

Preparing System ACE collections for the CMM.

Ian Brawn, 21.8.7.

These instructions are for Impact version 9.1.03i. Other versions of the tool may have a slightly different interface.

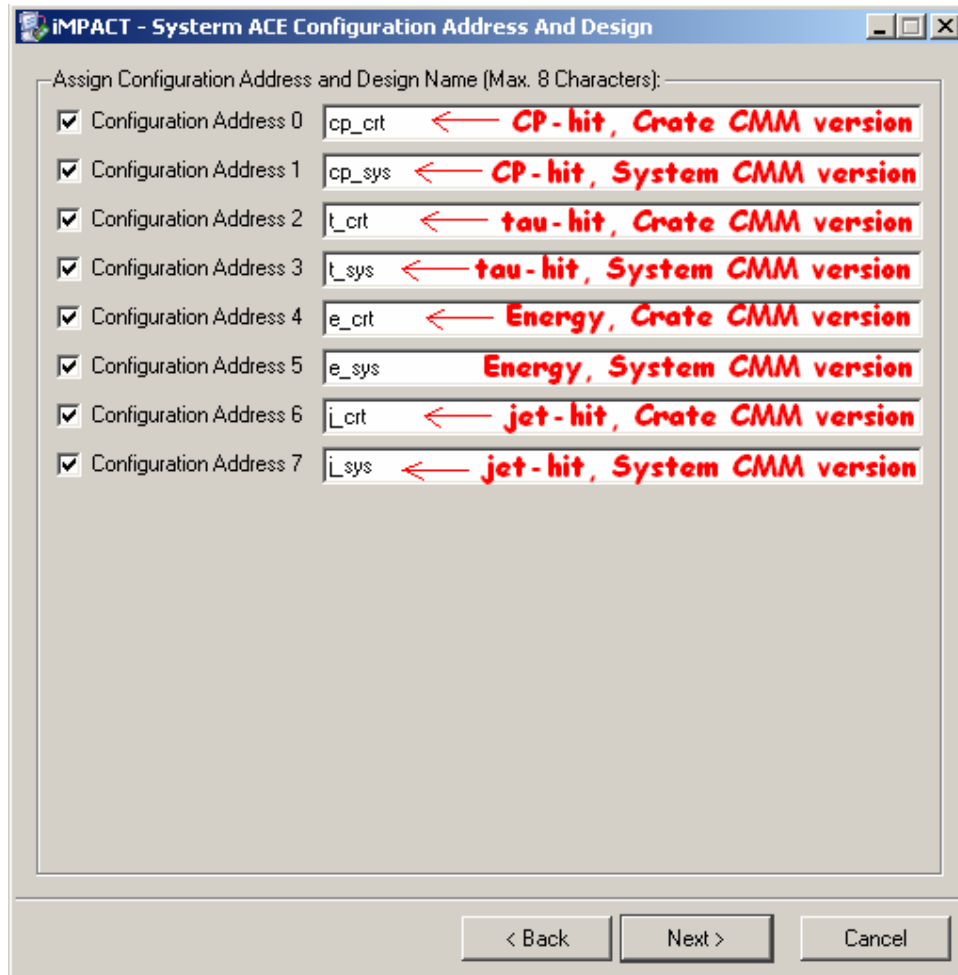
Open Impact and double-click the SystemACE icon in the top left window, to prepare a SystemACE collection. In the resulting dialogue boxes leave the options as default, except for the following:

1st dialogue box: select Expert mode.

2nd box: select file size: Generic

3rd box: enter the name and location of your collection

4th box, select and name the designs you wish to generate, like this:

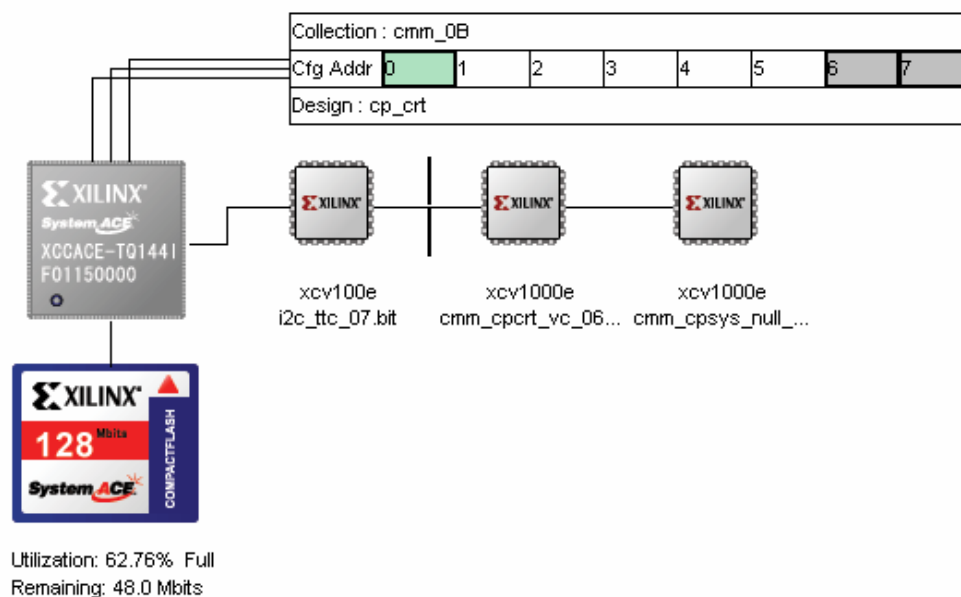


Note that 'design' here means the set of bit files required to configure the CMM in one of its possible versions. A collection need not include all of the possible designs shown above.

The 5th dialogue box just allows you to check what you've added. After accepting this you'll be asked to add files to each design in turn. The following rules and guidelines apply to the building of CMM designs.

- The order of FPGAs in the CMM SystemACE chain is this:
 1. I2C-TTC FPGA
 2. Crate CMM
 3. System CMM
 All devices in the chain must be added to a design – you can't programme subsections of the chain.
- The I2C-TTC FPGA always has the same firmware load: i2c_ttc_07.bit
- No dedicated tau-hit firmware exists as yet. Use the CP-hit firmware again (or modify the Xilinx.sys file if you know what you're doing).
- For the non-jet-hit versions of CMM firmware at least, the following naming conventions apply:
 - Bit files including the term cmm_e or cmm_cp are for the energy-CMM or CP-CMM (and currently tau-CMM) respectively.
 - Bit files including the term "crt" are for the Crate FPGA
 - Bit files including the term "sys" are for the System FPGA
 - Bit files including the term "_vc" or "_vs" are for the Crate-CMM or System-CMM version of the Crate FPGA respectively
 - Bit files including the term "_null" are for the Crate-CMM version of the System FPGA. Bit files for the System FPGA which do not include this term are for the System_CMM version of the System FPGA.

As an illustration of a design, the CP-hit, Crate-CMM design should look something like this:



When all the devices have been added, from the operations menu select “Generate File,” and find something else to do for the next few minutes. The required SystemACE file-structure will be generated.

Transfer the generated file structure to the flash card. The root directory of the card should contain the xilinx.sys file and a folder bearing the collection name.

Note that you can build these file structures manually, so you don’t have to re-build an entire collection if you’ve only changed one design, for example. If the folder and file names have not changed just paste the new *.ace files on top of the old and everything should work.

Note also that you can read and edit the xilinx.sys file in an ASCII editor, despite what the file itself may advise.