

# ARM Marvell SoCs

This document lists all the ARM Marvell SoCs that are currently supported in mainline by the Linux kernel. As the Marvell families of SoCs are large and complex, it is hard to understand where the support for a particular SoC is available in the Linux kernel. This document tries to help in understanding where those SoCs are supported, and to match them with their corresponding public datasheet, when available.

## Orion family

Flavors:

- 88F5082
- 88F5181
- 88F5181L
- 88F5182
  - Datasheet:  
<https://web.archive.org/web/20210124231420/http://csclub.uwaterloo.ca/~board/ts7800/MV88F5182-datasheet.pdf>
  - Programmer's User Guide:  
<https://web.archive.org/web/20210124231536/http://csclub.uwaterloo.ca/~board/ts7800/MV88F5182-opensource-manual.pdf>
  - User Manual:  
<https://web.archive.org/web/20210124231631/http://csclub.uwaterloo.ca/~board/ts7800/MV88F5182-usermanual.pdf>
  - Functional Errata:  
[https://web.archive.org/web/20210704165540/https://www.digriz.org.uk/ts78xx/88F5182\\_Functional\\_Errata.pdf](https://web.archive.org/web/20210704165540/https://www.digriz.org.uk/ts78xx/88F5182_Functional_Errata.pdf)
- 88F5281
  - Datasheet:  
[https://web.archive.org/web/20131028144728/http://www.ocmodshop.com/images/reviews/networking/qnap\\_ts409u/marvel\\_88f5281\\_datasheet.pdf](https://web.archive.org/web/20131028144728/http://www.ocmodshop.com/images/reviews/networking/qnap_ts409u/marvel_88f5281_datasheet.pdf)
- 88F6183

Core:

Feroceon 88f331 (88f51xx) or 88f531-vd (88f52xx) ARMv5 compatible

Linux kernel mach directory:

arch/arm/mach-orion5x

Linux kernel plat directory:

arch/arm/plat-orion

## Kirkwood family

Flavors:

- 88F6282 a.k.a Armada 300
  - Product Brief:  
[https://web.archive.org/web/20111027032509/http://www.marvell.com/embedded-processors/armada-300/assets/armada\\_310.pdf](https://web.archive.org/web/20111027032509/http://www.marvell.com/embedded-processors/armada-300/assets/armada_310.pdf)
- 88F6283 a.k.a Armada 310
  - Product Brief:  
[https://web.archive.org/web/20111027032509/http://www.marvell.com/embedded-processors/armada-300/assets/armada\\_310.pdf](https://web.archive.org/web/20111027032509/http://www.marvell.com/embedded-processors/armada-300/assets/armada_310.pdf)
- 88F6190
  - Product Brief:  
[https://web.archive.org/web/20130730072715/http://www.marvell.com/embedded-processors/kirkwood/assets/88F6190-003\\_WEB.pdf](https://web.archive.org/web/20130730072715/http://www.marvell.com/embedded-processors/kirkwood/assets/88F6190-003_WEB.pdf)
  - Hardware Spec :  
[https://web.archive.org/web/20121021182835/http://www.marvell.com/embedded-processors/kirkwood/assets/HW\\_88F619x\\_OpenSource.pdf](https://web.archive.org/web/20121021182835/http://www.marvell.com/embedded-processors/kirkwood/assets/HW_88F619x_OpenSource.pdf)
  - Functional Spec:  
[https://web.archive.org/web/20130730091033/http://www.marvell.com/embedded-processors/kirkwood/assets/FS\\_88F6180\\_9x\\_6281\\_OpenSource.pdf](https://web.archive.org/web/20130730091033/http://www.marvell.com/embedded-processors/kirkwood/assets/FS_88F6180_9x_6281_OpenSource.pdf)
- 88F6192
  - Product Brief:  
[https://web.archive.org/web/20131113121446/http://www.marvell.com/embedded-processors/kirkwood/assets/88F6192-003\\_ver1.pdf](https://web.archive.org/web/20131113121446/http://www.marvell.com/embedded-processors/kirkwood/assets/88F6192-003_ver1.pdf)
  - Hardware Spec :  
[https://web.archive.org/web/20121021182835/http://www.marvell.com/embedded-processors/kirkwood/assets/HW\\_88F619x\\_OpenSource.pdf](https://web.archive.org/web/20121021182835/http://www.marvell.com/embedded-processors/kirkwood/assets/HW_88F619x_OpenSource.pdf)
  - Functional Spec:  
[https://web.archive.org/web/20130730091033/http://www.marvell.com/embedded-processors/kirkwood/assets/FS\\_88F6180\\_9x\\_6281\\_OpenSource.pdf](https://web.archive.org/web/20130730091033/http://www.marvell.com/embedded-processors/kirkwood/assets/FS_88F6180_9x_6281_OpenSource.pdf)

