcl` file to match your location. When editing the TCL file, be sure to use the forward slash `/` for the path.
2. Note that this location will have a `boards` sub-directory as shown below.

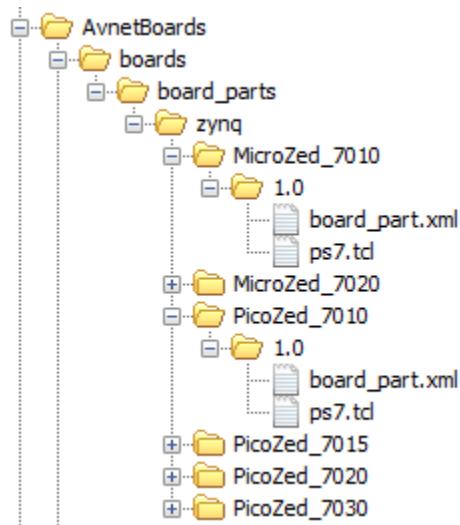


Figure 2 – Board Definition Files Extracted to a User Repository

To make this User Repository visible to Vivado, you must either issue a command each time you launch Vivado, or you can set up a permanent initialization TCL that is read by Vivado each time it launches.

3. Set the following parameter either in your “`init.tcl`” file or as the first command after the Vivado integrated design environment (IDE) opens. Notice the direction of the `'` forward slash. A backward slash will be accepted, but the path will not be registered correctly.

```
set_param project.boardPartRepoPaths C:/AvnetBoards
```

Setting this parameter in the Vivado TCL Console is shown below.

