



PERFORMANCE EVALUATION OF HIGH PERFORMANCE HETEROGENEOUS COMPUTING PLATFORMS



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HOMOGENEOUS COMPUTING

Properties of homogeneity

- All processors in the system have to be identical and interconnected via a homogeneous communication network
- The same system software (operating system, compilers, libraries, etc.) should be used to generate and execute application programs
- One more property is the system should be dedicated to one application only



HETEROGENEOUS COMPUTING

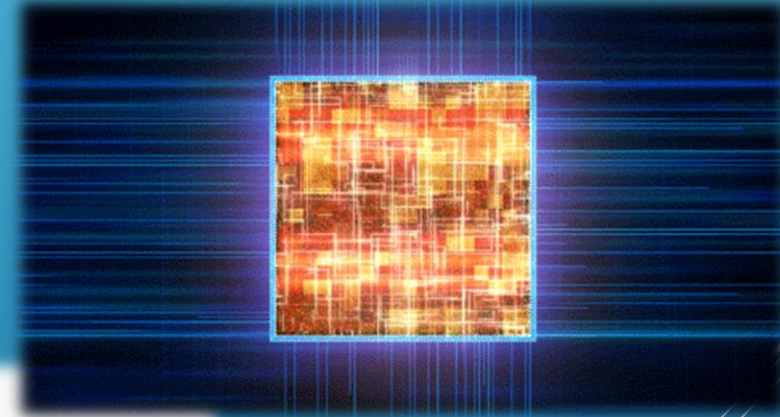
If any above mentioned property of homogeneous computing is violated the platform automatically turns into heterogeneous platform

Therefore, heterogeneity is an intrinsic property of distributed memory platforms

EFFICIENCY OF HETEROGENEOUS PLATFORMS



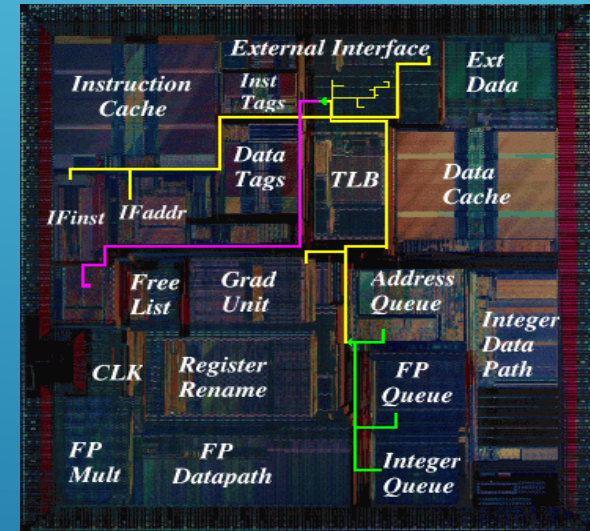
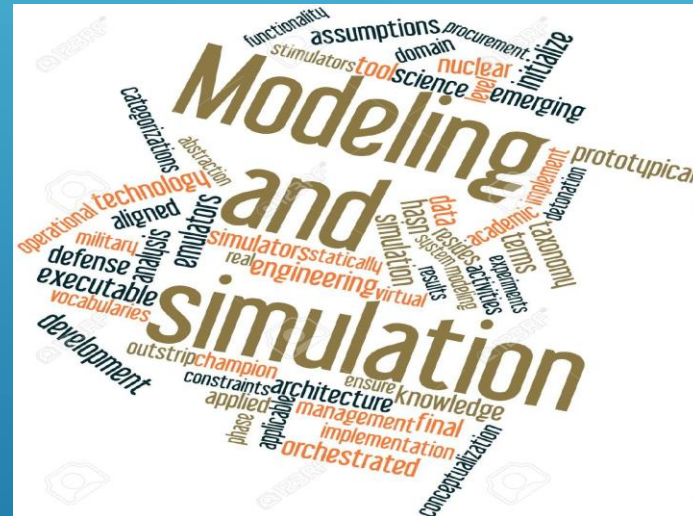
High Performance