- 88F6182
- 88F6180
  - Product Brief: [https://web.archive.org/web/20120616201621/http://www.marvell.com/embedded-processors/kirkwood/assets/88F6180-003\\_ver1.pdf](https://web.archive.org/web/20120616201621/http://www.marvell.com/embedded-processors/kirkwood/assets/88F6180-003_ver1.pdf)
  - Hardware Spec : [https://web.archive.org/web/20130730091654/http://www.marvell.com/embedded-processors/kirkwood/assets/HW\\_88F6180\\_OpenSource.pdf](https://web.archive.org/web/20130730091654/http://www.marvell.com/embedded-processors/kirkwood/assets/HW_88F6180_OpenSource.pdf)
  - Functional Spec: [https://web.archive.org/web/20130730091033/http://www.marvell.com/embedded-processors/kirkwood/assets/FS\\_88F6180\\_9x\\_6281\\_OpenSource.pdf](https://web.archive.org/web/20130730091033/http://www.marvell.com/embedded-processors/kirkwood/assets/FS_88F6180_9x_6281_OpenSource.pdf)
- 88F6280
  - Product Brief: [https://web.archive.org/web/20130730091058/http://www.marvell.com/embedded-processors/kirkwood/assets/88F6280\\_SoC\\_PB-001.pdf](https://web.archive.org/web/20130730091058/http://www.marvell.com/embedded-processors/kirkwood/assets/88F6280_SoC_PB-001.pdf)
- 88F6281
  - Product Brief: [https://web.archive.org/web/20120131133709/http://www.marvell.com/embedded-processors/kirkwood/assets/88F6281-004\\_ver1.pdf](https://web.archive.org/web/20120131133709/http://www.marvell.com/embedded-processors/kirkwood/assets/88F6281-004_ver1.pdf)
  - Hardware Spec : [https://web.archive.org/web/20120620073511/http://www.marvell.com/embedded-processors/kirkwood/assets/HW\\_88F6281\\_OpenSource.pdf](https://web.archive.org/web/20120620073511/http://www.marvell.com/embedded-processors/kirkwood/assets/HW_88F6281_OpenSource.pdf)
  - Functional Spec: [https://web.archive.org/web/20130730091033/http://www.marvell.com/embedded-processors/kirkwood/assets/FS\\_88F6180\\_9x\\_6281\\_OpenSource.pdf](https://web.archive.org/web/20130730091033/http://www.marvell.com/embedded-processors/kirkwood/assets/FS_88F6180_9x_6281_OpenSource.pdf)
- 88F6321
- 88F6322
- 88F6323
  - Product Brief: [https://web.archive.org/web/20120616201639/http://www.marvell.com/embedded-processors/kirkwood/assets/88f632x\\_pb.pdf](https://web.archive.org/web/20120616201639/http://www.marvell.com/embedded-processors/kirkwood/assets/88f632x_pb.pdf)

Homepage:

<https://web.archive.org/web/20160513194943/http://www.marvell.com/embedded-processors/kirkwood/>

Core:

Feroceon 88f131 ARMv5 compatible

Linux kernel mach directory:

arch/arm/mach-mvebu

Linux kernel plat directory:

none

## Discovery family

Flavors:

