

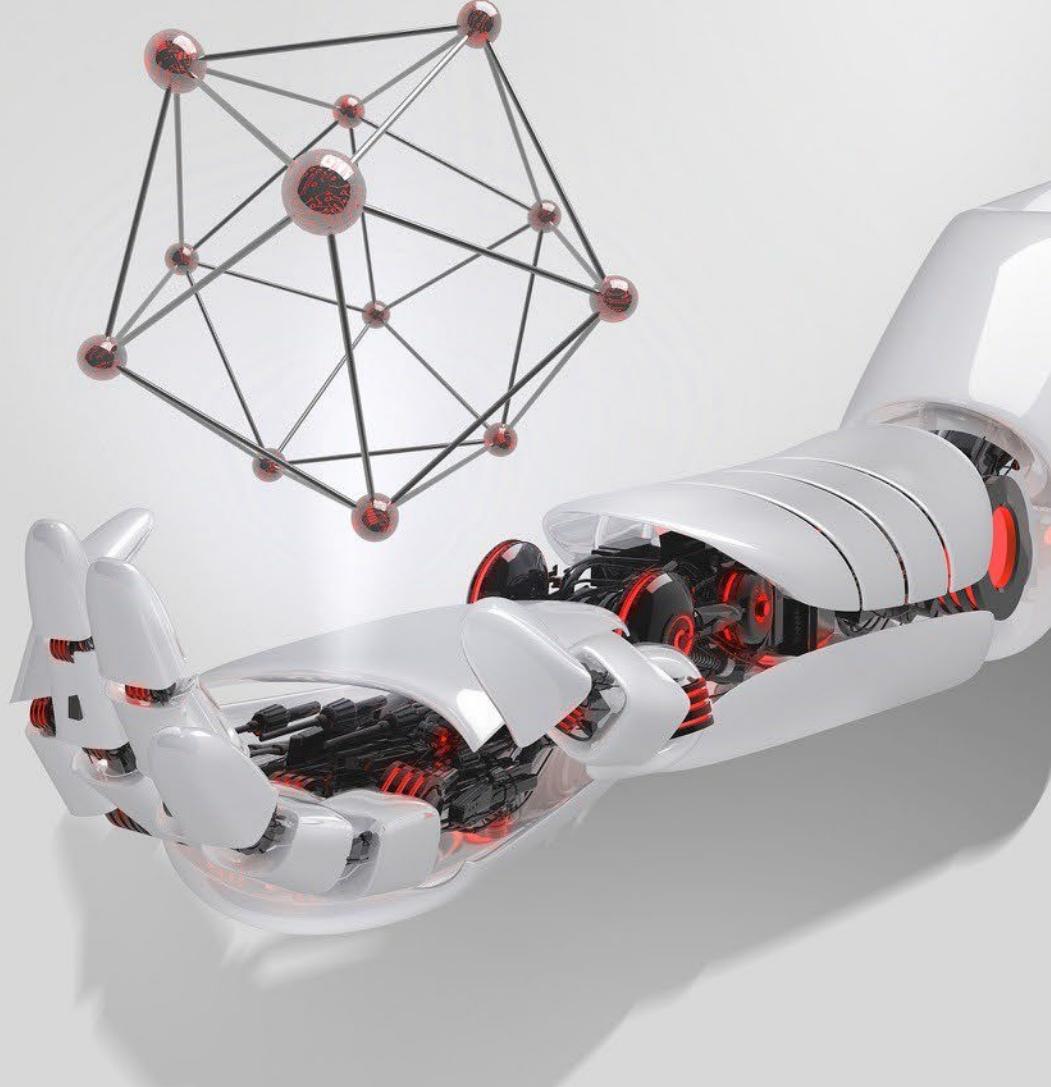
Development of the ARM ecosystem for artificial intelligence, cloud and high performance computing



