

Raspberry Pi 4 - VMware ESXi - BCM2711

Virtual Machine on VMware ESXi 7.0 Release 1.13, Dual-Core Virtual Machine. Host @2100 MHz

Linux raspberrypi4 6.3.0-1-arm64 #1 SMP Debian 6.3.7-1 (2023-06-12) aarch64 GNU/Linux

08.07.2023

sbc-bench v0.9.42

Installing needed tools: Done.

Checking cpufreq OPP. Done (results will be available in 9-14 minutes).

Executing tinymembench. Done.

Executing RAM latency tester. Done.

Executing OpenSSL benchmark. Done.

Executing 7-zip

benchmark...

Done.

Checking cpufreq OPP again. Done (9 minutes elapsed).

Results validation:

* No swapping

* Throttling occurred

Memory performance

memcpy: 2421.0 MB/s

memset: 3243.7 MB/s

7-zip total scores (3 consecutive runs): 3341,3410,3393, single-threaded: 1798

OpenSSL results:

type	16 bytes	64 bytes	256 bytes	1024 bytes	8192 bytes	16384 bytes
------	----------	----------	-----------	------------	------------	-------------

aes-128-cbc	49447.93k	53976.09k	55393.79k	55831.21k	55986.86k	55907.67k
-------------	-----------	-----------	-----------	-----------	-----------	-----------

aes-128-cbc	49542.43k	53921.32k	55418.20k	55851.69k	55965.01k	56027.82k
aes-192-cbc	42226.14k	45174.42k	46304.00k	46683.14k	46631.59k	46830.93k
aes-192-cbc	41792.09k	44896.04k	46208.77k	46623.74k	46918.31k	46749.01k
aes-256-cbc	36586.13k	38903.94k	39674.79k	40048.98k	40012.46k	40080.73k
aes-256-cbc	36114.35k	39022.19k	39820.71k	39884.12k	40108.03k	39927.81k

Full Result

sbc-bench v0.9.42 VMware Cortex-A72 VM (Sat, 08 Jul 2023 15:08:50 +0200)

Distributor ID:Debian

Description:Debian GNU/Linux trixie/sid

Codename:trixie

Device Info:

Manufacturer: VMware, Inc.

Product Name: VMware20,1

Version: 1

SKU Number: 00000000000000001

Family: VMware

BIOS/UEFI:

Vendor: VMware, Inc.

Version: VMW201.00V.21747440.BA64.2305102224

Release Date: 05/10/2023

/usr/bin/gcc (Debian 12.3.0-4) 12.3.0

Uptime: 15:08:50 up 7 min, 2 users, load average: 0.08, 0.04, 0.01, °C, 182776534

Linux 6.3.0-1-arm64 (raspberrypi4) 07/08/23 aarch64 (2 CPU)

avg-cpu: %user %nice %system %iowait %steal %idle

0.66 0.00 1.29 0.46 0.00 97.60

Device	tps	kB_read/s	kB_wrtn/s	kB_dscd/s	kB_read	kB_wrtn	kB_dscd
sda	15.09	656.11	27.82	0.00	294193	12476	0

total	used	free	shared	buff/cache	available
-------	------	------	--------	------------	-----------

Mem: 974Mi 189Mi 754Mi 572Ki 98Mi 784Mi
Swap: 951Mi 0B 951Mi

FilenameTypeSizeUsedPriority
/dev/sda3 partition97484400-2

#####

Checking cpufreq OPP (Cortex-A72):

No cpufreq support available. Measured on cpu1: 1990 MHz (1990.790/1990.163/1989.586)

#####

Executing benchmark on cpu0 (Cortex-A72):

tinymembench v0.4.9-numio (simple benchmark for memory throughput and latency)

CFLAGS:

bandwidth test min repeats (-b): 2
bandwidth test max repeats (-B): 3
bandwidth test mem realloc (-M): no (-m for realloc)
latency test repeats (-l): 3
latency test count (-c): 1000000

=====
=====

== Memory bandwidth tests ==
==
==
== Note 1: 1MB = 1000000 bytes ==
== Note 2: Test result is the best of repeated runs. Number of repeats ==
== is shown in brackets ==
== Note 3: Results for 'copy' tests show how many bytes can be ==
== copied per second (adding together read and writen ==
== bytes would have provided twice higher numbers) ==
== Note 4: 2-pass copy means that we are using a small temporary buffer ==
== to first fetch data into it, and only then write it to the ==