- MV78100
  - Product Brief: [https://web.archive.org/web/20120616194711/http://www.marvell.com/embedded-processors/discovery-innovation/assets/MV78100-003\\_WEB.pdf](https://web.archive.org/web/20120616194711/http://www.marvell.com/embedded-processors/discovery-innovation/assets/MV78100-003_WEB.pdf)
  - Hardware Spec : [https://web.archive.org/web/20141005120451/http://www.marvell.com/embedded-processors/discovery-innovation/assets/HW\\_MV78100\\_OpenSource.pdf](https://web.archive.org/web/20141005120451/http://www.marvell.com/embedded-processors/discovery-innovation/assets/HW_MV78100_OpenSource.pdf)
  - Functional Spec: [https://web.archive.org/web/20111110081125/http://www.marvell.com/embedded-processors/discovery-innovation/assets/FS\\_MV76100\\_78100\\_78200\\_OpenSource.pdf](https://web.archive.org/web/20111110081125/http://www.marvell.com/embedded-processors/discovery-innovation/assets/FS_MV76100_78100_78200_OpenSource.pdf)
- MV78200
  - Product Brief: [https://web.archive.org/web/20140801121623/http://www.marvell.com/embedded-processors/discovery-innovation/assets/MV78200-002\\_WEB.pdf](https://web.archive.org/web/20140801121623/http://www.marvell.com/embedded-processors/discovery-innovation/assets/MV78200-002_WEB.pdf)
  - Hardware Spec : [https://web.archive.org/web/20141005120458/http://www.marvell.com/embedded-processors/discovery-innovation/assets/HW\\_MV78200\\_OpenSource.pdf](https://web.archive.org/web/20141005120458/http://www.marvell.com/embedded-processors/discovery-innovation/assets/HW_MV78200_OpenSource.pdf)
  - Functional Spec: [https://web.archive.org/web/20111110081125/http://www.marvell.com/embedded-processors/discovery-innovation/assets/FS\\_MV76100\\_78100\\_78200\\_OpenSource.pdf](https://web.archive.org/web/20111110081125/http://www.marvell.com/embedded-processors/discovery-innovation/assets/FS_MV76100_78100_78200_OpenSource.pdf)
- MV76100
  - Product Brief: <https://web.archive.org/web/20140722064429/http://www.marvell.com/embedded->

[processors/discovery-innovation/assets/MV76100-002\\_WEB.pdf](https://web.archive.org/web/20140722064425/http://www.marvell.com/embedded-processors/discovery-innovation/assets/MV76100-002_WEB.pdf)

- Hardware Spec : [https://web.archive.org/web/20140722064425/http://www.marvell.com/embedded-processors/discovery-innovation/assets/HW\\_MV76100\\_OpenSource.pdf](https://web.archive.org/web/20140722064425/http://www.marvell.com/embedded-processors/discovery-innovation/assets/HW_MV76100_OpenSource.pdf)
- Functional Spec: [https://web.archive.org/web/20111110081125/http://www.marvell.com/embedded-processors/discovery-innovation/assets/FS\\_MV76100\\_78100\\_78200\\_OpenSource.pdf](https://web.archive.org/web/20111110081125/http://www.marvell.com/embedded-processors/discovery-innovation/assets/FS_MV76100_78100_78200_OpenSource.pdf)

Not supported by the Linux kernel.

Homepage:

<https://web.archive.org/web/20110924171043/http://www.marvell.com/embedded-processors/discovery-innovation/>

Core:

Feroceon 88f571-vd ARMv5 compatible

Linux kernel mach directory:

arch/arm/mach-mv78xx0

Linux kernel plat directory:

arch/arm/plat-orion

## EBU Armada family

Armada 370 Flavors:

- 88F6710
- 88F6707
- 88F6W11
- Product infos: <https://web.archive.org/web/20141002083258/http://www.marvell.com/embedded-processors/armada-370/>
- Product Brief: [https://web.archive.org/web/20121115063038/http://www.marvell.com/embedded-processors/armada-300/assets/Marvell\\_ARMADA\\_370\\_SoC.pdf](https://web.archive.org/web/20121115063038/http://www.marvell.com/embedded-processors/armada-300/assets/Marvell_ARMADA_370_SoC.pdf)
- Hardware Spec: <https://web.archive.org/web/20140617183747/http://www.marvell.com/embedded-processors/armada-300/assets/ARMADA370-datasheet.pdf>
- Functional Spec: <https://web.archive.org/web/20140617183701/http://www.marvell.com/embedded-processors/armada-300/assets/ARMADA370-FunctionalSpec-datasheet.pdf>

Core:

Sheeva ARMv7 compatible PJ4B

Armada XP Flavors:

- MV78230
- MV78260
- MV78460

NOTE:

not to be confused with the non-SMP 78xx0 SoCs

- Product infos: <https://web.archive.org/web/20150101215721/http://www.marvell.com/embedded-processors/armada-xp/>
- Product Brief: <https://web.archive.org/web/20121021173528/http://www.marvell.com/embedded-processors/armada-xp/assets/Marvell-ArmadaXP-SoC-product%20brief.pdf>
- Functional Spec: <https://web.archive.org/web/20180829171131/http://www.marvell.com/embedded-processors/armada-xp/assets/ARMADA-XP-Functional-SpecDatasheet.pdf>
- Hardware Specs:
  - [https://web.archive.org/web/20141127013651/http://www.marvell.com/embedded-processors/armada-xp/assets/HW\\_MV78230\\_OS.PDF](https://web.archive.org/web/20141127013651/http://www.marvell.com/embedded-processors/armada-xp/assets/HW_MV78230_OS.PDF)
  - [https://web.archive.org/web/20141222000224/http://www.marvell.com/embedded-processors/armada-xp/assets/HW\\_MV78260\\_OS.PDF](https://web.archive.org/web/20141222000224/http://www.marvell.com/embedded-processors/armada-xp/assets/HW_MV78260_OS.PDF)
  - [https://web.archive.org/web/20141222000230/http://www.marvell.com/embedded-processors/armada-xp/assets/HW\\_MV78460\\_OS.PDF](https://web.archive.org/web/20141222000230/http://www.marvell.com/embedded-processors/armada-xp/assets/HW_MV78460_OS.PDF)

Core:

Sheeva ARMv7 compatible Dual-core or Quad-core PJ4B-MP

Armada 375 Flavors:

- 88F6720
- Product infos: <https://web.archive.org/web/20140108032402/http://www.marvell.com/embedded-processors/armada-375/>
- Product Brief: [https://web.archive.org/web/20131216023516/http://www.marvell.com/embedded-processors/armada-300/assets/ARMADA\\_375\\_SoC-01\\_product\\_brief.pdf](https://web.archive.org/web/20131216023516/http://www.marvell.com/embedded-processors/armada-300/assets/ARMADA_375_SoC-01_product_brief.pdf)

Core:

ARM Cortex-A9

Armada 38x Flavors:

- 88F6810 Armada 380
- 88F6811 Armada 381
- 88F6821 Armada 382
- 88F6W21 Armada 383

- 88F6820 Armada 385
- 88F6825
- 88F6828 Armada 388

- Product info: <https://web.archive.org/web/20181006144616/http://www.marvell.com/embedded-processors/armada-38x/>
- Functional Spec: <https://web.archive.org/web/20200420191927/https://www.marvell.com/content/dam/marvell/en/public-collateral/embedded-processors/marvell-embedded-processors-armada-38x-functional-specifications-2015-11.pdf>
- Hardware Spec: <https://web.archive.org/web/20180713105318/https://www.marvell.com/docs/embedded-processors/assets/marvell-embedded-processors-armada-38x-hardware-specifications-2017-03.pdf>
- Design guide: <https://web.archive.org/web/20180712231737/https://www.marvell.com/docs/embedded-processors/assets/marvell-embedded-processors-armada-38x-hardware-design-guide-2017-08.pdf>

Core:

ARM Cortex-A9

Armada 39x Flavors:

- 88F6920 Armada 390
- 88F6925 Armada 395
- 88F6928 Armada 398
- Product info: <https://web.archive.org/web/20181020222559/http://www.marvell.com/embedded-processors/armada-39x/>

Core:

ARM Cortex-A9

Linux kernel mach directory:

arch/arm/mach-mvebu

Linux kernel plat directory:

none

## EBU Armada family ARMv8

Armada 3710/3720 Flavors:

- 88F3710
- 88F3720

Core:

ARM Cortex A53 (ARMv8)

Homepage:

<https://web.archive.org/web/20181103003602/http://www.marvell.com/embedded-processors/armada-3700/>

Product Brief:

<https://web.archive.org/web/20210121194810/https://www.marvell.com/content/dam/marvell/en/public-collateral/embedded-processors/marvell-embedded-processors-armada-37xx-product-brief-2016-01.pdf>

Hardware Spec:

<https://web.archive.org/web/20210202162011/http://www.marvell.com/content/dam/marvell/en/public-collateral/embedded-processors/marvell-embedded-processors-armada-37xx-hardware-specifications-2019-09.pdf>

Device tree files:

arch/arm64/boot/dts/marvell/armada-37\*

Armada 7K Flavors:

- 88F6040 (AP806 Quad 600 MHz + one CP110)
- 88F7020 (AP806 Dual + one CP110)
- 88F7040 (AP806 Quad + one CP110)

Core: ARM Cortex A72

Homepage:

<https://web.archive.org/web/20181020222606/http://www.marvell.com/embedded-processors/armada-70xx/>

Product Brief:

- <https://web.archive.org/web/20161010105541/http://www.marvell.com/embedded-processors/assets/Armada7020PB-Jan2016.pdf>
- <https://web.archive.org/web/20160928154533/http://www.marvell.com/embedded-processors/assets/Armada7040PB-Jan2016.pdf>

Device tree files:

arch/arm64/boot/dts/marvell/armada-70\*

Armada 8K Flavors:

- 88F8020 (AP806 Dual + two CP110)
- 88F8040 (AP806 Quad + two CP110)

Core:

ARM Cortex A72

Homepage:

<https://web.archive.org/web/20181022004830/http://www.marvell.com/embedded-processors/armada-80xx/>

Product Brief:

- <https://web.archive.org/web/20210124233728/https://www.marvell.com/content/dam/marvell/en/public-collateral/embedded-processors/marvell-embedded-processors-armada-8020-product-brief-2017-12.pdf>
- <https://web.archive.org/web/20161010105532/http://www.marvell.com/embedded-processors/assets/Armada8040PB-Jan2016.pdf>

Device tree files:

arch/arm64/boot/dts/marvell/armada-80\*

Octeon TX2 CN913x Flavors:

- CN9130 (AP807 Quad + one internal CP115)
- CN9131 (AP807 Quad + one internal CP115 + one external CP115 / 88F8215)
- CN9132 (AP807 Quad + one internal CP115 + two external CP115 / 88F8215)

Core:

ARM Cortex A72

Homepage:

<https://web.archive.org/web/20200803150818/https://www.marvell.com/products/infrastructure-processors/multi-core-processors/octeon-tx2/octeon-tx2-cn9130.html>

Product Brief:

<https://web.archive.org/web/20200803150818/https://www.marvell.com/content/dam/marvell/en/public-collateral/embedded-processors/marvell-infrastructure-processors/octeon-tx2-cn913x-product-brief-2020-02.pdf>

Device tree files:

arch/arm64/boot/dts/marvell/cn913\*

## Avanta family

Flavors:

- 88F6500
- 88F6510
- 88F6530P
- 88F6550
- 88F6560
- 88F6601

Homepage:

<https://web.archive.org/web/20181005145041/http://www.marvell.com/broadband/>

Product Brief:

[https://web.archive.org/web/20180829171057/http://www.marvell.com/broadband/assets/Marvell\\_Avanta\\_88F6510\\_305\\_060-001\\_product\\_brief.pdf](https://web.archive.org/web/20180829171057/http://www.marvell.com/broadband/assets/Marvell_Avanta_88F6510_305_060-001_product_brief.pdf)

No public datasheet available.

Core:

ARMv5 compatible

Linux kernel mach directory:

no code in mainline yet, planned for the future

Linux kernel plat directory:

no code in mainline yet, planned for the future

## Storage family

Armada SP:

- 88RC1580

Product infos:

<https://web.archive.org/web/20191129073953/http://www.marvell.com/storage/armada-sp/>

Core:

Sheeva ARMv7 compatible Quad-core PJ4C

(not supported in upstream Linux kernel)

## Dove family (application processor)

Flavors:

- 88AP510 a.k.a Armada 510

Product Brief:

[https://web.archive.org/web/20111102020643/http://www.marvell.com/application-processors/armada-500/assets/Marvell\\_Amada510\\_SoC.pdf](https://web.archive.org/web/20111102020643/http://www.marvell.com/application-processors/armada-500/assets/Marvell_Amada510_SoC.pdf)

Hardware Spec:

<https://web.archive.org/web/20160428160231/http://www.marvell.com/application-processors/armada-500/assets/Armada-510-Hardware-Spec.pdf>

Functional Spec:

<https://web.archive.org/web/20120130172443/http://www.marvell.com/application-processors/armada-500/assets/Armada-510-Functional-Spec.pdf>

Homepage:

<https://web.archive.org/web/20160822232651/http://www.marvell.com/application-processors/armada-500/>

Core:

ARMv7 compatible

Directory:

- arch/arm/mach-mvebu (DT enabled platforms)
- arch/arm/mach-dove (non-DT enabled platforms)

## PXA 2xx/3xx/93x/95x family

Flavors:

- PXA21x, PXA25x, PXA26x
  - Application processor only

- Core: ARMv5 XScale1 core
- PXA270, PXA271, PXA272
  - Product Brief :  
[https://web.archive.org/web/20150927135510/http://www.marvell.com/application-processors/pxa-family/assets/pxa\\_27x\\_pb.pdf](https://web.archive.org/web/20150927135510/http://www.marvell.com/application-processors/pxa-family/assets/pxa_27x_pb.pdf)
  - Design guide :  
[https://web.archive.org/web/20120111181937/http://www.marvell.com/application-processors/pxa-family/assets/pxa\\_27x\\_design\\_guide.pdf](https://web.archive.org/web/20120111181937/http://www.marvell.com/application-processors/pxa-family/assets/pxa_27x_design_guide.pdf)
  - Developers manual :  
[https://web.archive.org/web/20150927164805/http://www.marvell.com/application-processors/pxa-family/assets/pxa\\_27x\\_dev\\_man.pdf](https://web.archive.org/web/20150927164805/http://www.marvell.com/application-processors/pxa-family/assets/pxa_27x_dev_man.pdf)
  - Specification :  
[https://web.archive.org/web/20140211221535/http://www.marvell.com/application-processors/pxa-family/assets/pxa\\_27x\\_ents.pdf](https://web.archive.org/web/20140211221535/http://www.marvell.com/application-processors/pxa-family/assets/pxa_27x_ents.pdf)
  - Specification update :  
[https://web.archive.org/web/20120111104906/http://www.marvell.com/application-processors/pxa-family/assets/pxa\\_27x\\_spec\\_update.pdf](https://web.archive.org/web/20120111104906/http://www.marvell.com/application-processors/pxa-family/assets/pxa_27x_spec_update.pdf)
  - Application processor only
  - Core: ARMv5 XScale2 core
- PXA300, PXA310, PXA320
  - PXA 300 Product Brief :  
[https://web.archive.org/web/20120111121203/http://www.marvell.com/application-processors/pxa-family/assets/PXA300\\_PB\\_R4.pdf](https://web.archive.org/web/20120111121203/http://www.marvell.com/application-processors/pxa-family/assets/PXA300_PB_R4.pdf)
  - PXA 310 Product Brief :  
[https://web.archive.org/web/20120111104515/http://www.marvell.com/application-processors/pxa-family/assets/PXA310\\_PB\\_R4.pdf](https://web.archive.org/web/20120111104515/http://www.marvell.com/application-processors/pxa-family/assets/PXA310_PB_R4.pdf)
  - PXA 320 Product Brief :  
[https://web.archive.org/web/20121021182826/http://www.marvell.com/application-processors/pxa-family/assets/PXA320\\_PB\\_R4.pdf](https://web.archive.org/web/20121021182826/http://www.marvell.com/application-processors/pxa-family/assets/PXA320_PB_R4.pdf)
  - Design guide :  
[https://web.archive.org/web/20130727144625/http://www.marvell.com/application-processors/pxa-family/assets/PXA3xx\\_Design\\_Guide.pdf](https://web.archive.org/web/20130727144625/http://www.marvell.com/application-processors/pxa-family/assets/PXA3xx_Design_Guide.pdf)
  - Developers manual :  
[https://web.archive.org/web/20130727144605/http://www.marvell.com/application-processors/pxa-family/assets/PXA3xx\\_Developers\\_Manual.zip](https://web.archive.org/web/20130727144605/http://www.marvell.com/application-processors/pxa-family/assets/PXA3xx_Developers_Manual.zip)
  - Specifications :  
[https://web.archive.org/web/20130727144559/http://www.marvell.com/application-processors/pxa-family/assets/PXA3xx\\_EMITS.pdf](https://web.archive.org/web/20130727144559/http://www.marvell.com/application-processors/pxa-family/assets/PXA3xx_EMITS.pdf)
  - Specification Update :  
[https://web.archive.org/web/20150927183411/http://www.marvell.com/application-processors/pxa-family/assets/PXA3xx\\_Spec\\_Update.zip](https://web.archive.org/web/20150927183411/http://www.marvell.com/application-processors/pxa-family/assets/PXA3xx_Spec_Update.zip)
  - Reference Manual :  
[https://web.archive.org/web/20120111103844/http://www.marvell.com/application-processors/pxa-family/assets/PXA3xx\\_TavorP\\_BootROM\\_Ref\\_Manual.pdf](https://web.archive.org/web/20120111103844/http://www.marvell.com/application-processors/pxa-family/assets/PXA3xx_TavorP_BootROM_Ref_Manual.pdf)
  - Application processor only
  - Core: ARMv5 XScale3 core
- PXA930, PXA935
  - Application processor with Communication processor
  - Core: ARMv5 XScale3 core
- PXA955
  - Application processor with Communication processor
  - Core: ARMv7 compatible Sheeva PJ4 core

#### Comments:

- This line of SoCs originates from the XScale family developed by Intel and acquired by Marvell in ~2006. The PXA21x, PXA25x, PXA26x, PXA27x, PXA3xx and PXA93x were developed by Intel, while the later PXA95x were developed by Marvell.
- Due to their XScale origin, these SoCs have virtually nothing in common with the other (Kirkwood, Dove, etc.) families of Marvell SoCs, except with the MMP/MMP2 family of SoCs.

