15-210 :Parallel and Sequential Data Structures and Algorithms

Instructors: Guy Blelloch and Robert Harper

Staff

Professors:

➢ Guy Blelloch
  Research: Parallel Algorithms and PL
  Hobbies: Biking, Skiing, and above

➢ Robert Harper
  Research: PL and Type Theory
  Hobbies: Biking, Blogging (existential types)

Staff

TAs:

Rohan and Charles (head TAs)

Aashir, Allen, Ashwin, Calvin, Yon (Jonathan), Manik, Serena, Irene, Meheresh, Teddy, Nikhil, Lizzy, Rahul

Web Page

Google (or Bing): 15-210

- Book available online, under schedule
- Syllabus
    - Bucket model for grading labs
    - We use gradescope and autolab
    - Exams graded on curve
    - Piazza, piazza, piazza
    - Don't cheat!!!!

210: Not your generic algorithms and data structures class

- Parallelism throughout
- Purely functional style

Parallelism is Recent and Relevant

Why Parallelism?

Intel Xeon Eight-Core E5-2660 2.2GHz 8.0GT/s 20MB LGA2011 Processor without Fan, Retail BX80621E52660

by Intel

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i Get **$40.00 off instantly:** Your cost could be **$97.99** upon approval for the Amazon.com Store Card. Learn more

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Only 13 left in stock.

Get it as fast as Thursday, Oct. 13.

Ships from and sold by Galactics.

- Model: Intel Xeon Processor E5-2660
- Core Count: 8
- Clock Speed: 2.2 GHz
- Cache: 20 MB
- Max Memory Bandwidth: 51.2 GB/s
- Socket: LGA2011

Used & new (29) from $47.95 + $6.44 shipping

Why Parallelism?

INTEL XEON 20 CORE PROCESSOR E5-2698V4 2.2GHZ 50MB
SMART CACHE 9.6 GT/S QPI TDP 135W

by Intel

⭐⭐⭐⭐⭐ ▾   1 customer review

Price: **$3,599.95** + $4.27 shipping

i Your cost could be **$3,594.95**: Qualified customers get $5 in Gift Card funds on first $100 reload of their Amazon
    Gift Card Balance. Learn more

Note: Not eligible for Amazon Prime.

