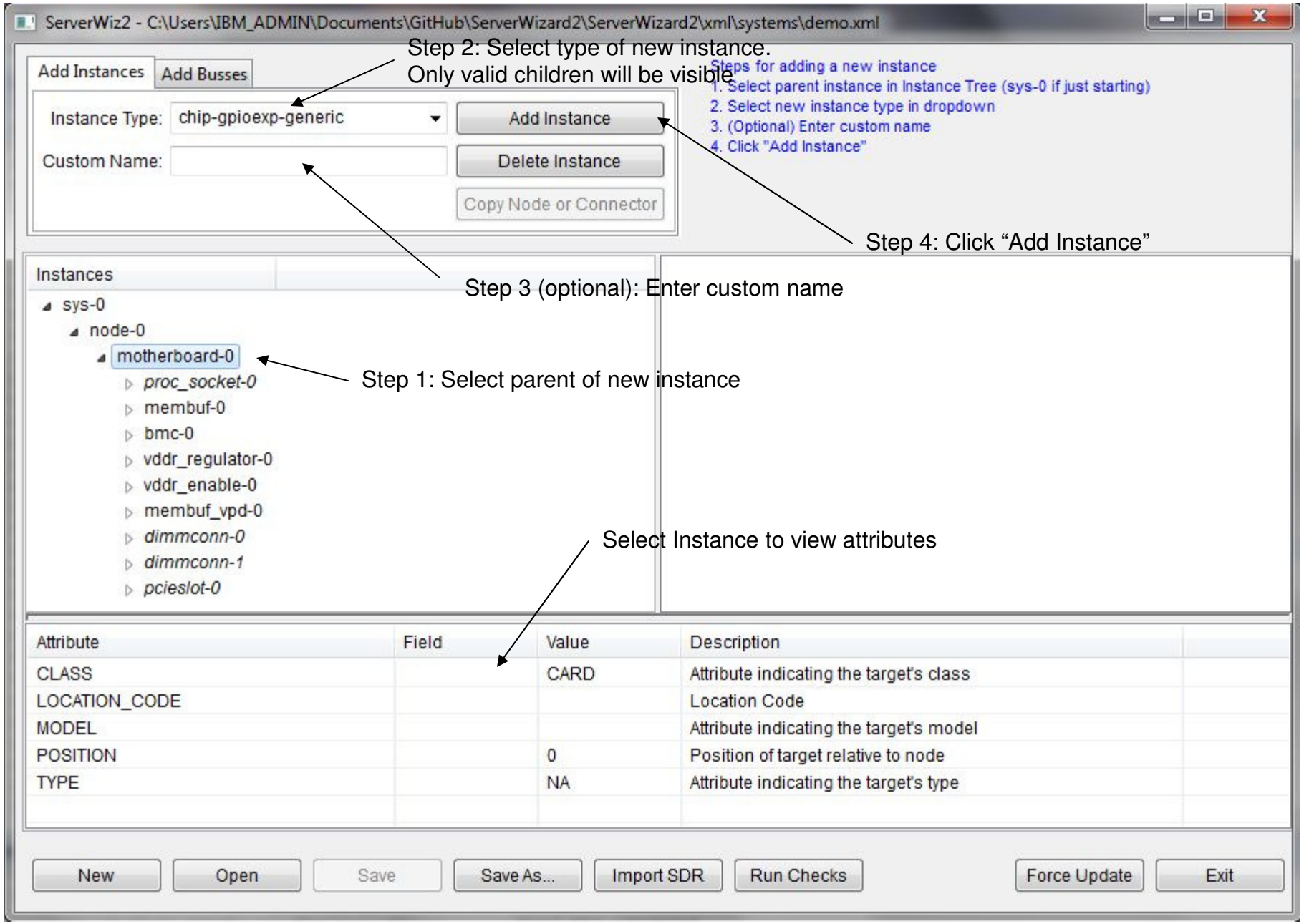
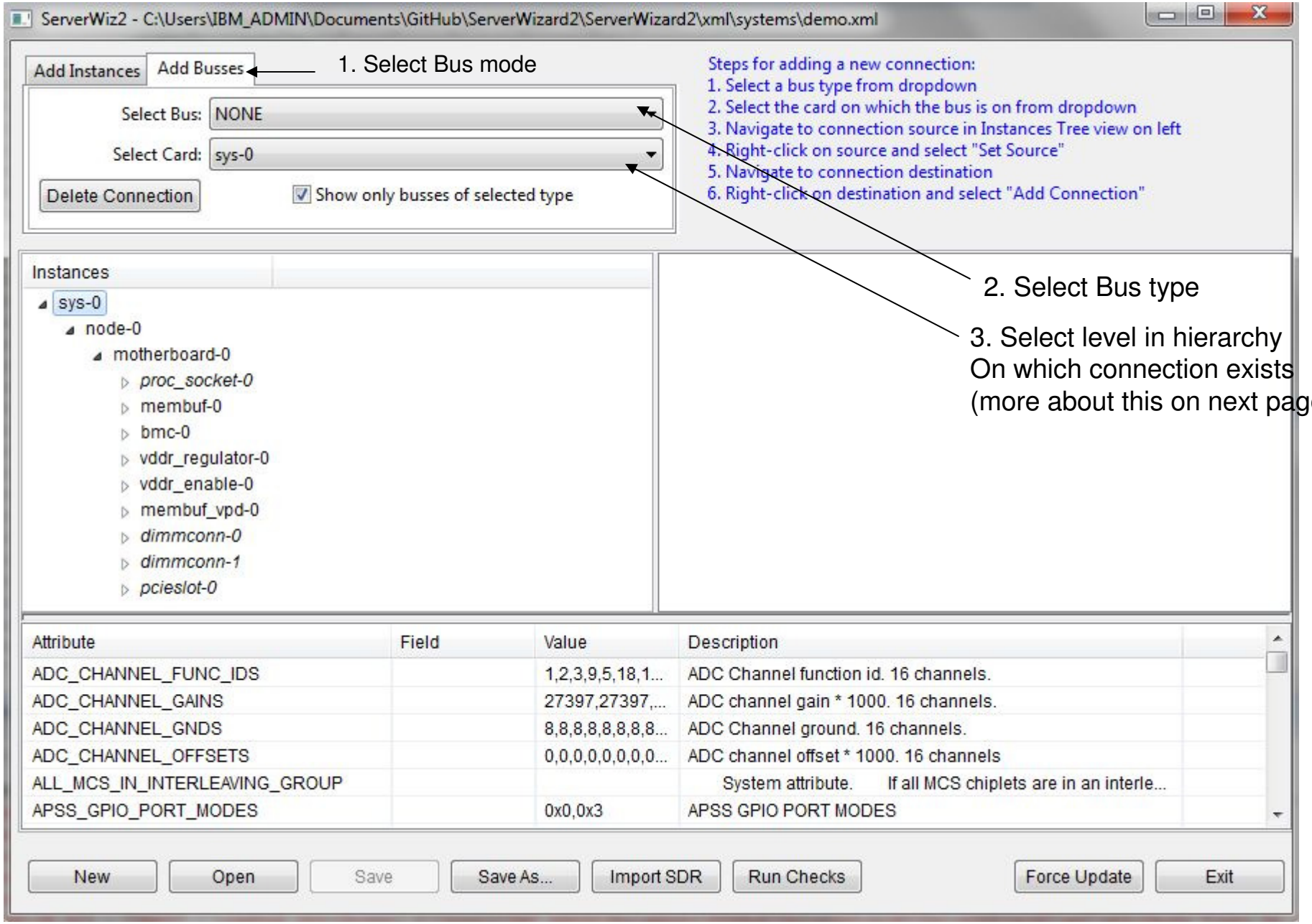
ServerWiz2 Overview