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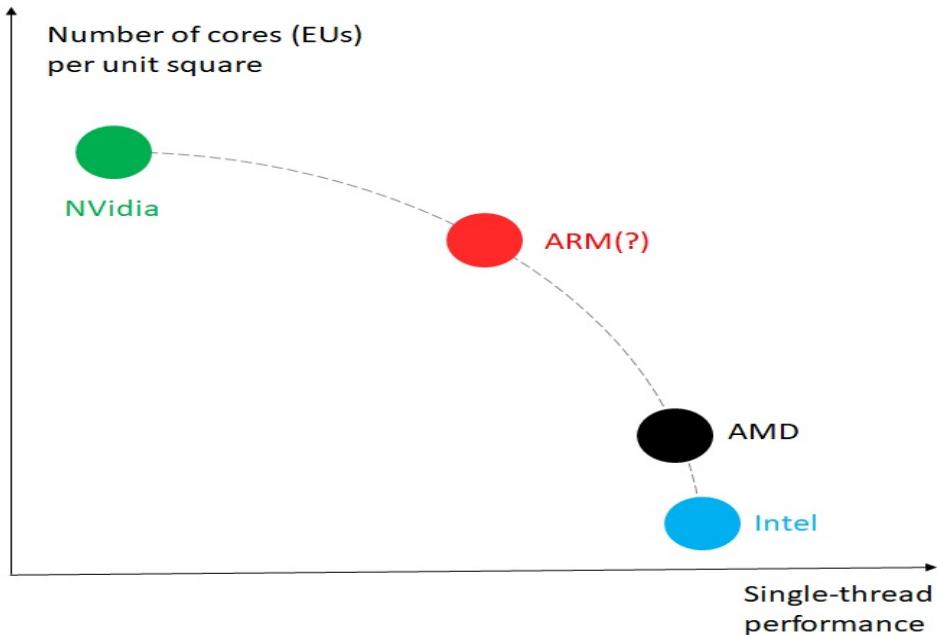
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The Landscape

- Technology
- Economy
- Politics
- And a bit of Philosophy



Early signs

- Fujitsu and RIKEN Take First Place Worldwide in TOP500, HPCG, and HPL-AI with Supercomputer Fugaku
- By the end of this year, Apple will have a MacBook Pro on sale that is powered by an ARM-based processor of Apple's own design.
- Is NVidia buying ARM?



Supported OS

- AltServer
- SimlyLinux
- Альт Рабочая станция
- Альт Образование
- RedOS (server)
- AstraLinux Special Edition
- CentOS
- Debian
- Ubuntu
- SLES
- openEuler
- NeoKylin
- Deepin
- Linx
- Euler
- Kylin
- BC-Linux

<http://ic-openlabs.huawei.com/openlab/#/unioncompat>

5



Developer tools

- GCC
- CLANG
- Perf
- GDB
- Git
- Make
- Cmake
- FreePascal
- OpenJDK
- HuaweiJDK

 HUAWEI

Russia Kunpeng Ecosystem in 2020

Kunpeng

AccentOS
(IaaS)
Horizon-VS

Virtualization



Dr. Web
(Anti-virus)
Kaspersky
(Anti-virus)

ubuntu®
SUSE

OS



MySQL

NitrosBase

Mango DB

Red DB
Redis
PostgreSQL

Database



ActiveMQ

OpenLDAP

NitrosBase

MySQL

Mango DB

RabbitMQ
Apache

Middleware

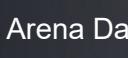


Arena Data

OpenLDAP

Nginx
JBoss
Apache
Tomcat
HAProxy

Big data



Hadoop

LVS

Memcached

Redis

Squid

Varnish

Lighttpd

Apache
Tomcat
Hadoop
LVS

Webservice



Memcached

Redis

Squid

Varnish

Lighttpd

Ceph
SUSE enterprise storage

SDS



Aerodisk

Gluster

MinIO

Video Most
(Video Analysis)

Mobility Lab
(Enterprise Mobility)

Posit Tech (Security)

Infotechs (Security)