== destination (source -> L1 cache, L1 cache -> destination) ==

== Note 5: If sample standard deviation exceeds 0.1%, it is shown in ==

== brackets ==

=====

C copy backwards	: 2146.2 MB/s (3, 7.9%)
C copy backwards (32 byte blocks)	: 2417.3 MB/s (3, 0.7%)
C copy backwards (64 byte blocks)	: 2429.6 MB/s (3, 0.8%)
C copy	: 2430.3 MB/s (3, 0.3%)
C copy prefetched (32 bytes step)	: 2416.9 MB/s (3, 1.6%)
C copy prefetched (64 bytes step)	: 2420.6 MB/s (2)
C 2-pass copy	: 1559.1 MB/s (3, 0.3%)
C 2-pass copy prefetched (32 bytes step)	: 1733.8 MB/s (3, 2.7%)
C 2-pass copy prefetched (64 bytes step)	: 1750.9 MB/s (3, 1.1%)
C scan 8	: 976.3 MB/s (3, 0.3%)
C scan 16	: 1936.6 MB/s (3, 0.7%)
C scan 32	: 3675.3 MB/s (3, 1.1%)
C scan 64	: 4006.4 MB/s (3, 0.6%)
C fill	: 3276.2 MB/s (3, 0.6%)
C fill (shuffle within 16 byte blocks)	: 3272.8 MB/s (2)
C fill (shuffle within 32 byte blocks)	: 3267.8 MB/s (3, 0.8%)
C fill (shuffle within 64 byte blocks)	: 3269.3 MB/s (3, 0.4%)

libc memcpy copy	: 2421.0 MB/s (3, 0.4%)
libc memchr scan	: 4017.9 MB/s (3, 1.2%)
libc memset fill	: 3243.7 MB/s (3, 0.4%)

NEON LDP/STP copy	: 2426.9 MB/s (3, 1.7%)
NEON LDP/STP copy pldl2strm (32 bytes step)	: 2402.2 MB/s (3, 0.5%)
NEON LDP/STP copy pldl2strm (64 bytes step)	: 2396.6 MB/s (3, 1.6%)
NEON LDP/STP copy pldl1keep (32 bytes step)	: 2413.2 MB/s (3, 1.9%)
NEON LDP/STP copy pldl1keep (64 bytes step)	: 1757.2 MB/s (3, 5.9%)
NEON LD1/ST1 copy	: 2426.1 MB/s (3, 1.0%)
NEON LDP load	: 4020.3 MB/s (2)
NEON LDNP load	: 3973.5 MB/s (3, 21.6%)
NEON STP fill	: 3220.0 MB/s (3, 8.5%)
NEON STNP fill	: 3063.7 MB/s (3, 3.9%)
ARM LDP/STP copy	: 2343.3 MB/s (3, 19.4%)

ARM LDP load : 4006.4 MB/s (3, 3.5%)
ARM LDNP load : 4002.0 MB/s (2)
ARM STP fill : 3274.8 MB/s (3, 0.2%)
ARM STNP fill : 3066.6 MB/s (3, 2.9%)

=====

== Framebuffer read tests. ==
==
== Many ARM devices use a part of the system memory as the framebuffer, ==
== typically mapped as uncached but with write-combining enabled. ==
== Writes to such framebuffers are quite fast, but reads are much ==
== slower and very sensitive to the alignment and the selection of ==
== CPU instructions which are used for accessing memory. ==
==
== Many x86 systems allocate the framebuffer in the GPU memory, ==
== accessible for the CPU via a relatively slow PCI-E bus. Moreover, ==
== PCI-E is asymmetric and handles reads a lot worse than writes. ==
==
== If uncached framebuffer reads are reasonably fast (at least 100 MB/s ==
== or preferably >300 MB/s), then using the shadow framebuffer layer ==
== is not necessary in Xorg DDX drivers, resulting in a nice overall ==
== performance improvement. For example, the xf86-video-fbturbo DDX ==
== uses this trick. ==