- Serverwiz2 is a hierarchically based XML editor that is targeted for representing a system topology.
- It has 3 primary concepts:
  - Instances
    - Node, card, connector, or chip
    - Chips can have units that specify subcomponents of that chip such as cores and bus interfaces
  - Busses/Connections
    - A connection between 2 units of 2 Instances
    - Connections are made at the level in the hierarchy where they exist in the real system
  - Attributes
    - Instances and Connections both have attributes
    - Attributes are variables that hostboot reads to direct the firmware

Instance Creation

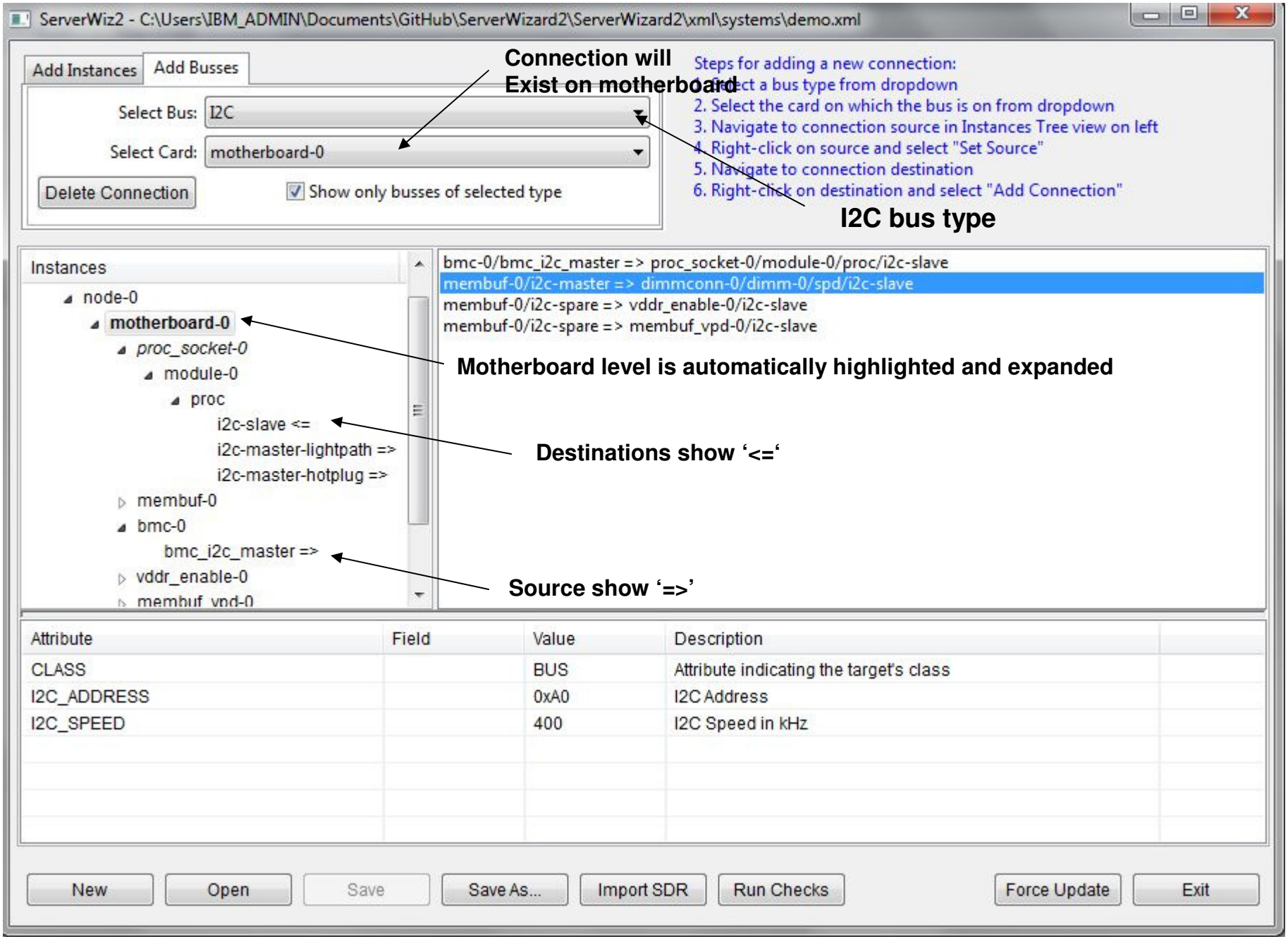


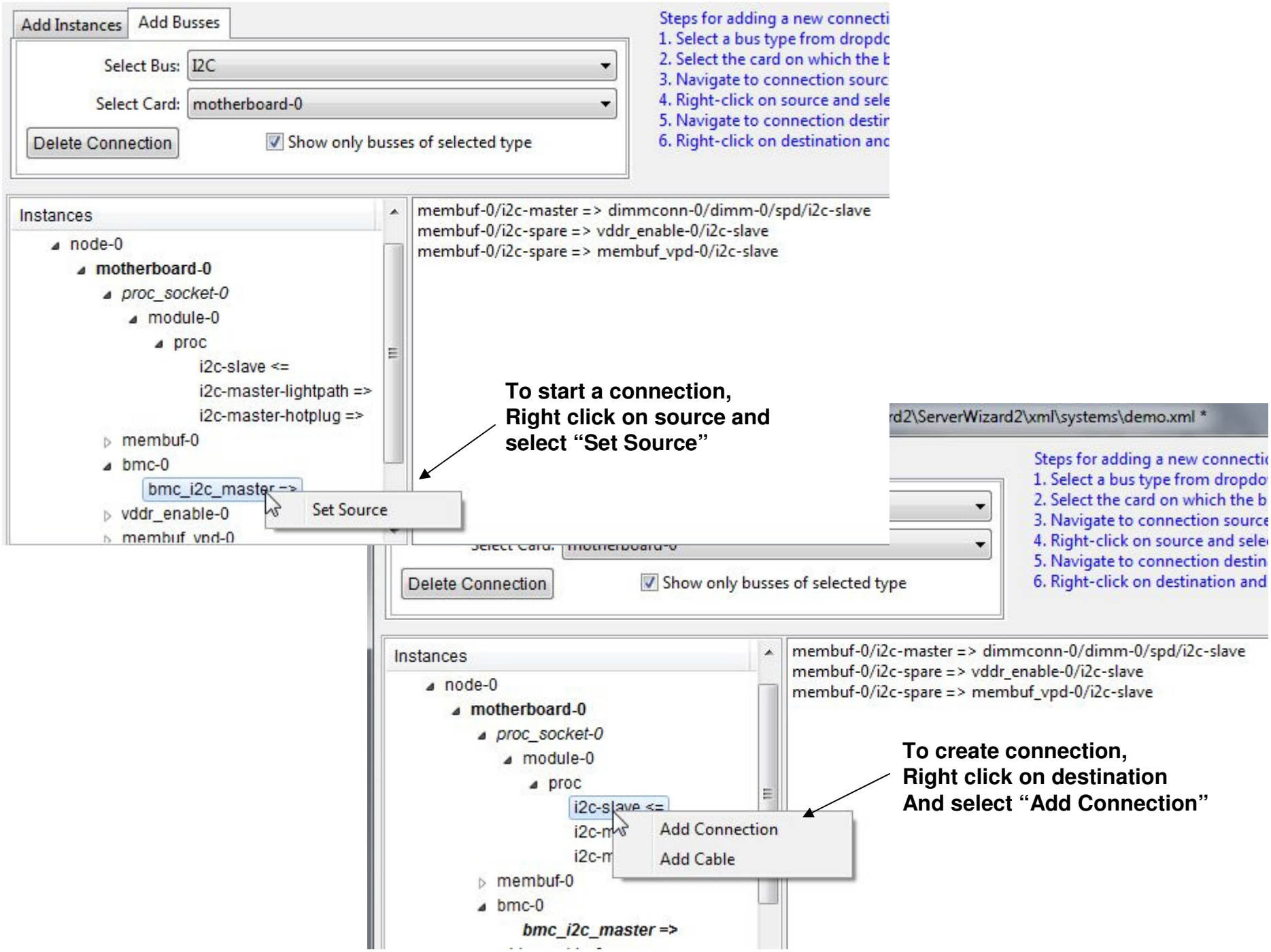
Connection Creation



Connection Hierarchy

- Connections must be created at highest common point in hierarchy or physically where wire exists. Here are some examples:
  - Simple single motherboard system
    - All connections are created at motherboard level so Selected Card = motherboard.
    - The motherboard is also obviously where the physical wires exist
  - System with memory riser cards
    - The DMI bus spans the motherboard and riser card
    - The motherboard level is selected because that is the highest common level in the hierarchy
  - Multi-node system with cables connecting nodes
    - System level is selected because that is highest common level in hierarchy


ServerWiz2 - C:\Users\IBM_ADMIN\Documents\GitHub\ServerWizard2\ServerWizard2\xml\systems\demo.xml
Add Instances
Add Busses
Connection will
Exist on motherboard
Steps for adding a new connection:
1. Select a bus type from dropdown
2. Select the card on which the bus is on from dropdown
3. Navigate to connection source in Instances Tree view on left
4. Right-click on source and select "Set Source"
5. Navigate to connection destination