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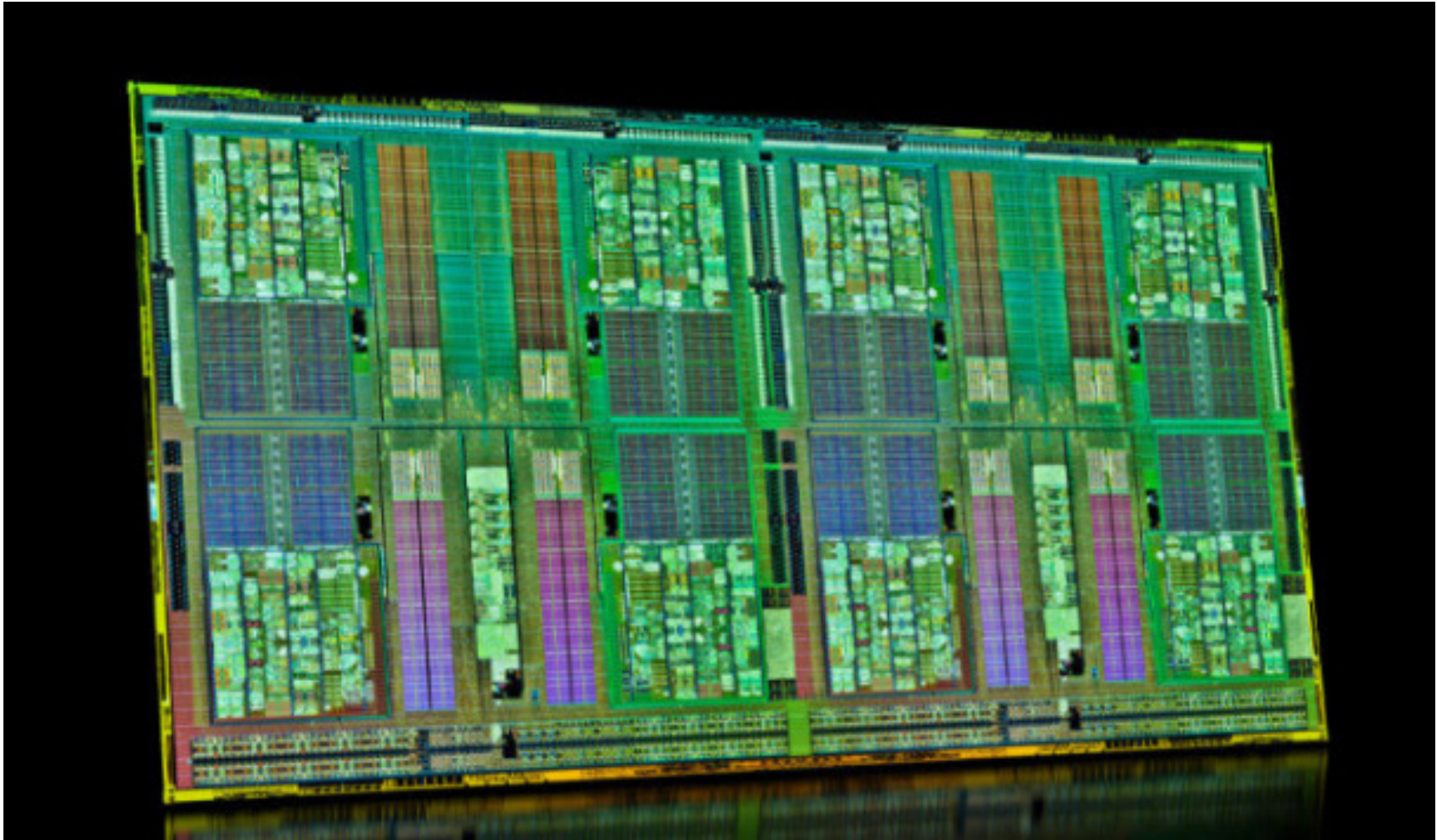**Want it Thursday, Oct. 13?** Order within **5 hrs 16 mins** and choose **Two-Day Shipping** at checkout. Details
Ships from and sold by Mega Micro Devices Inc..

- # of Cores 20
- # of Threads 40
- Processor Base Frequency 2.2 GHz
- Max Turbo Frequency 3.6 GHz
- NEW OEM - 1 year warranty

New (6) from $3,129.71 + $4.51 shipping

Why Parallelism?

64 core blade servers ($6K) (shared memory)

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Amd Opteron (sixteen-core) Model 6274
by AMD
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Price: **$792.99**

In Stock.
Ships from and sold by **J-Electronics**.

Only 1 left in stock--order soon.

