Noxim simulator

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September 10, 2024

0.1 Outputs

0.1.1 Mesh 4x4

```
Loading configuration from file "./configs/mesh4x4_True_128.yaml"... Done
Loading power configurations from file "power.yaml"... Done
Reset for 1000 cycles...  done!
 Now running for 10000 cycles...
Noxim simulation completed. (11000 cycles executed)

% Total received packets: 170
% Total received flits: 1356
% Received/Ideal flits Ratio: 0.117708
% Average wireless utilization: 0.905882
% Global average delay (cycles): 2551.28
% Max delay (cycles): 5763
% Network throughput (flits/cycle): 0.150667
% Average IP throughput (flits/cycle/IP): 0.00941667
% Total energy (J): 1.18609e-05
%       Dynamic energy (J): 6.28938e-07
%       Static energy (J): 1.1232e-05
```

0.1.2 Mesh 8x8

```
Loading configuration from file "./configs/mesh8x8_True_128.yaml"... Done
Loading power configurations from file "power.yaml"... Done
Reset for 1000 cycles...  done!
 Now running for 10000 cycles...
Noxim simulation completed. (11000 cycles executed)

% Total received packets: 587
% Total received flits: 4696
% Received/Ideal flits Ratio: 0.10191
% Average wireless utilization: 0.262351
% Global average delay (cycles): 1787.17
% Max delay (cycles): 8858
% Network throughput (flits/cycle): 0.521778
% Average IP throughput (flits/cycle/IP): 0.00815278
% Total energy (J): 5.5481e-05
%       Dynamic energy (J): 1.34731e-06
%       Static energy (J): 5.41337e-05
```

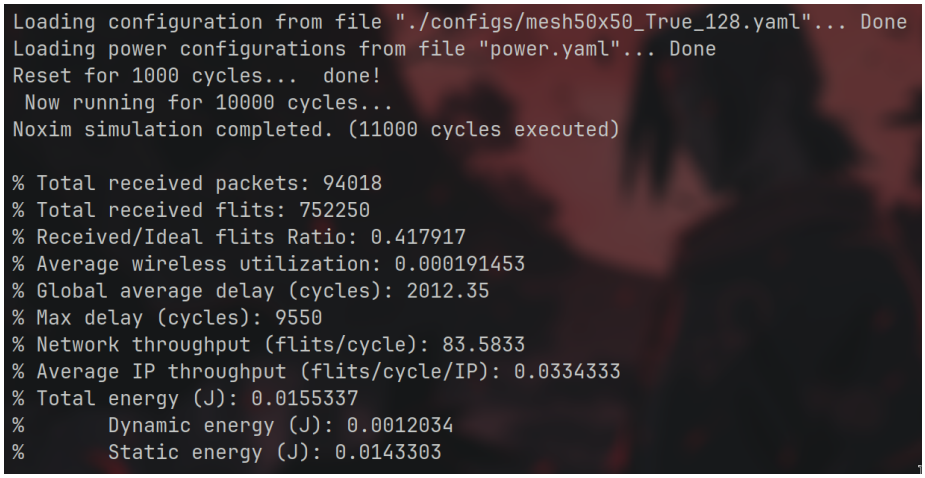
0.1.3 Mesh 16x16

```
Loading configuration from file "./configs/mesh16x16_True_128.yaml"... Done
Loading power configurations from file "power.yaml"... Done
Reset for 1000 cycles...  done!
 Now running for 10000 cycles...
Noxim simulation completed. (11000 cycles executed)

% Total received packets: 23095
% Total received flits: 184717
% Received/Ideal flits Ratio: 1.00215
% Average wireless utilization: 0.00359385
% Global average delay (cycles): 83.5115
% Max delay (cycles): 970
% Network throughput (flits/cycle): 20.5241
% Average IP throughput (flits/cycle/IP): 0.0801723
% Total energy (J): 0.000419463
%       Dynamic energy (J): 4.39626e-05
%       Static energy (J): 0.000375501
```