6. Right-click on destination and select "Add Connection"
Select Bus:
I2C
Select Card:
motherboard-0
Delete Connection
Show only busses of selected type
I2C bus type
Instances
node-0
motherboard-0
proc_socket-0
module-0
proc
i2c-slave <=
i2c-master-lightpath =>
i2c-master-hotplug =>
membuf-0
bmc-0
bmc_i2c_master =>
vddr_enable-0
membuf_vpd-0
bmc-0/bmc_i2c_master => proc_socket-0/module-0/proc/i2c-slave
membuf-0/i2c-master => dimmconn-0/dimm-0/spd/i2c-slave
membuf-0/i2c-spare => vddr_enable-0/i2c-slave
membuf-0/i2c-spare => membuf_vpd-0/i2c-slave
Motherboard level is automatically highlighted and expanded
Destinations show '<='
Source show '=>'
Attribute
Field
Value
Description
CLASS
BUS
Attribute indicating the target's class
I2C_ADDRESS
0xA0
I2C Address
I2C_SPEED
400
I2C Speed in kHz
New
Open
Save
Save As...
Import SDR
Run Checks
Force Update
Exit


Add Instances
Add Busses
Select Bus: I2C
Select Card: motherboard-0
Delete Connection
Show only busses of selected type
Steps for adding a new connecti
1. Select a bus type from dropdc
2. Select the card on which the b
3. Navigate to connection sourc
4. Right-click on source and sele
5. Navigate to connection destir
6. Right-click on destination anc
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membuf-0/i2c-spare => vddr_enable-0/i2c-slave
membuf-0/i2c-spare => membuf_vpd-0/i2c-slave
Set Source
To start a connection,
Right click on source and
select “Set Source”
rd2\ServerWizard2\xml\systems\demo.xml *
Steps for adding a new connecti
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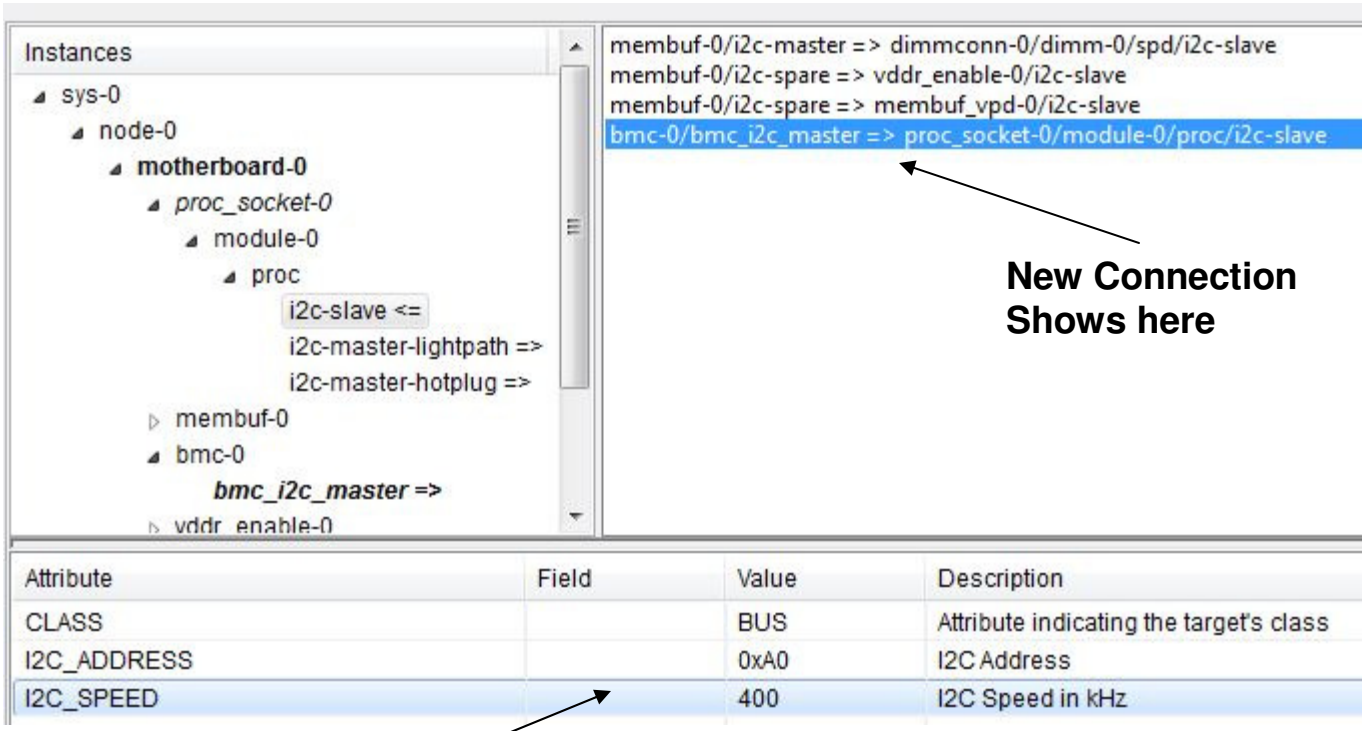
membuf-0/i2c-spare => vddr_enable-0/i2c-slave
membuf-0/i2c-spare => membuf_vpd-0/i2c-slave
Add Connection
Add Cable
To create connection,
Right click on destination
And select “Add Connection”