4 new from $714.03

x 4 =

210 F17

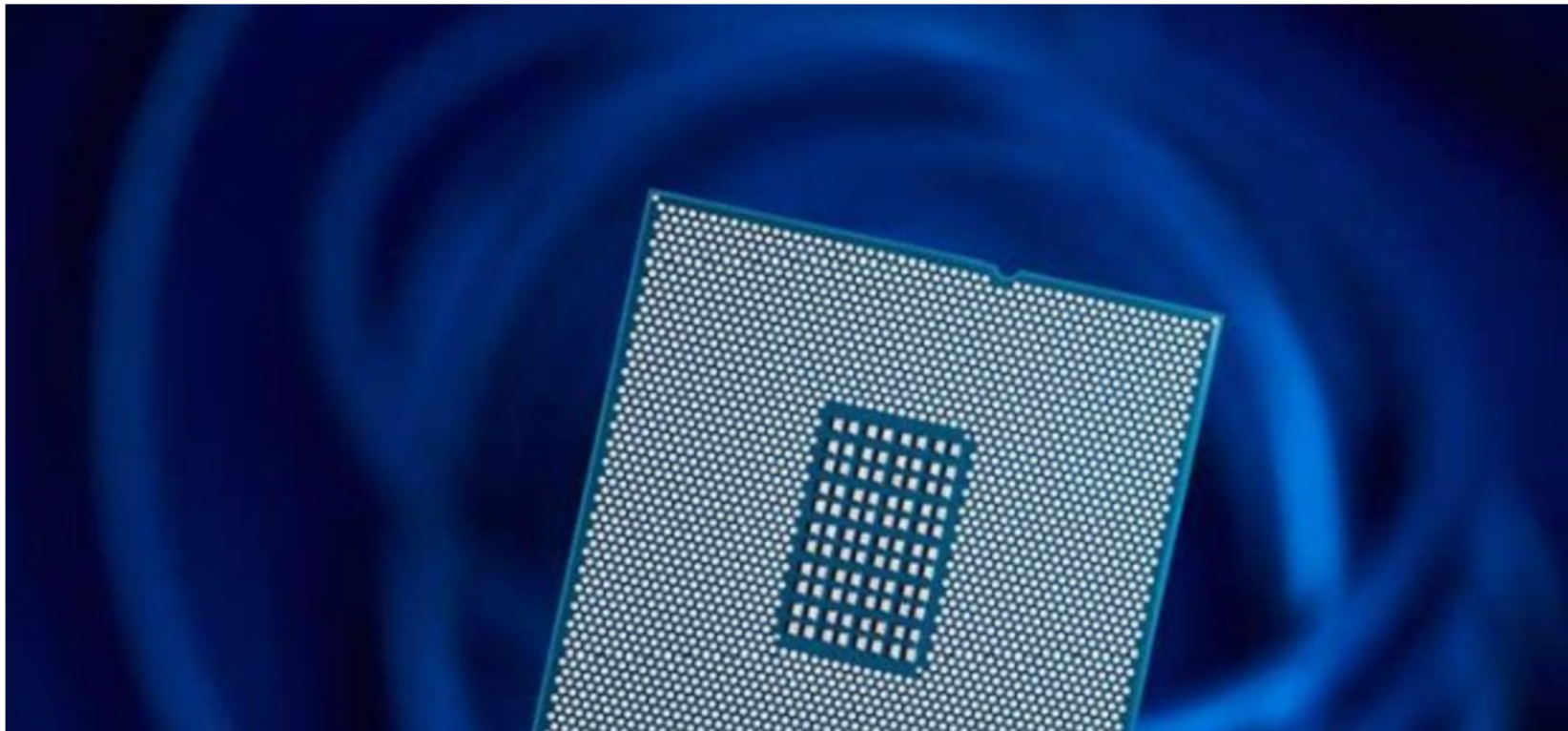# Xeon Phi: Knights Landing (64 cores)

Qualcomm readies up 48-core Centriq 2400 ARM server chip

by Zak Killian — 12:51 PM on December 9, 2016

Maybe 2017 will be the year that ARM servers finally become a thing. After demoing a 24-core server chip a little more than a year ago, Qualcomm's Datacenter Technologies subsidiary has announced the Centriq 2400 CPU. This new chip is a 48-core ARMv8 processor based on a new in-house CPU core design called Falkor, and it's compliant with ARM's Server Base System Architecture specification. Earlier in the week, Qualcomm showed off the new hardware running "a typical datacenter application" comprising Linux with Java and Apache Spark.

4992 "cuda" cores

Nvidia Tesla K80 24GB GPU Accelerator passive cooling 2x Kepler GK210 900-22080-0000-000

by NVIDIA

★★★★☆ ▼   29 customer reviews | 11 answered questions

Price: **$4,295.95** + $11.55 shipping

Note: Not eligible for Amazon Prime.

In Stock.

Ships from and sold by eServer PRO.

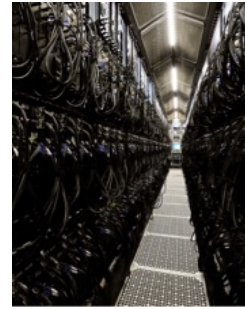**Estimated Delivery Date:** Aug. 27 - Sept. 1 when you choose Expedited at checkout.

- Nvidia Tesla K80 GPU: 2x Kepler GK210
- Memory size (GDDR5) : 24GB (12GB per GPU)
- CUDA cores: 4992 (2496 per GPU)
- Memory bandwidth: 480 GB/sec (240 GB/sec per GPU)
- 2.91 Tflops double precision performance with NVIDIA GPU Boost - See more at: http://www.nvidia.com/object/tesla-servers.html#sthash.IF5LVwFq.dpuf

4 new from $4,135.00

Upgrading to a Solid-State Drive?
Learn how to install an SSD with Amazon Tech Shorts. Learn more

Roll over image to zoom in

Up to 300K servers

LG Optimus 2X: first dual-core smartphone launches with Android, 4-inch display, 1080p video recording

Chris Ziegler
12.15.10

Dec 2010

53
Shares

f

Samsung Galaxy S IV to feature Exynos 28nm quad-core processor?