0.1.4 Mesh 32x32

```
Loading configuration from file "./configs/mesh32x32_True_128.yaml"... Done
Loading power configurations from file "power.yaml"... Done
Reset for 1000 cycles...  done!
 Now running for 10000 cycles...
Noxim simulation completed. (11000 cycles executed)

% Total received packets: 58431
% Total received flits: 467487
% Received/Ideal flits Ratio: 0.63407
% Average wireless utilization: 0.000393627
% Global average delay (cycles): 1285.36
% Max delay (cycles): 8704
% Network throughput (flits/cycle): 51.943
% Average IP throughput (flits/cycle/IP): 0.0507256
% Total energy (J): 0.00337829
%       Dynamic energy (J): 0.000352841
%       Static energy (J): 0.00302545
```

0.1.5 Mesh 50x50

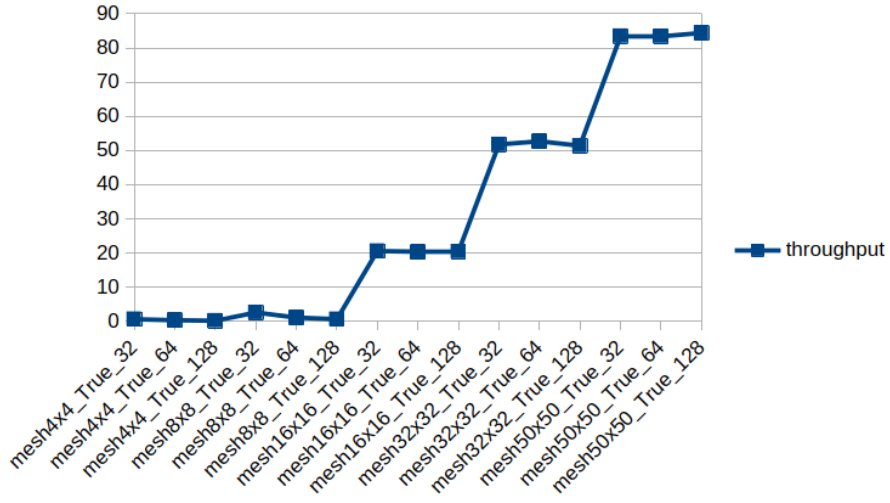


0.2 Comparison

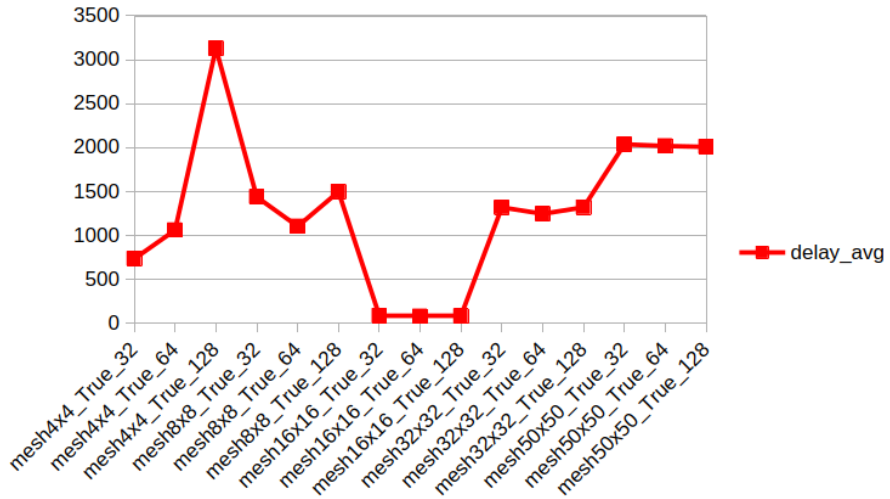
- Noxim simulator is executed on different parameters such as x and y dimension, flit size (32, 64, 128) and usewinoc (enable wireless)
- Flit size does not affect the throughput
- Increasing mesh size increases the throughput, but also increases the delay
- Mesh size of 16x16 gives optimal throughput and less delay.