New Connection Shows here

Select connection to View attributes. For example, An I2C bus has an address and speed.

Minimum System Requirements

System is always top level

Node is always second level

A System typically has a main board or motherboard

Must have at least 1 processor socket and processor chip

Must have at least 1 memory buffer

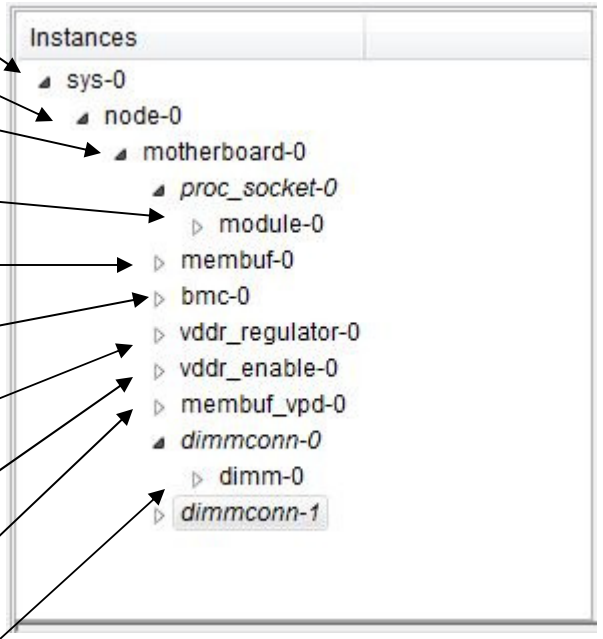
Must have 1 and only 1 BMC

Must have at least 1 VDDR regulator
(hostboot controls enable and must be aware of topology)

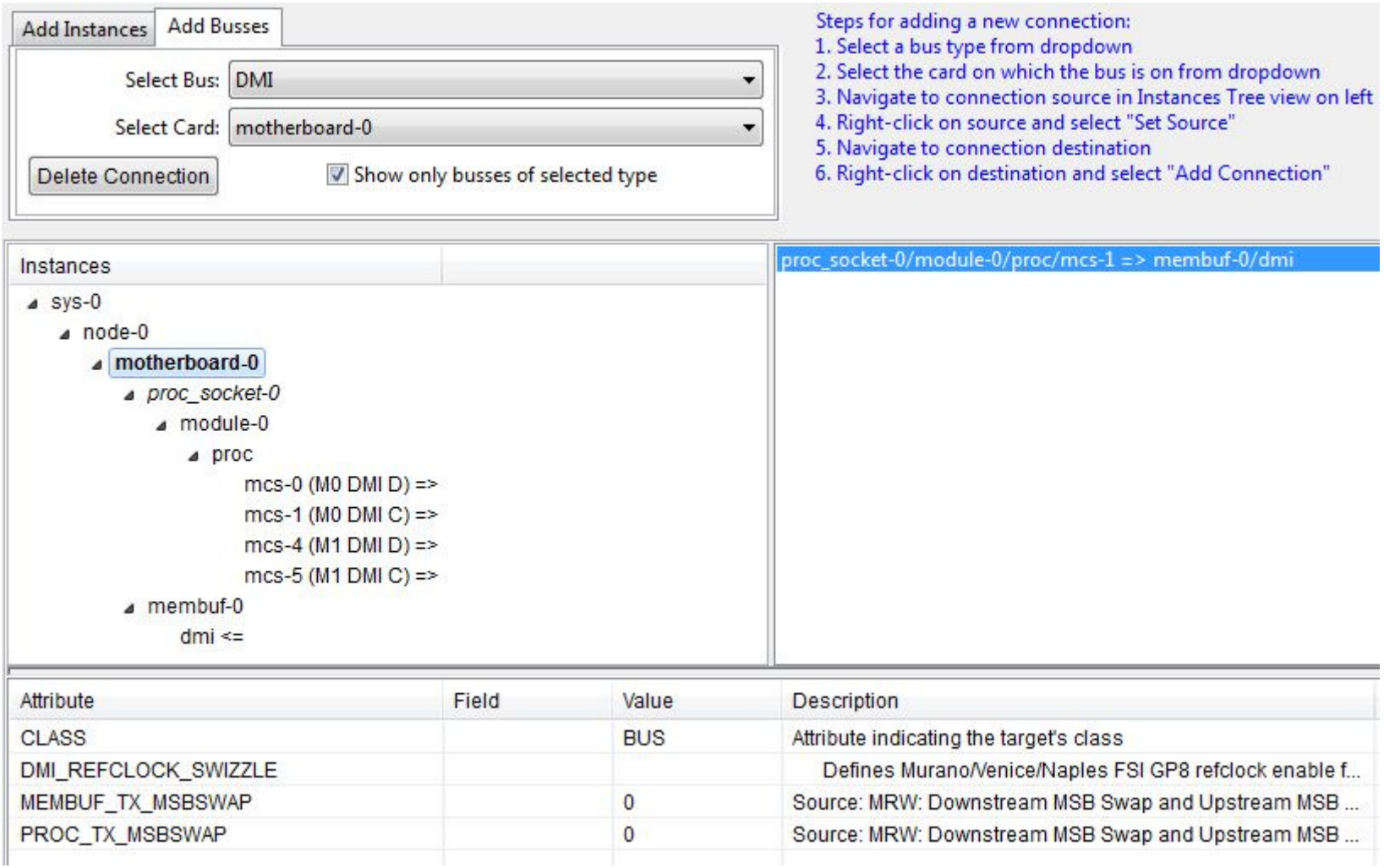
Must have at least 1 GPIO expander that controls VDDR regulator enable

