

End-User Group review

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The Mont-Blanc prototype ecosystem



Tibidabo:
ARM multicore

Carma:
ARM +
external
mobile GPU

Pedraforca:
ARM +
HPC GPU



Arndale:
ARM + embedded GPU



Odroid:
ARM bigLITTLE
In-kernel switcher



Odroid Octa:
ARM bigLITTLE
Heterogeneous
multi-processing



Nvidia Jetson
ARM 4+1 + K1 GPU

**Mont-Blanc
prototype:**



2011

2012

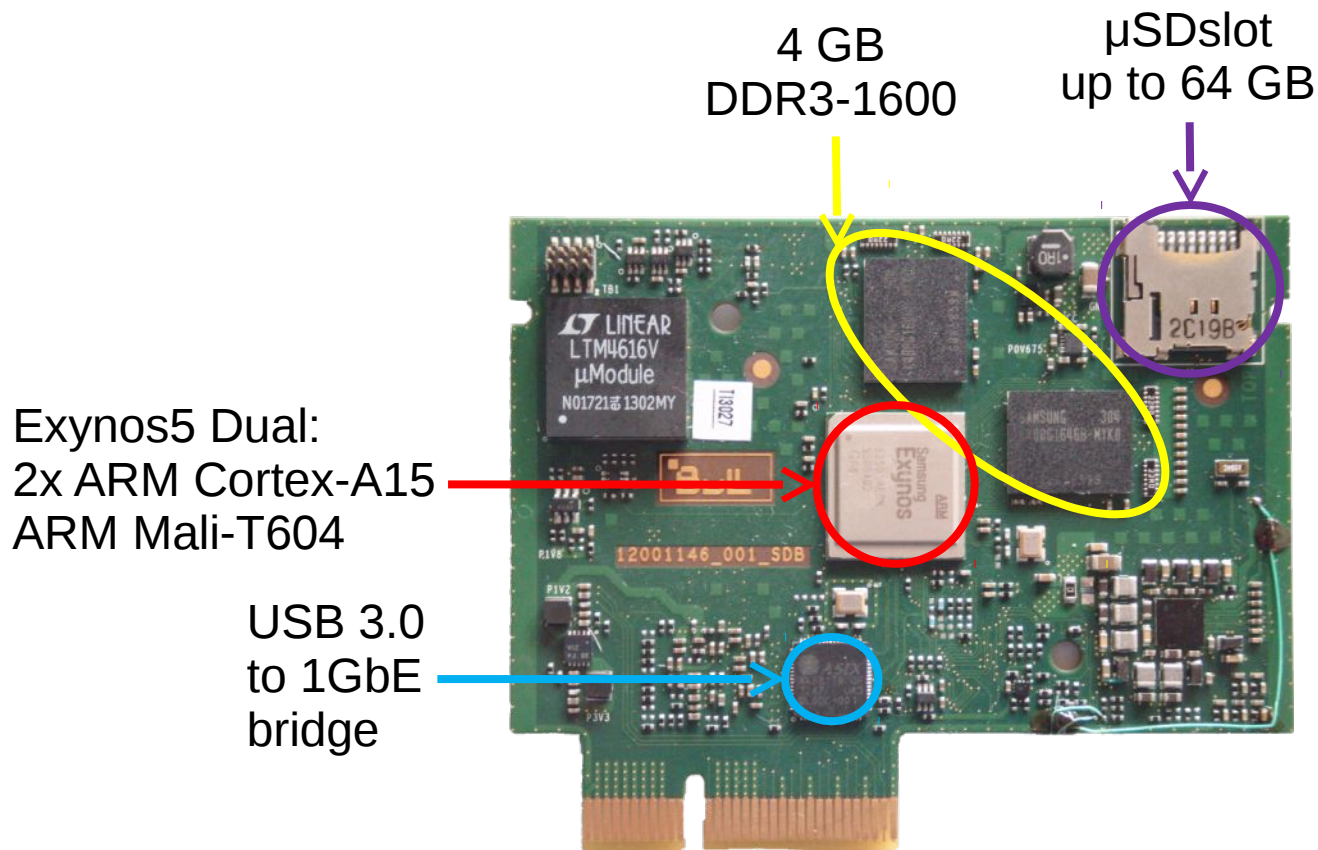
2013

2014

Prototypes are critical to accelerate software development
System software stack + applications

Mont-Blanc Server-on-Module (SoM)

CPU + GPU + DRAM + storage + network
all in a compute card just 8.5 x 5.6 cm



The Mont-Blanc prototype

Exynos 5 compute card

2 x Cortex-A15 @ 1.7GHz

1 x Mali T604 GPU

6.8 + 25.5 GFLOPS

15 Watts

2.1 GFLOPS/W

GPU ~ 2/3 peak
CPU ~ 1/3 peak



Carrier blade

15 x Compute cards

485 GFLOPS

1 GbE to 10 GbE

300 Watts

1.6 GFLOPS/W



Blade chassis 7U

9 x Carrier blade

135 x Compute cards

4.3 TFLOPS

2.7 kWatts

1.6 GFLOPS/W



Rack

6 BullX chassis

54 Compute blades

810 Compute cards

1620 CPU

810 GPU

3.2 TB of DRAM

52 TB of Flash

26 TFLOPS

18 kWatt

	Mont-Blanc [GFLOPS/W]	Green500 [GFLOPS/W]
Nov 2011	0.15	2.0
Jun 2014	1.5	4.4

Mont-Blanc prototypes road map

- Nov 2014 – 135 nodes installed @ BSC
- Jan 2015 – 1080 nodes installed @ BSC

- Constant survey of the market looking for interesting architecture to acquire and use to build experimental clusters

- Video training online
- Open access to Mont-Blanc training
Next appointment: April 2015 - Stuttgart

Documentation and contacts:

- For information about the MB prototype use the wiki:
<https://wiki.hca.bsc.es/dokuwiki/wiki:iug>
- For requesting new accounts and any support:
HCA System Administrator <hca.sysadmin@bsc.es>



- Once you are accessing the MB prototype, please use the following list in order to communicate maintenance/outage, ask about status and shared effort: mb-proto@bsc.es