Lampyris (Supply Chain)

MyOffice

1C

Applications

AccentOS (VDI, IoT)

TSS (Security)

Bars Group(BI)

CFT(Bank)

Corus Consulting CIS

Diasoft(Security)

Galaktika(ERP,CRM)

SKB Kontur

Industry alliance

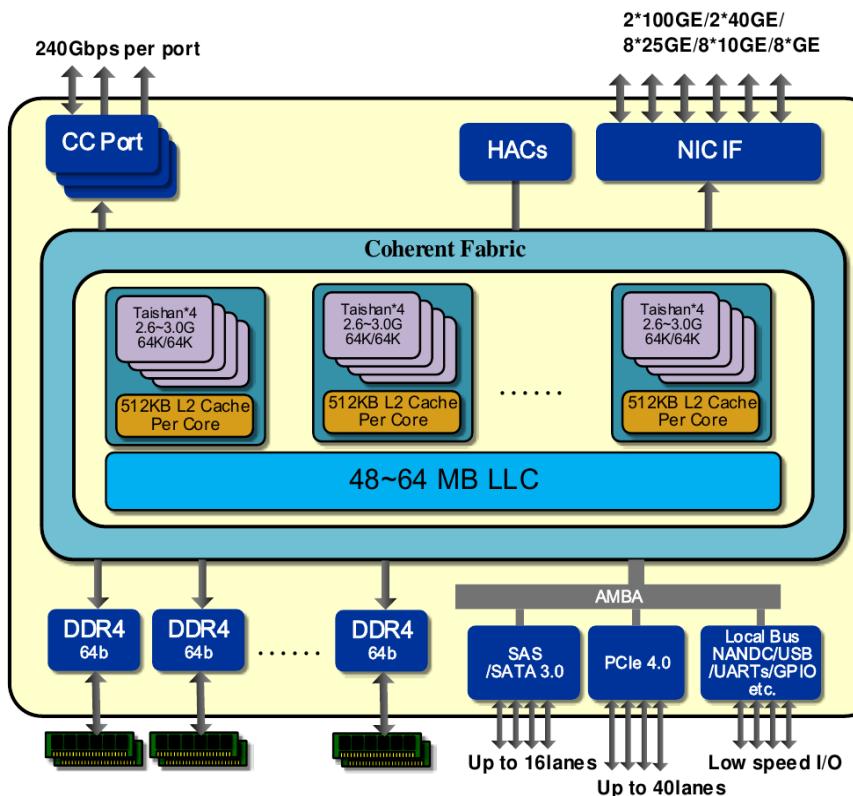
ARM ecosystem needs center of gravity for

- Better scaling
- Resource saving
- Enabling acceleration
(5 years instead of 20)
- Efficiency grows
nonlinearly(!)
- Influence point