Must have at least 1 VPD for storing memory wiring information

Must have at least 1 part of DIMM connectors and DIMMs

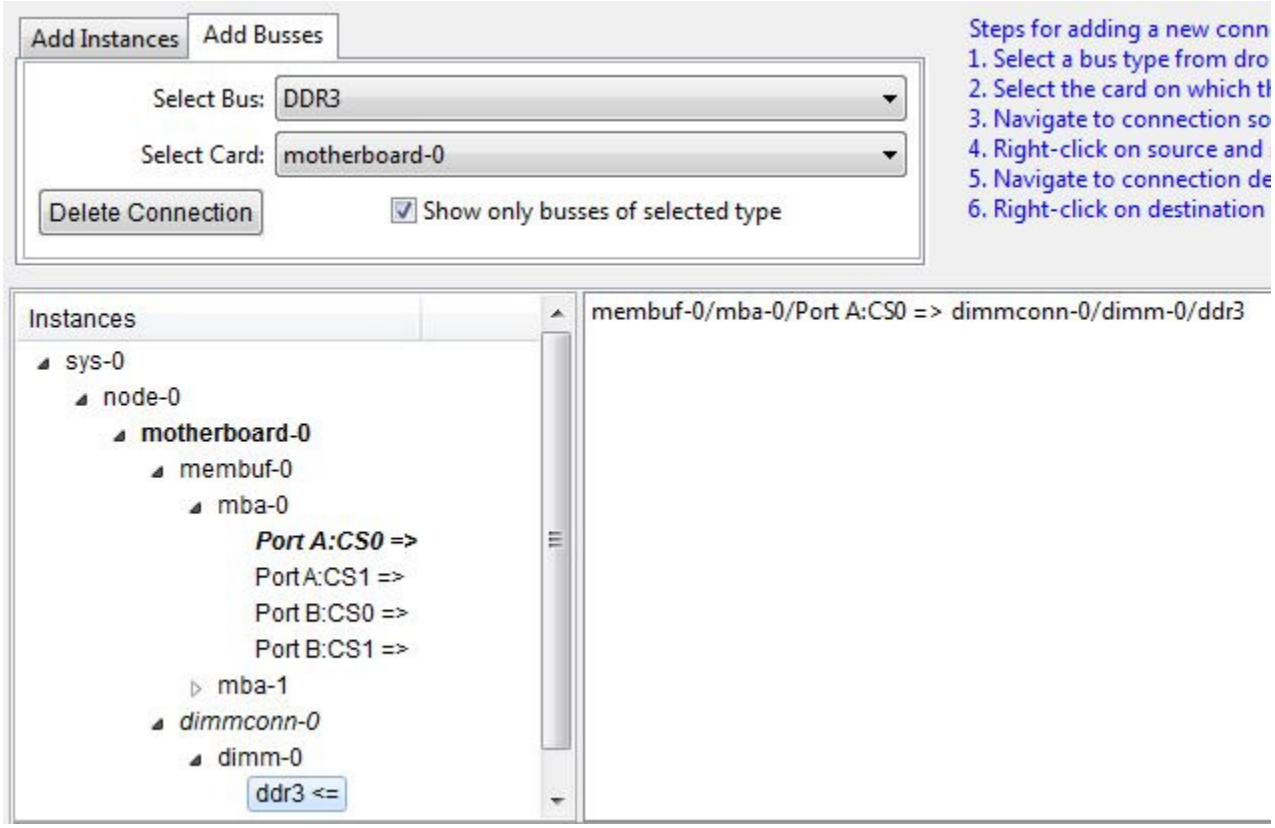


DMI



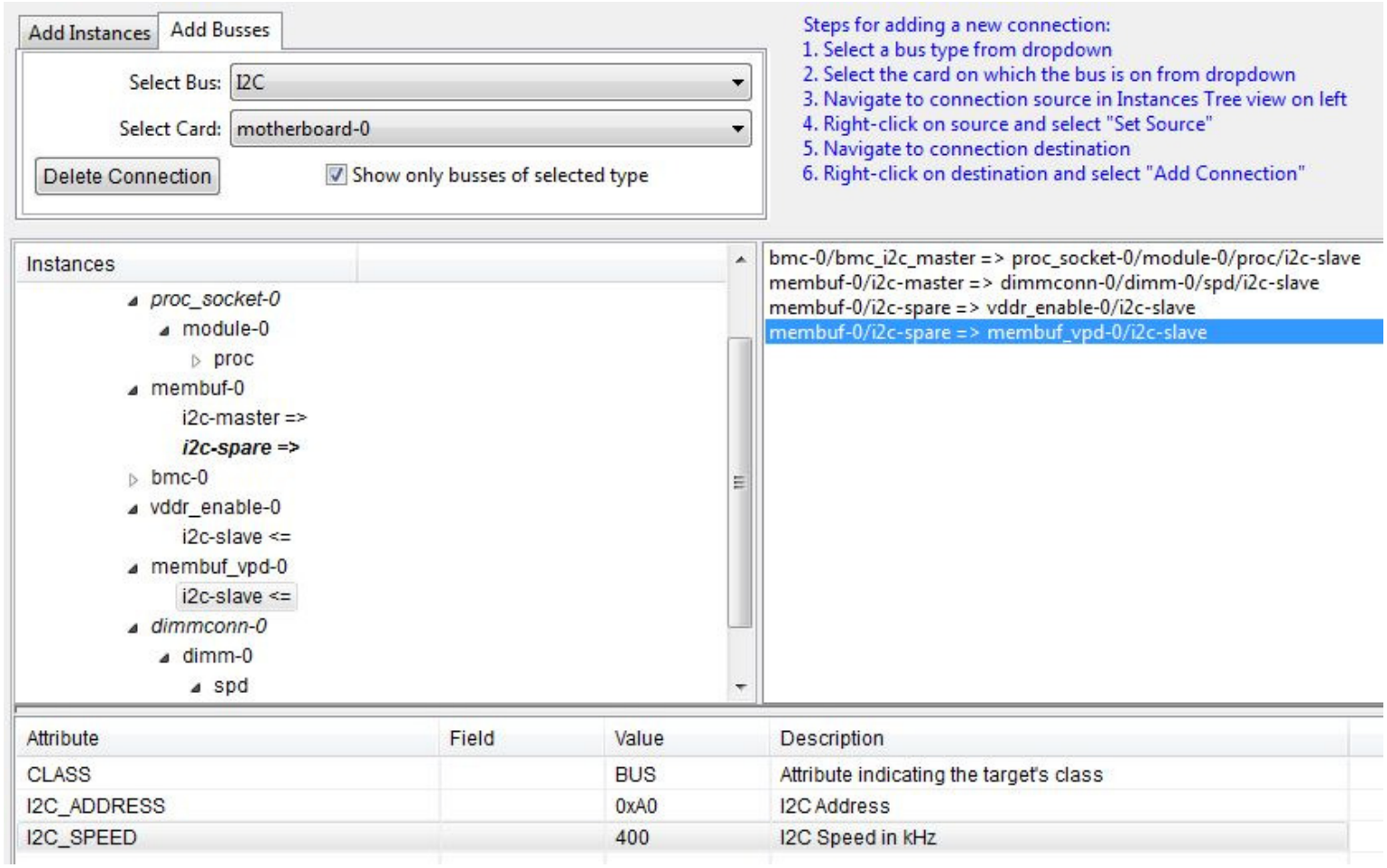
- Required Connections: All membuf's must have a DMI connection to a CPU
- The DMI name in the parenthesis match the schematic names
- If there is an lane reversal in the design, change the MSBSWAP attributes below to "1".