Written by Andre Yoskowitz @ 01 Nov 2012 18:02

Nov 2012

SAMSUNG

It has been a few weeks but there is a new rumor regarding the upcoming Samsung Galaxy S IV.

According to reports, Samsung will pack next year's flagship device with its "Adonis" Exynos processor, a quad-core ARM 15 beast that uses efficient 28nm tech.

Samsung is supposedly still testing the application processor, but mass production is scheduled for the Q1 2013 barring any delays.

Lenovo Announces First Octa-Core Smartphone, The Vibe X2

Jay McGregor, CONTRIBUTOR

I cover all aspects of technology and enterprise. **FULL BIO** ⌄

Opinions expressed by Forbes Contributors are their own.

Sep 2014

10-core MediaTek Helio X20 is official
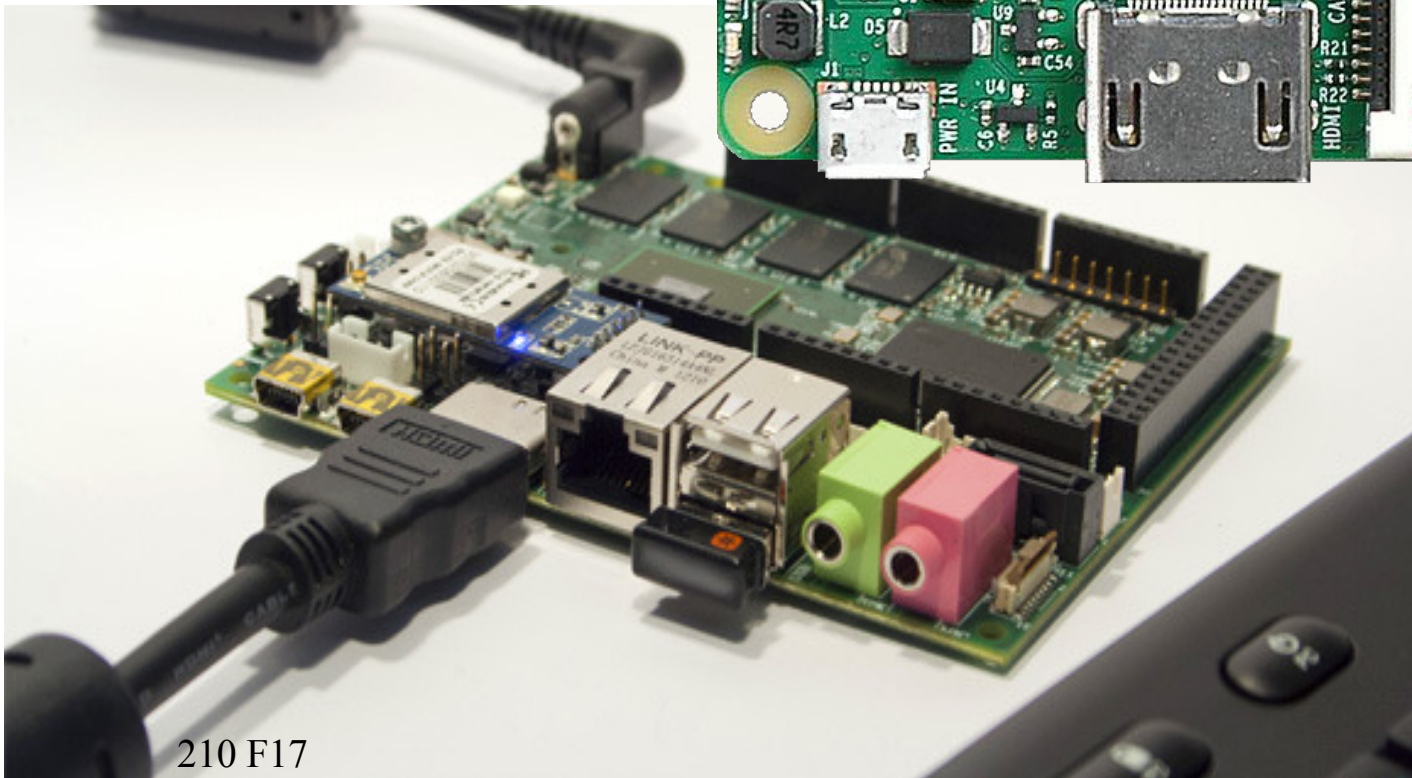
NEWS   by **Robert Triggs** · May 12, 2015