Linux kernel mach directory:

arch/arm/mach-pxa

Linux kernel plat directory:

arch/arm/plat-pxa

## MMP/MMP2/MMP3 family (communication processor)

#### Flavors:

- PXA168, a.k.a Armada 168
  - Homepage : <https://web.archive.org/web/20110926014256/http://www.marvell.com/application-processors/armada-100/armada-168.jsp>
  - Product brief :  
[https://web.archive.org/web/20111102030100/http://www.marvell.com/application-processors/armada-100/assets/pxa\\_168\\_pb.pdf](https://web.archive.org/web/20111102030100/http://www.marvell.com/application-processors/armada-100/assets/pxa_168_pb.pdf)
  - Hardware manual :  
[https://web.archive.org/web/20160428165359/http://www.marvell.com/application-processors/armada-100/assets/armada\\_16x\\_datasheet.pdf](https://web.archive.org/web/20160428165359/http://www.marvell.com/application-processors/armada-100/assets/armada_16x_datasheet.pdf)
  - Software manual :  
[https://web.archive.org/web/20160428154454/http://www.marvell.com/application-processors/armada-100/assets/armada\\_16x\\_sw\\_manual.pdf](https://web.archive.org/web/20160428154454/http://www.marvell.com/application-processors/armada-100/assets/armada_16x_sw_manual.pdf)

- processors/armada-100/assets/armada\_16x\_software\_manual.pdf
  - Specification update :  
[https://web.archive.org/web/20150927160338/http://www.marvell.com/application-processors/armada-100/assets/ARMADA16x\\_Spec\\_update.pdf](https://web.archive.org/web/20150927160338/http://www.marvell.com/application-processors/armada-100/assets/ARMADA16x_Spec_update.pdf)
  - Boot ROM manual :  
[https://web.archive.org/web/20130727205559/http://www.marvell.com/application-processors/armada-100/assets/armada\\_16x\\_ref\\_manual.pdf](https://web.archive.org/web/20130727205559/http://www.marvell.com/application-processors/armada-100/assets/armada_16x_ref_manual.pdf)
  - App node package :  
[https://web.archive.org/web/20141005090706/http://www.marvell.com/application-processors/armada-100/assets/armada\\_16x\\_app\\_note\\_package.pdf](https://web.archive.org/web/20141005090706/http://www.marvell.com/application-processors/armada-100/assets/armada_16x_app_note_package.pdf)
  - Application processor only
  - Core: ARMv5 compatible Marvell PJ1 88sv331 (Mohawk)
- PXA910/PXA920
  - Homepage :  
<https://web.archive.org/web/20150928121236/http://www.marvell.com/communication-processors/pxa910/>
  - Product Brief: [https://archive.org/download/marvell-pxa910-pb/Marvell\\_PXA910\\_Platform-001\\_PB.pdf](https://archive.org/download/marvell-pxa910-pb/Marvell_PXA910_Platform-001_PB.pdf)
  - Application processor with Communication processor
  - Core: ARMv5 compatible Marvell PJ1 88sv331 (Mohawk)
- PXA688, a.k.a. MMP2, a.k.a. Armada 610 (OLPC XO-1.75)
  - Product Brief: [https://web.archive.org/web/20111102023255/http://www.marvell.com/application-processors/armada-600/assets/armada610\\_pb.pdf](https://web.archive.org/web/20111102023255/http://www.marvell.com/application-processors/armada-600/assets/armada610_pb.pdf)
  - Application processor only
  - Core: ARMv7 compatible Sheeva PJ4 88sv581x core
- PXA2128, a.k.a. MMP3, a.k.a. Armada 620 (OLPC XO-4)
  - Product Brief: <https://web.archive.org/web/20120824055155/http://www.marvell.com/application-processors/armada/pxa2128/assets/Marvell-ARMADA-PXA2128-SoC-PB.pdf>
  - Application processor only
  - Core: Dual-core ARMv7 compatible Sheeva PJ4C core
- PXA960/PXA968/PXA978 (Linux support not upstream)
  - Application processor with Communication Processor
  - Core: ARMv7 compatible Sheeva PJ4 core
- PXA986/PXA988 (Linux support not upstream)
  - Application processor with Communication Processor
  - Core: Dual-core ARMv7 compatible Sheeva PJ4B-MP core
- PXA1088/PXA1920 (Linux support not upstream)
  - Application processor with Communication Processor
  - Core: quad-core ARMv7 Cortex-A7
- PXA1908/PXA1928/PXA1936
  - Application processor with Communication Processor
  - Core: multi-core ARMv8 Cortex-A53

Comments:

- This line of SoCs originates from the XScale family developed by Intel and acquired by Marvell in ~2006. All the processors of this MMP/MMP2 family were developed by Marvell.
- Due to their XScale origin, these SoCs have virtually nothing in common with the other (Kirkwood, Dove, etc.) families of Marvell SoCs, except with the PXA family of SoCs listed above.