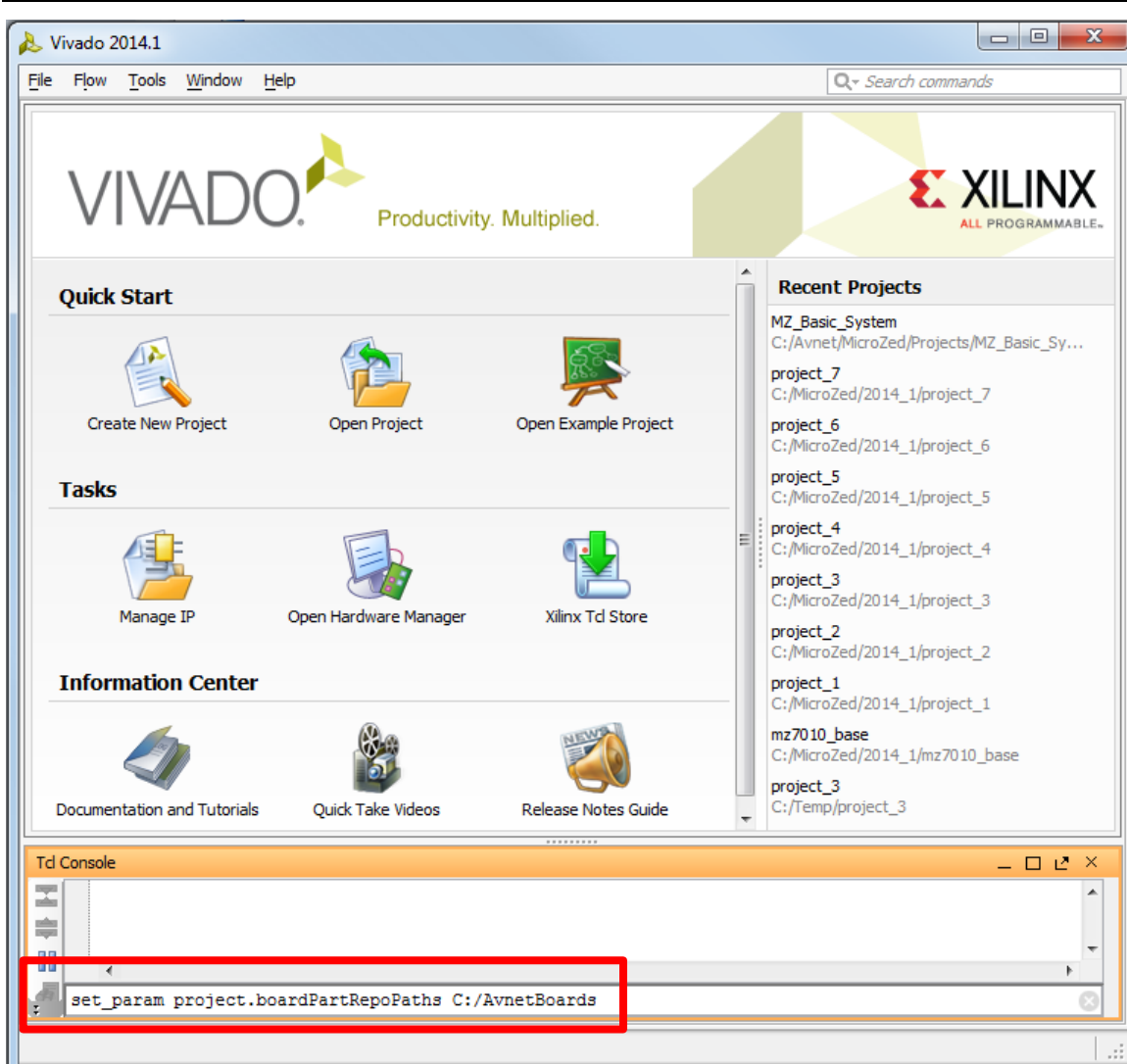


Figure 3 – Issuing the RepoPaths Command in the TCL Console

4. If you choose to use the init.tcl file method, then you will also need to add the following as the first line in your init.tcl:

```
set_param project.boardPartRepoPaths.editable true
```

A working init.tcl file is provided in the archive with this tutorial.

Details about the `init.tcl` file are included in UG835 *Vivado Design Suite Tcl Command Reference Guide*. UG835 describes where to put the `init.tcl` file.

5. If you choose to use the `init.tcl` method, place this file
 - a. In the software installation:
`installdir/Vivado/version/scripts/init.tcl`
 - b. In the local user directory:
 - i. For Windows 7:
`%APPDATA%/Roaming/Xilinx/Vivado/init.tcl`
 - ii. For Linux:
`$HOME/.Xilinx/Vivado/init.tcl`

The initialization TCL is very convenient. Be aware that if you use the `installdir`, this will affect all users of that installation. If you use your local user directory, this will affect all versions of Vivado that you are using and may generate a benign error when launching an older version. For example, using the local user repository, a launch of Vivado 2013.4 produces the following error. Simply press **Continue** to dismiss this error.

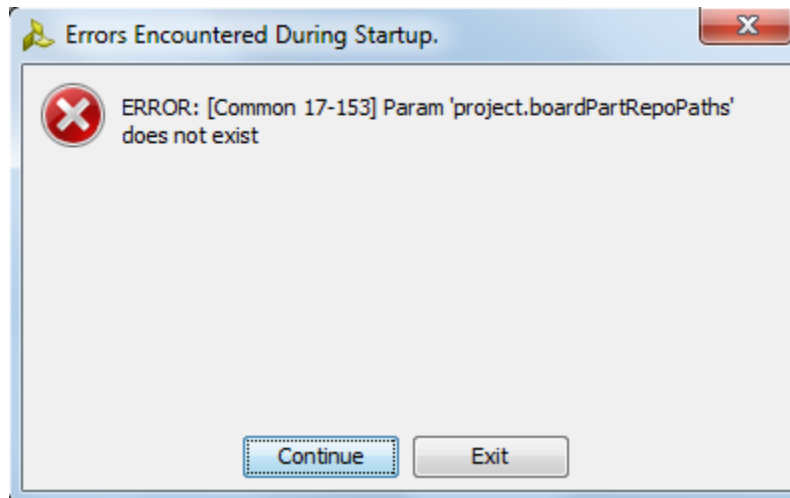


Figure 4 – Vivado 2013.4 Error When Sourcing 2014.x `init.tcl`

Test in Vivado

Regardless of which method you choose, the new boards should now be visible in Vivado 2014.x for vendor **em.avnet.com**. To test this out, do the following.

1. Launch Vivado 2014.x
2. Select **Create New Project**.
3. Click **Next >** to get started.
4. Set the project name and location. Press **Next >**.
5. Click **Next >** four more times.
6. At the **Default Part** screen,
 - a. Click **Boards** under *Specify*.
 - b. Click **em.avnet.com** under *Vendor*.