DDR



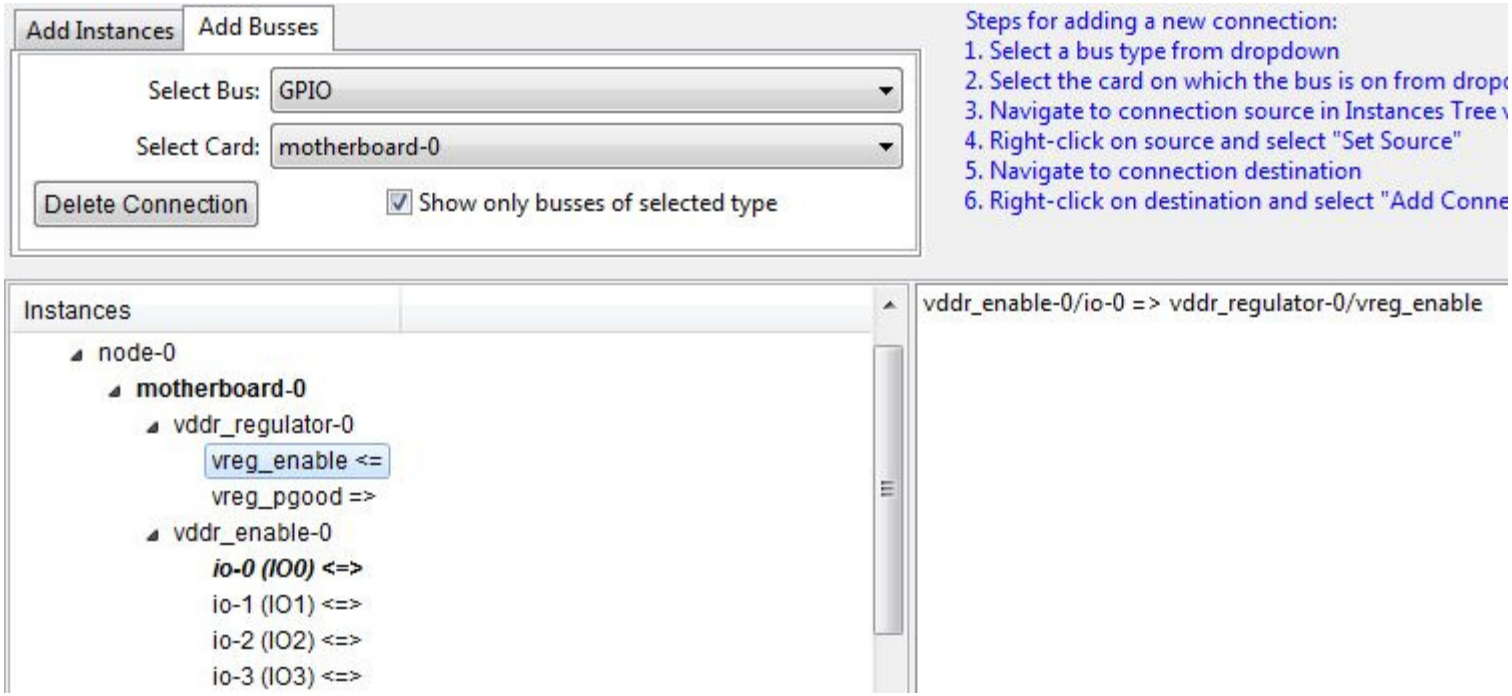
- Required Connections: All DIMMs must be connected to a membuf
- The names for the DDR ports match schematic names. Make sure DIMM naming convention and connections match schematic. It will make the I2C connections more straightforward.

I2C



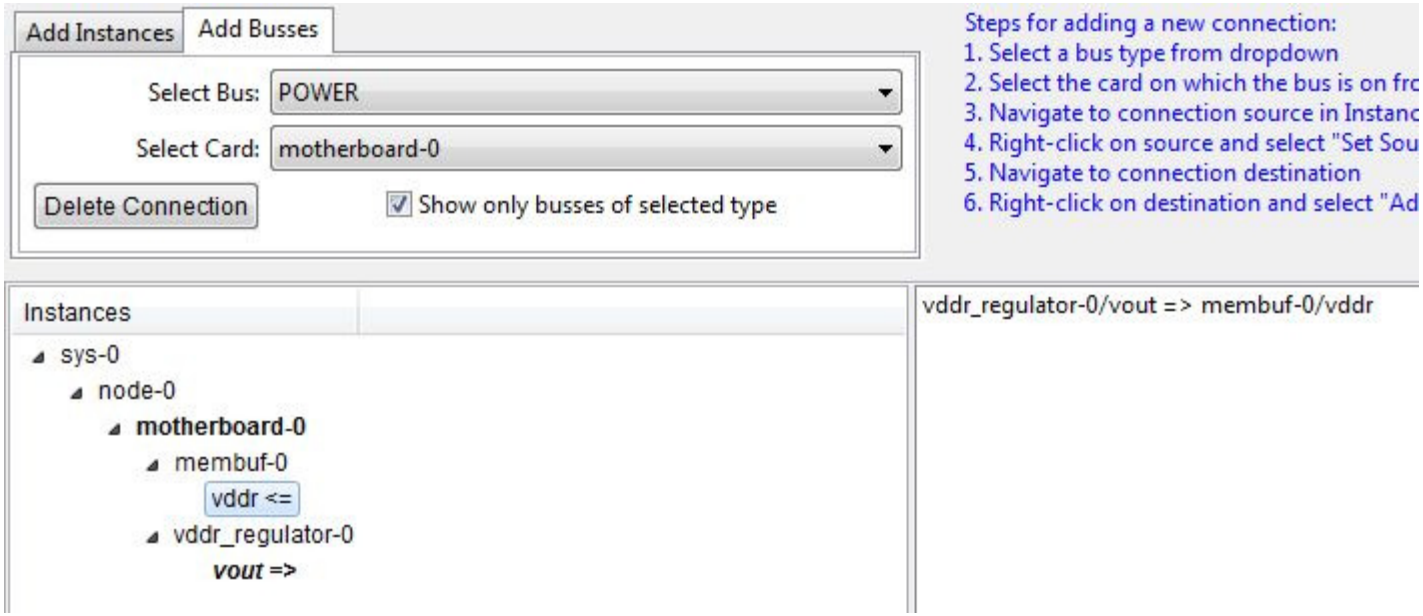
- Required connections:
  - BMC to CPU I2C slave for OCC communication
  - Membuf I2C connections to DIMMs SPD
  - Membuf I2C connection to GPIO expander to VDDR enable
  - Membuf or CPU I2C connection to VPD
- For I2C busses, make sure I2C_ADDRESS and I2C_SPEED attributes match the design