May 2015

MEDIATEK
helio | X20

MediaTek and TSMC trialing new 7nm smartphone processor with mad CPU core count
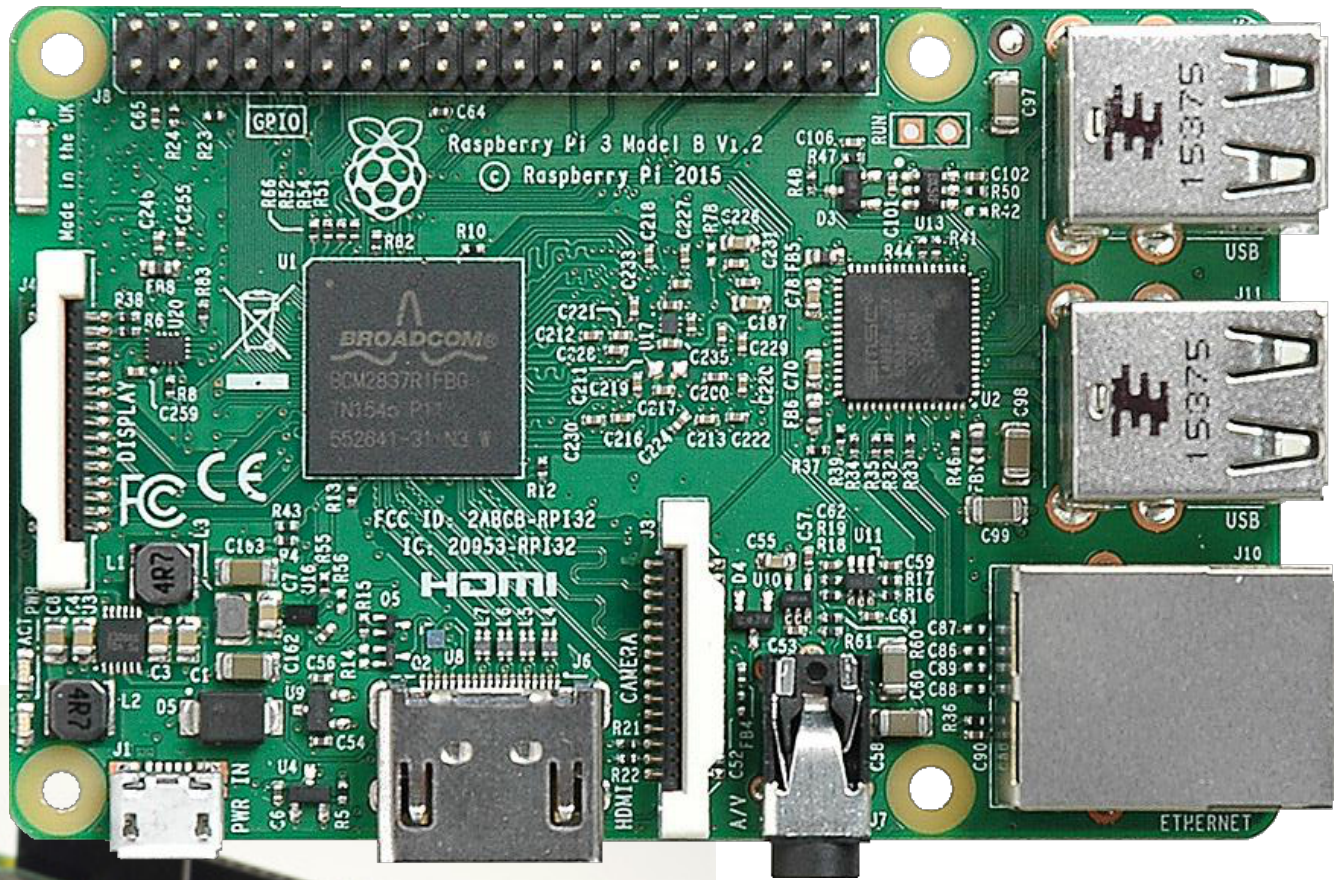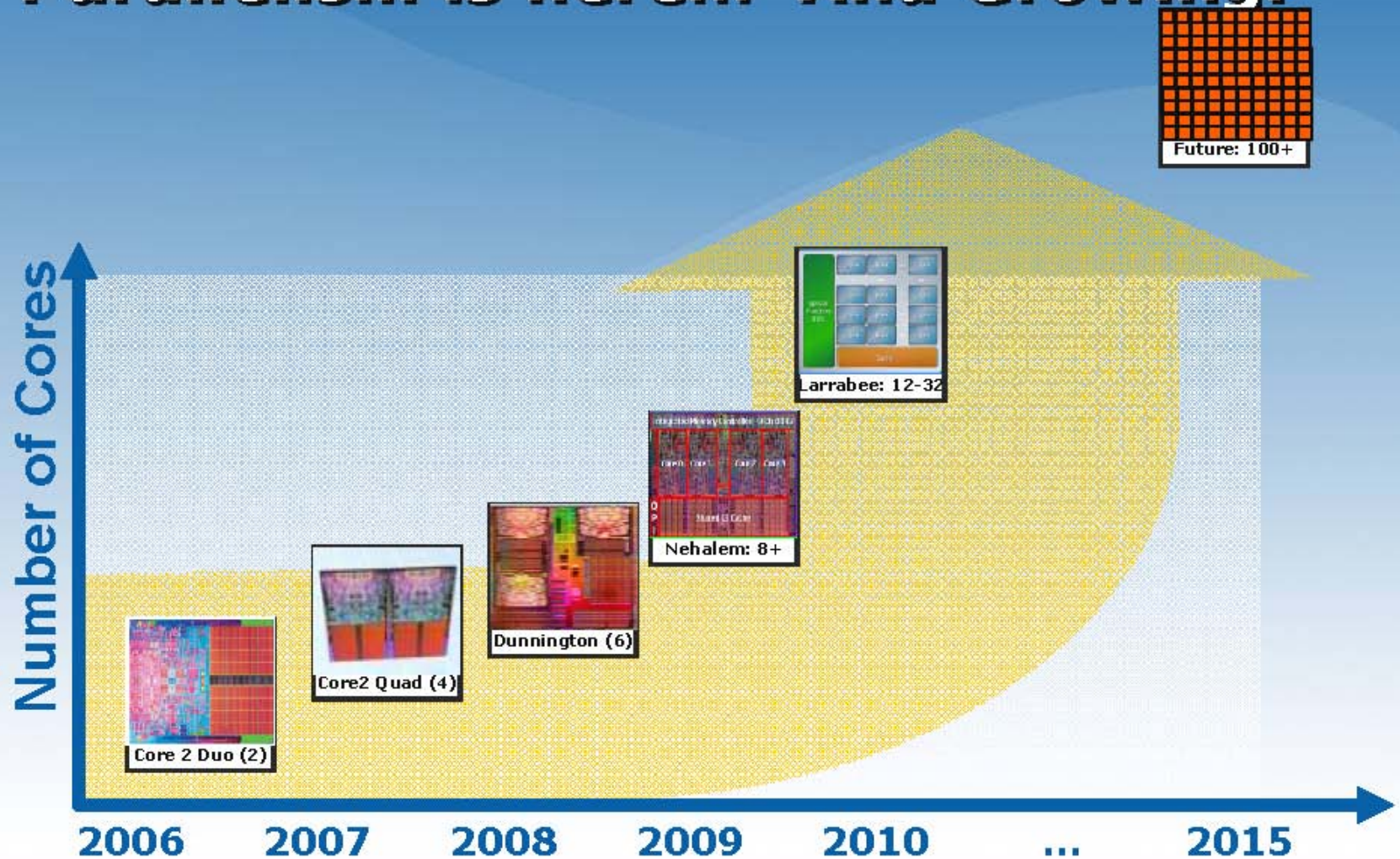
Posted: 09 Mar 2017, 06:53, by Luis D.

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Mar 2017, 12 core

UDOO

Raspberry Pi 3

Andrew Chien, 2008

Are the cores useful?

64 core Xeon Phi[20]