

1 Parameters

c_p : Cost of an individual platform p

n_d : Number of designs per platform allowed (this could be expanded into an array if desired values vary by platform)

1.1 Block description

1.2 Graph description

n_b : Number of blocks of type b

$bw_{b \rightarrow c}$: Amount of communication required between blocks b and c

2 Variables

n_{pd} : Number of units that implement design d

n_p : For p in platforms, n_p is the total number of units used

c : Total cost of the system

w : Total power of the system

2.1 FPGA

$logic$: total amount of logic available

$logic_b$: amount of logic required by block b

$bram$: total amount of bram available

$bram_b$: amount of bram required by block b

$dsps$: total number of dsps available

$dsps_b$: number of dsps required by block b

2.2 GPU

3 Constraints

Summing all the units in a platform for each design should give the total number of units for that platform

$$\sum_{i=0}^{n_d-1} n_{pd} = n_p$$

Summing over all platforms, the number of units times cost should give the total cost of the system

$$\sum_{p \in platforms} n_p * c_p = c$$

4 Objective functions

c : cost

w : power