GPIO



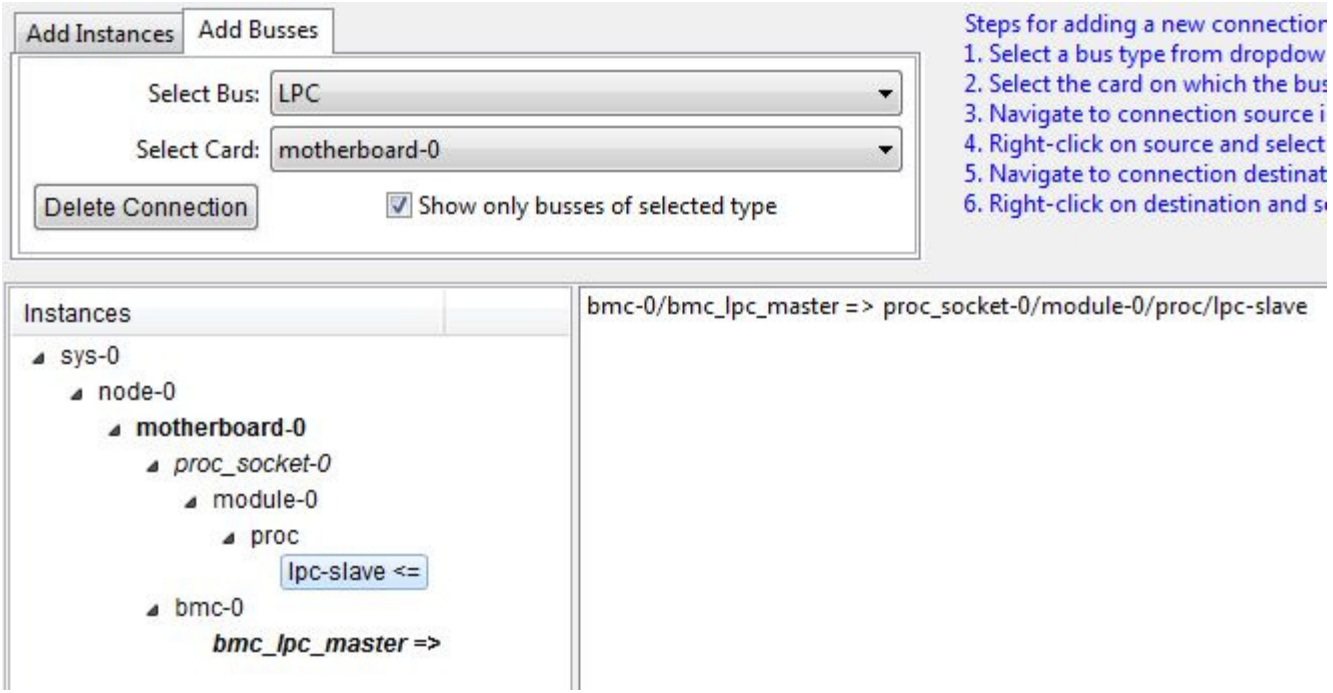
- Required Connection: GPIO expander that controls the VDDR regulator enable. The GPIO port # from GPIO expander must match design.

Power



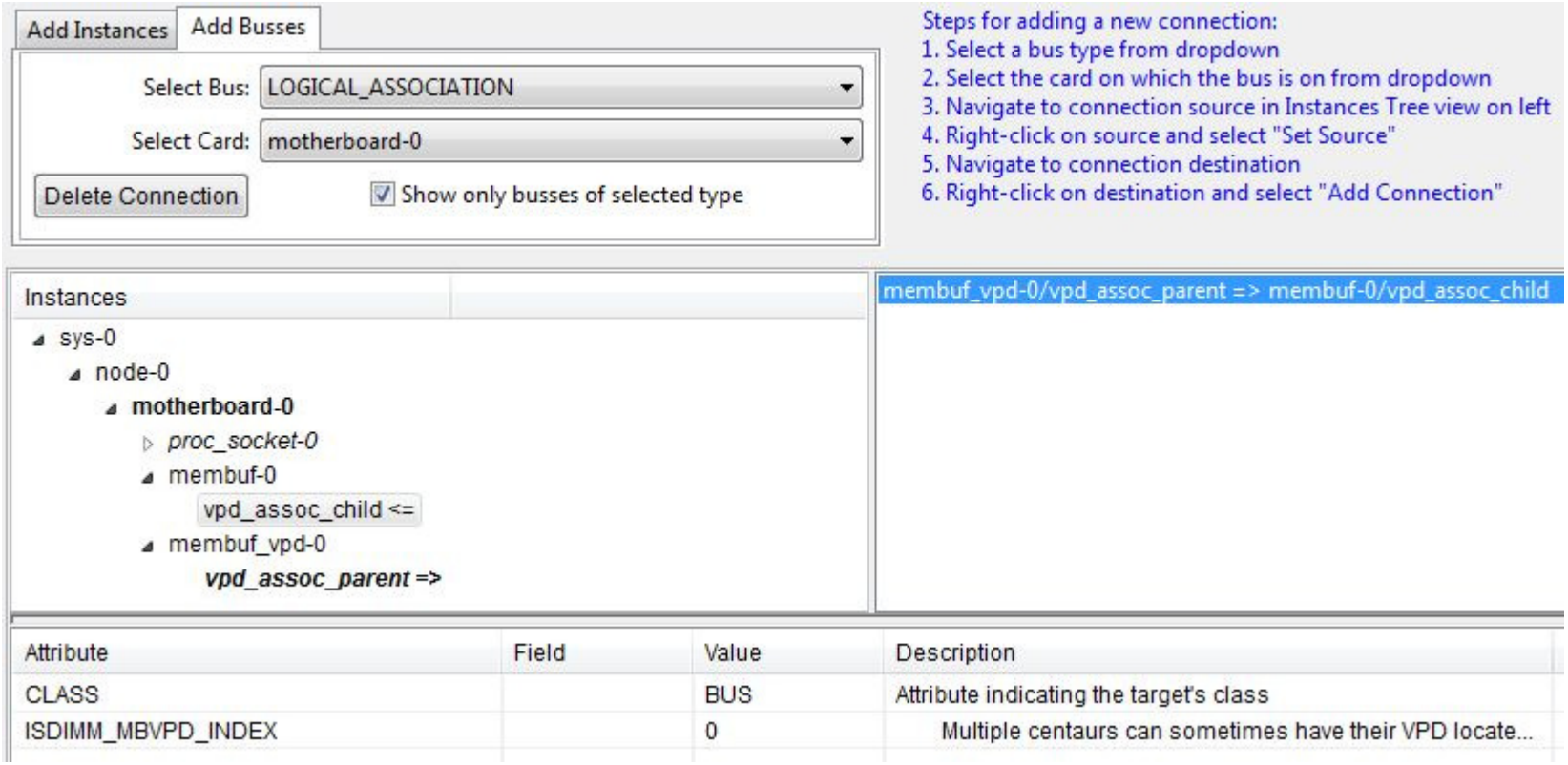
- Required Connections: VDDR regulator connection to membuf