The options should appear as shown. Note that the *ZedBoard Rev D* is included with the Vivado 2014.x default installation. The *MicroZed* and *PicoZed* entries were added with this procedure, assuming both archives were extracted. MicroZed Revisions B, C, F-01, or F-06 as well as both Commercial and Industrial temperature grade MicroZed boards are compatible with the Rev F entries. PicoZed Revision B is the first production release.

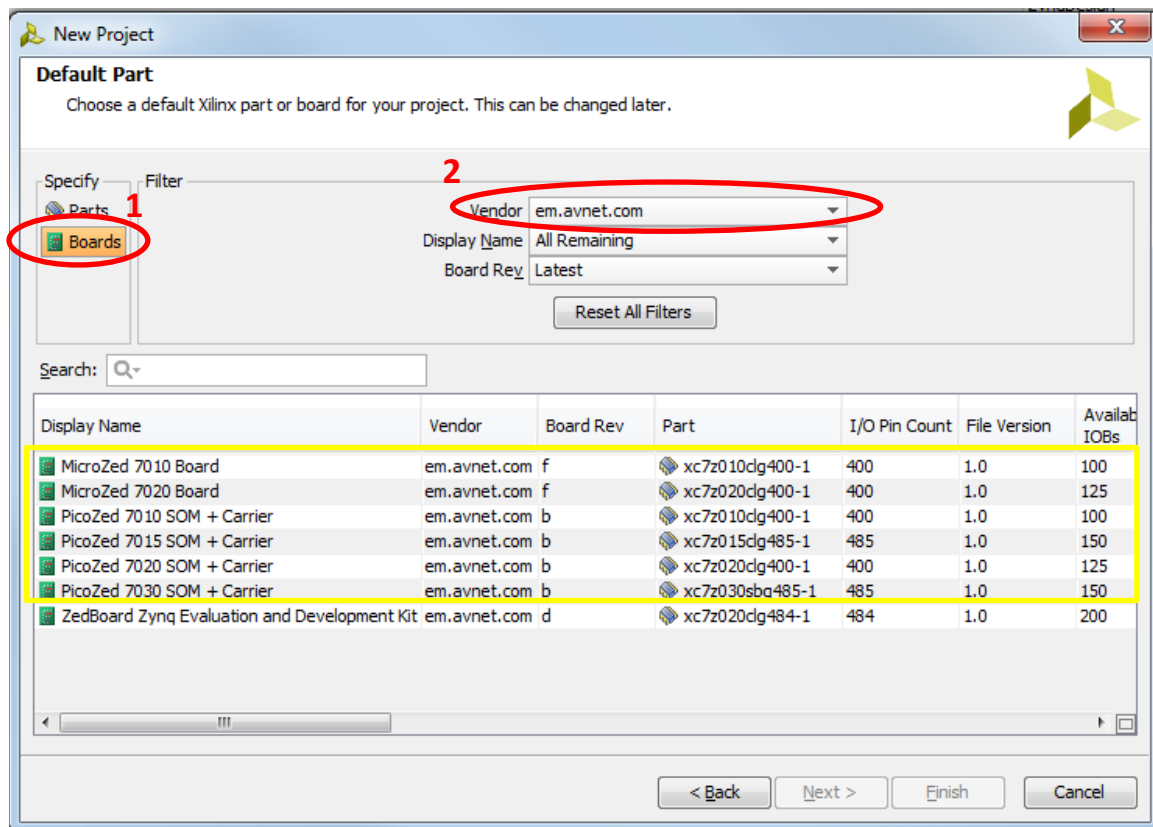


Figure 5 – MicroZed and PicoZed Boards Visible in Vivado 2014.x

Revision History

Date	Version	Revision
31 May 2014	1.0	Initial Avnet release
02 Jun 2014	1.1	Removed option to use init.tcl due to a synthesis error in Vivado 2014.1. Added option to set BoardRepo parameter manually.
09 Jun 2014	1.2	Added init.tcl option back in with inclusion of extra parameter that circumvents the previous cause of the synthesis error.
11 Jun 2014	1.3	Update for Vivado 2014.2
10 Oct 2014	1.4	Added PicoZed
24 Feb 2015	1.5	Updated document to support 2014.3 and 2014.4. Updated PicoZed ps7.tcl files to add the eMMC CD and correct the GEM0 ethernet reset.