Linux kernel mach directory:

arch/arm/mach-mmp

Linux kernel plat directory:

arch/arm/plat-pxa

## Berlin family (Multimedia Solutions)

- Flavors:
  - 88DE3010, Armada 1000 (no Linux support)
    - Core: Marvell PJ1 (ARMv5TE), Dual-core
    - Product Brief: [https://web.archive.org/web/20131103162620/http://www.marvell.com/digital-entertainment/assets/armada\\_1000\\_pb.pdf](https://web.archive.org/web/20131103162620/http://www.marvell.com/digital-entertainment/assets/armada_1000_pb.pdf)
  - 88DE3005, Armada 1500 Mini
    - Design name: BG2CD
    - Core: ARM Cortex-A9, PL310 L2CC
  - 88DE3006, Armada 1500 Mini Plus
    - Design name: BG2CDP
    - Core: Dual Core ARM Cortex-A7
  - 88DE3100, Armada 1500
    - Design name: BG2
    - Core: Marvell PJ4B-MP (ARMv7), Tauros3 L2CC
  - 88DE3114, Armada 1500 Pro
    - Design name: BG2Q
    - Core: Quad Core ARM Cortex-A9, PL310 L2CC
  - 88DE3214, Armada 1500 Pro 4K

- Design name: BG3
- Core: ARM Cortex-A15, CA15 integrated L2CC
- 88DE3218, ARMADA 1500 Ultra
  - Core: ARM Cortex-A53

Homepage: <https://www.synaptics.com/products/multimedia-solutions> Directory: arch/arm/mach-berlin

Comments:

- This line of SoCs is based on Marvell Sheeva or ARM Cortex CPUs with Synopsys DesignWare (IRQ, GPIO, Timers, ...) and PXA IP (SDHCI, USB, ETH, ...).
- The Berlin family was acquired by Synaptics from Marvell in 2017.

## CPU Cores

The XScale cores were designed by Intel, and shipped by Marvell in the older PXA processors. Feroceon is a Marvell designed core that developed in-house, and that evolved into Sheeva. The XScale and Feroceon cores were phased out over time and replaced with Sheeva cores in later products, which subsequently got replaced with licensed ARM Cortex-A cores.

XScale 1  
CPUID 0x69052xxx ARMv5, iWMMXt

XScale 2  
CPUID 0x69054xxx ARMv5, iWMMXt

XScale 3  
CPUID 0x69056xxx or 0x69056xxx ARMv5, iWMMXt

Feroceon-1850 88f331 "Mohawk"  
CPUID 0x5615331x or 0x41xx926x ARMv5TE, single issue

Feroceon-2850 88f531-vd "Jolteon"  
CPUID 0x5605531x or 0x41xx926x ARMv5TE, VFP, dual-issue

Feroceon 88f571-vd "Jolteon"  
CPUID 0x5615571x ARMv5TE, VFP, dual-issue

Feroceon 88f131 "Mohawk-D"  
CPUID 0x5625131x ARMv5TE, single-issue in-order

Sheeva PJ1 88sv331 "Mohawk"  
CPUID 0x561584xx ARMv5, single-issue iWMMXt v2

Sheeva PJ4 88sv581x "Flareon"  
CPUID 0x560f581x ARMv7, idivt, optional iWMMXt v2

Sheeva PJ4B 88sv581x  
CPUID 0x561f581x ARMv7, idivt, optional iWMMXt v2

Sheeva PJ4B-MP / PJ4C  
CPUID 0x562f584x ARMv7, idivt/idiva, LPAE, optional iWMMXt v2 and/or NEON

## Long-term plans

- Unify the mach-dove/, mach-mv78xx0/, mach-orion5x/ into the mach-mvebu/ to support all SoCs from the Marvell EBU (Engineering Business Unit) in a single mach-<foo> directory. The plat-orion/ would therefore disappear.
- Unify the mach-nmp/ and mach-pxa/ into the same mach-pxa directory. The plat-pxa/ would therefore disappear.

## Credits

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