0.2.1 Wireless NoC

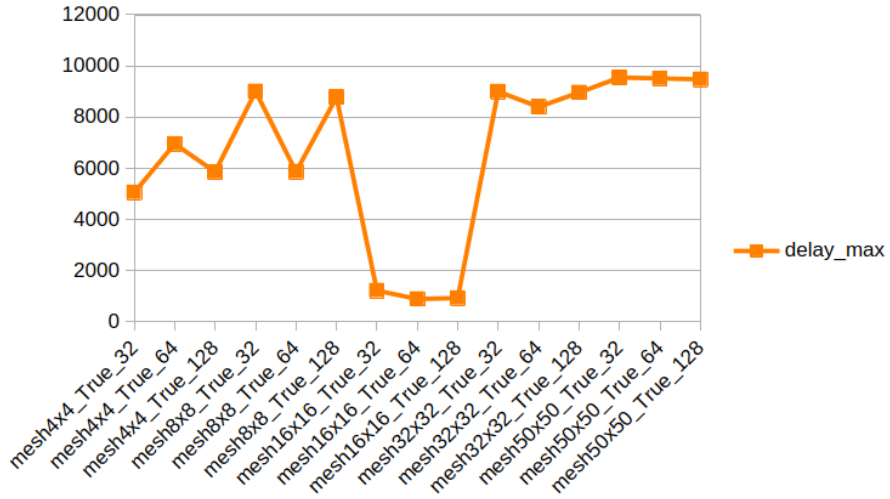
throughput (flits/cycle)



Average delay (In cycles)

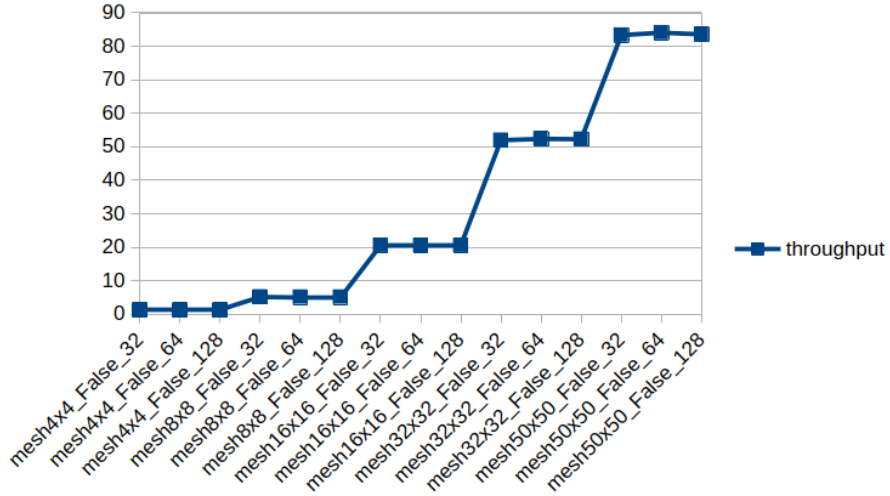


Max delay (In cycles)

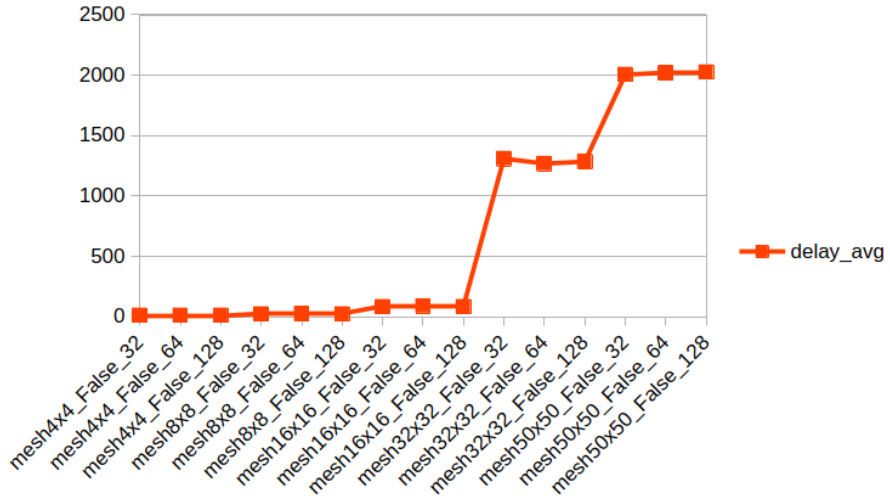


0.2.2 Wired NoC

throughput (flits/cycle)



Average delay (In cycles)



Max delay (In cycles)