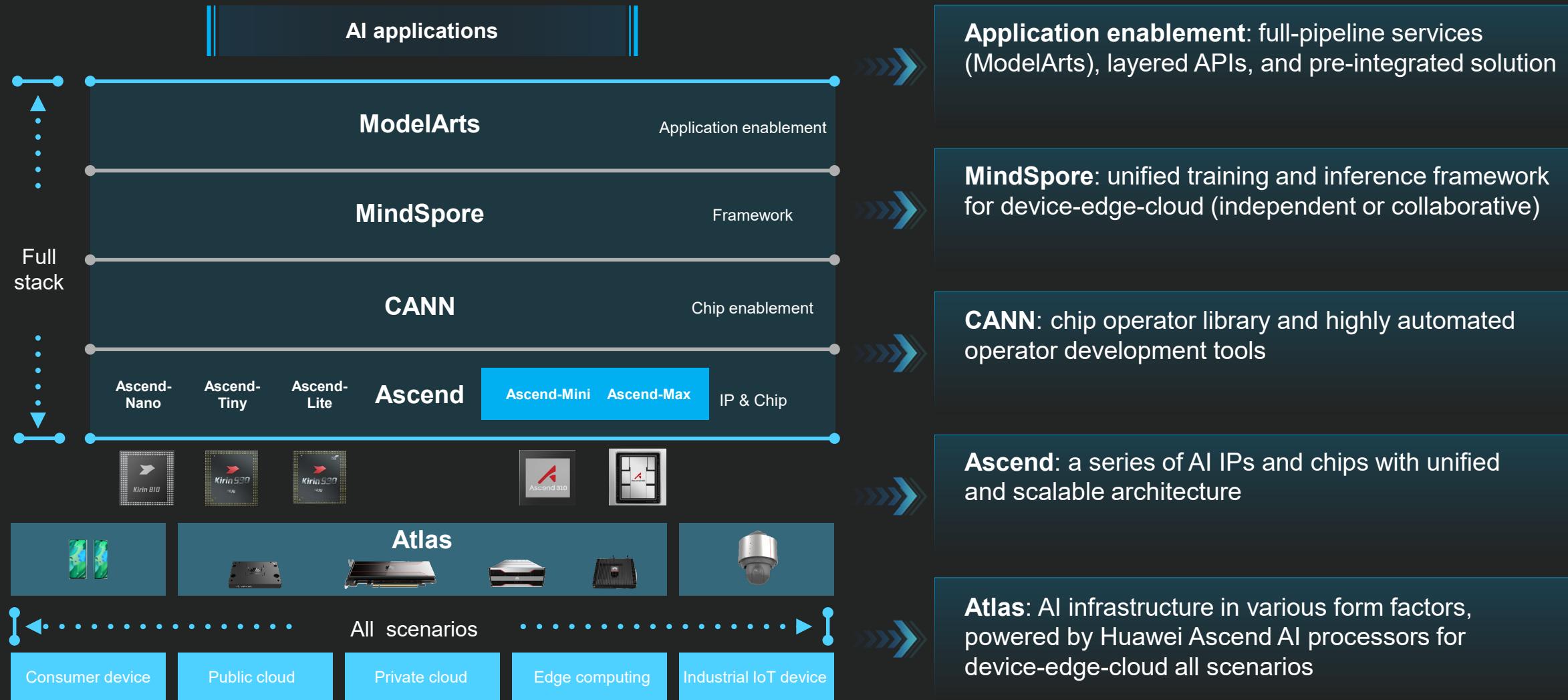
Kunpeng

Hi1620 Specifications Overview



CPU core	Up to 64 ARMv 8.2 cores, 3.0 GHz, 48-bit physical address 4 issue OoO superscalar design 64 KB L1 I Cache and 64 KB L1 D cache
L2 cache	512 KB private per core, 24 MB total
L3 cache	48 MB shared for all (1 MB/core), Partitioned
Memory	8-channel DDR4-2400/2666/2933/3200 16 ranks/channel, 1DPC and 2DPC configurations x4/x8 support ECC, SDDC, DDDC
PCIe	40 lanes of PCIe Gen4.0 16x
Integrated I/O	8 lanes of ETH, Combo MACs, supporting 2 x 100GE, 2 x 40GE, 8 x 25GE/10GE, 10 x GE, supporting SR-IOV RoCEv2/RoCEv1 x4 USB 3.0 x8 SAS 3.0 x2 SATA 3.0
Crypto engine	AES, DES/3DES, MD5, SHA1, SHA2, HMAC, CMAC Up to 100 Gbit/s
Compression	GZIP, LZS, LZ4 Up to 40 Gbit/s (compress)/100 Gbit/s (decompression)
RAID	RAID5/6, DIF, XOR, PQ acceleration
CCIX	Cache coherency interface for accelerator, like Xilinx FPGA World's 1st CCIX solution
Scale-up	Coherent SMP interface for 2P/4P 3*240Gbps bandwidth
Power	TDP ~150 W (48C 2.6 GHz)

Ascend



Thank you.

Bring digital to every person, home and organization for a fully connected, intelligent world.

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