Energy Consumption

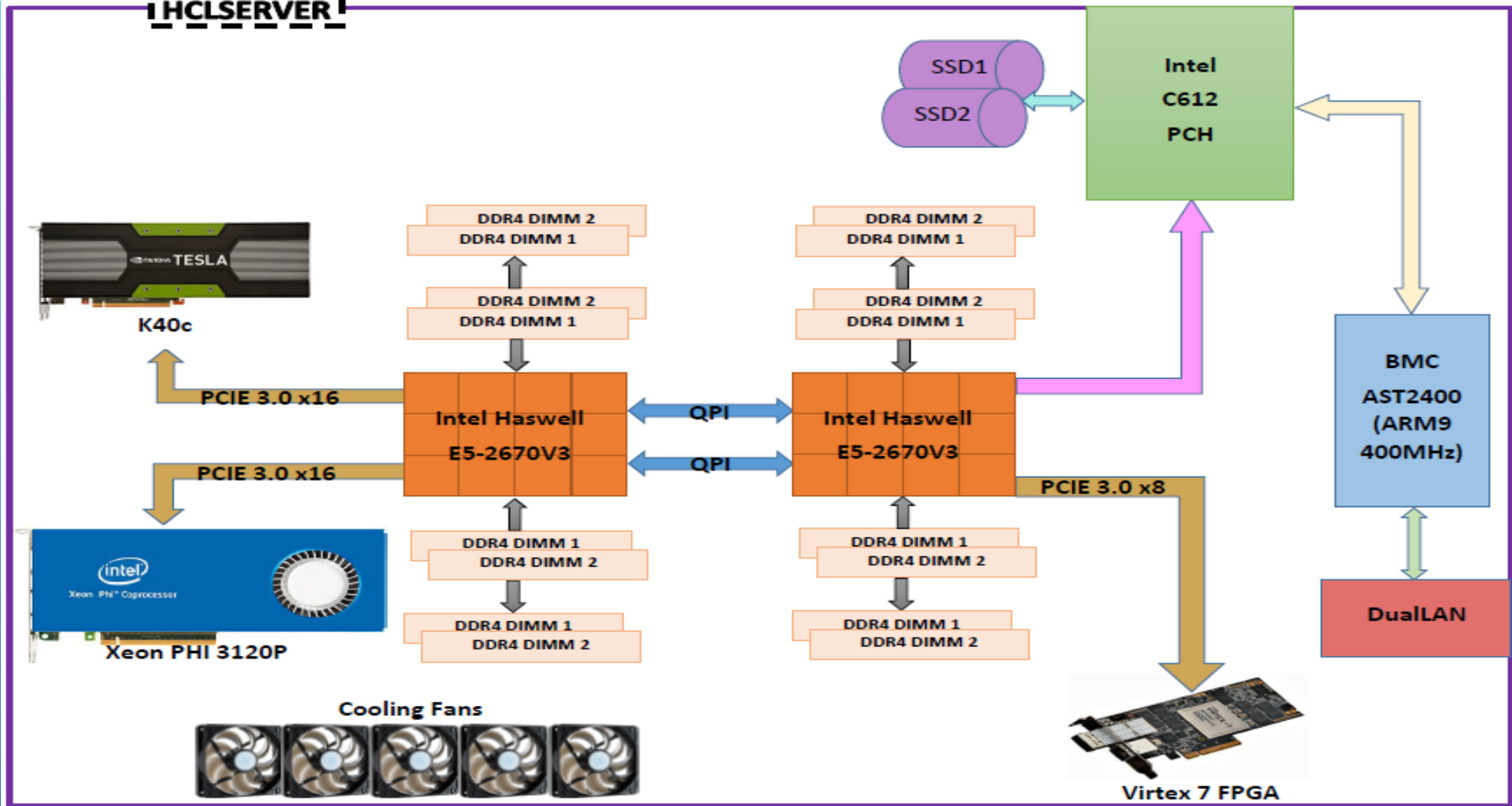


ENERGY AWARENESS



- signals selected for counting
- signals ready for counting
- raw signals

PROBLEM!



ACKNOWLEDGEMENT

This presentation is a collaborative effort by HCL team



Thank you for your attention!

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NESUS

Network for Sustainable Ultrascale Computing

 **cost** IC1305