LPC Bus



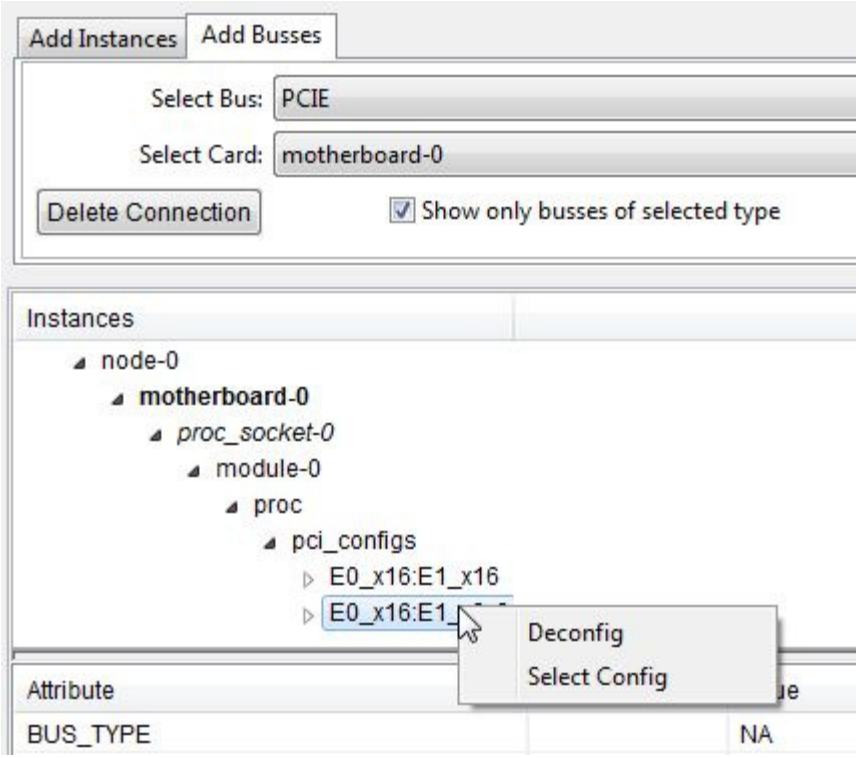
- Required connection: The LPC bus connection between the BMC and one of the CPU's tells Hostboot which CPU is the master.

Logical Association



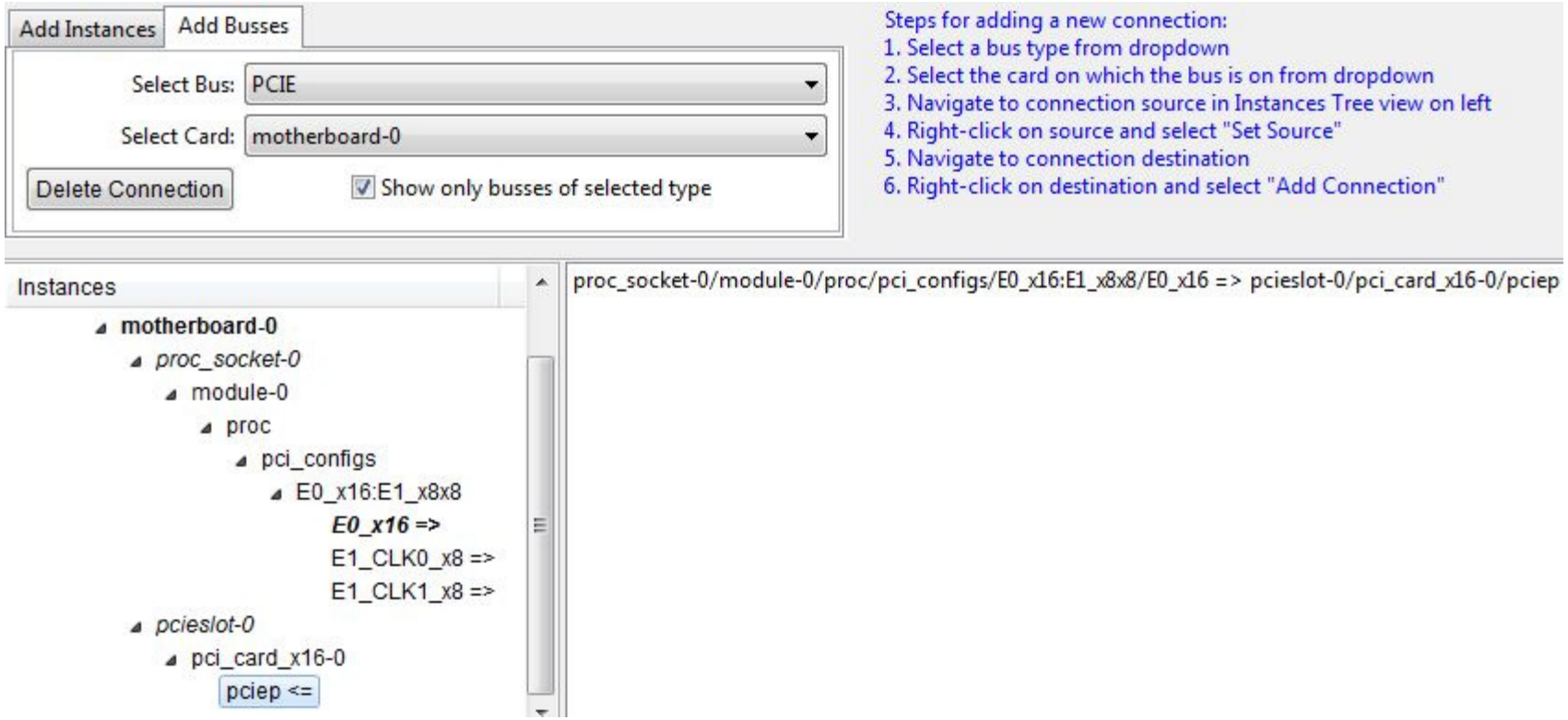
- Required connections: VPD that contains membuf wiring information connection to membuf
- This is a virtual connection that tells hostboot where the VPD exists for each membuf. The VPD can alternatively be attached to the CPU I2C master
- This logical association concept could be extended to FRU LED associations

PCIe



- The PCIe bus is unique in that it can be configured in several different ways. Under the “pci_configs” parent, you will see the various configurations. To choose one, right-click and select “Select Config”. The other configurations will be hidden. To make all configurations visible, right-click and select “Deconfig”.

PCIe



- Required Connections: None
- Here is an example where E0 is configured as a x16 and E1 is configured as 2 x8's.