=====

NEON LDP/STP copy (from framebuffer) : 2541.3 MB/s (3, 15.9%)
NEON LDP/STP 2-pass copy (from framebuffer) : 1826.7 MB/s (3, 1.4%)
NEON LD1/ST1 copy (from framebuffer) : 2515.2 MB/s (3, 3.5%)
NEON LD1/ST1 2-pass copy (from framebuffer) : 1847.8 MB/s (3, 2.8%)
ARM LDP/STP copy (from framebuffer) : 2516.5 MB/s (3, 2.0%)
ARM LDP/STP 2-pass copy (from framebuffer) : 1838.1 MB/s (3, 1.1%)

=====

== Memory latency test ==
==
== Average time is measured for random memory accesses in the buffers ==

== of different sizes. The larger is the buffer, the more significant ==
== are relative contributions of TLB, L1/L2 cache misses and SDRAM ==
== accesses. For extremely large buffer sizes we are expecting to see ==
== page table walk with several requests to SDRAM for almost every ==
== memory access (though 64MiB is not nearly large enough to experience ==
== this effect to its fullest). ==

==
==
== Note 1: All the numbers are representing extra time, which needs to ==
== be added to L1 cache latency. The cycle timings for L1 cache ==
== latency can be usually found in the processor documentation. ==
== Note 2: Dual random read means that we are simultaneously performing ==
== two independent memory accesses at a time. In the case if ==
== the memory subsystem can't handle multiple outstanding ==
== requests, dual random read has the same timings as two ==
== single reads performed one after another. ==

=====

block size : single random read / dual random read, [MADV_NOHUGEPAGE]

1024 :	0.0 ns	/	0.0 ns
2048 :	0.0 ns	/	0.0 ns
4096 :	0.0 ns	/	0.0 ns
8192 :	0.0 ns	/	0.0 ns
16384 :	0.0 ns	/	0.0 ns
32768 :	0.1 ns	/	0.0 ns
65536 :	4.4 ns	/	6.7 ns
131072 :	6.6 ns	/	8.9 ns
262144 :	9.6 ns	/	11.9 ns
524288 :	12.2 ns	/	14.2 ns
1048576 :	32.1 ns	/	49.8 ns
2097152 :	83.8 ns	/	120.9 ns
4194304 :	113.3 ns	/	145.0 ns
8388608 :	148.5 ns	/	185.8 ns
16777216 :	165.1 ns	/	212.5 ns
33554432 :	177.4 ns	/	229.7 ns
67108864 :	222.1 ns	/	313.2 ns

block size : single random read / dual random read, [MADV_HUGEPAGE]

1024 :	0.0 ns	/	0.0 ns
--------	--------	---	--------

2048 : 0.0 ns / 0.0 ns
4096 : 0.0 ns / 0.0 ns
8192 : 0.0 ns / 0.0 ns
16384 : 0.0 ns / 0.0 ns
32768 : 2.2 ns / 3.7 ns
65536 : 4.4 ns / 6.7 ns
131072 : 6.7 ns / 8.9 ns
262144 : 9.6 ns / 11.9 ns
524288 : 11.6 ns / 14.2 ns
1048576 : 30.6 ns / 50.4 ns
2097152 : 84.6 ns / 120.8 ns
4194304 : 111.7 ns / 144.5 ns
8388608 : 146.8 ns / 185.3 ns
16777216 : 164.5 ns / 208.4 ns
33554432 : 173.2 ns / 221.4 ns
67108864 : 179.4 ns / 231.5 ns

#####

Executing ramlat on cpu0 (Cortex-A72), results in ns:

size: 1x32 2x32 1x64 2x64 1xPTR 2xPTR 4xPTR 8xPTR
4k: 2.573 2.533 2.516 2.514 2.012 2.015 2.025 4.038
8k: 2.515 2.513 2.516 2.514 2.013 2.014 2.051 4.295
16k: 2.535 2.516 2.515 2.538 2.013 2.012 2.711 4.028
32k: 2.520 2.524 2.525 2.519 2.015 2.017 2.995 4.038
64k: 11.03 11.11 11.10 11.21 10.56 10.92 18.16 36.23
128k: 11.09 11.11 11.10 11.14 10.59 11.68 18.37 36.45
256k: 17.15 16.84 16.96 16.84 16.46 16.41 19.69 36.65
512k: 15.66 15.34 15.93 15.39 18.55 15.70 19.50 36.91
1024k: 96.15 74.11 93.91 70.15 82.78 70.09 80.89 104.9
2048k: 125.7 127.5 129.7 124.4 126.5 118.3 132.6 199.8
4096k: 135.8 134.8 135.8 138.6 136.7 135.8 142.7 183.3
8192k: 185.0 187.0 184.0 185.4 185.5 179.4 186.0 203.9
16384k: 183.2 185.5 185.2 185.9 186.1 185.1 192.9 214.3
32768k: 184.8 187.0 184.8 187.1 187.2 189.6 197.9 221.0
65536k: 185.8 188.8 186.6 188.6 189.5 192.3 199.8 224.8
131072k: 187.2 264.9 192.4 196.3 189.5 207.5 207.1 228.6

#####

Executing benchmark twice on cluster 0 (Cortex-A72)

OpenSSL 3.0.9, built on 30 May 2023 (Library: OpenSSL 3.0.9 30 May 2023)

type	16 bytes	64 bytes	256 bytes	1024 bytes	8192 bytes	16384 bytes
aes-128-cbc	49447.93k	53976.09k	55393.79k	55831.21k	55986.86k	55907.67k
aes-128-cbc	49542.43k	53921.32k	55418.20k	55851.69k	55965.01k	56027.82k
aes-192-cbc	42226.14k	45174.42k	46304.00k	46683.14k	46631.59k	46830.93k
aes-192-cbc	41792.09k	44896.04k	46208.77k	46623.74k	46918.31k	46749.01k
aes-256-cbc	36586.13k	38903.94k	39674.79k	40048.98k	40012.46k	40080.73k
aes-256-cbc	36114.35k	39022.19k	39820.71k	39884.12k	40108.03k	39927.81k

#####

Executing benchmark single-threaded on cpu0 (Cortex-A72)

7-Zip (a) [64] 16.02 : Copyright (c) 1999-2016 Igor Pavlov : 2016-05-21
p7zip Version 16.02 (locale=C,Utf16=off,HugeFiles=on,64 bits,2 CPUs LE)

LE
CPU Freq: - - 64000000 - - - - -

RAM size: 974 MB, # CPU hardware threads: 2
RAM usage: 435 MB, # Benchmark threads: 1

Compressing					Decompressing				
Dict	Speed	Usage	R/U	Rating	Speed	Usage	R/U	Rating	
	KiB/s	%	MIPS	MIPS	KiB/s	%	MIPS	MIPS	
22:	1560	100	1522	1518	24697	100	2112	2109	
23:	1500	100	1531	1529	24158	100	2094	2091	
24:	1414	100	1524	1520	23606	100	2076	2072	
25:	1309	100	1497	1495	23030	100	2052	2050	
----- -----									
Avr:	100	1518	1516		100	2083	2081		

Tot: 100 1801 1798

#####

Executing benchmark 3 times multi-threaded on CPUs 0-1

7-Zip (a) [64] 16.02 : Copyright (c) 1999-2016 Igor Pavlov : 2016-05-21
p7zip Version 16.02 (locale=C,Utf16=off,HugeFiles=on,64 bits,2 CPUs LE)

LE
CPU Freq: - - - - -

RAM size: 974 MB, # CPU hardware threads: 2
RAM usage: 441 MB, # Benchmark threads: 2

Compressing					Decompressing				
Dict	Speed	Usage	R/U Rating		Dict	Speed	Usage	R/U Rating	
	KiB/s	%	MIPS	MIPS		KiB/s	%	MIPS	MIPS
22:	2623	176	1452	2553		47959	198	2068	4095
23:	2613	186	1435	2662		46837	198	2050	4054
24:	2545	187	1466	2737		45543	198	2024	3998
25:	2346	185	1448	2679		44415	197	2005	3953
----- -----									
Avr:	183	1450	2658			198	2037	4025	
Tot:	190	1744	3341						

7-Zip (a) [64] 16.02 : Copyright (c) 1999-2016 Igor Pavlov : 2016-05-21
p7zip Version 16.02 (locale=C,Utf16=off,HugeFiles=on,64 bits,2 CPUs LE)

LE
CPU Freq: - - - - -

RAM size: 974 MB, # CPU hardware threads: 2
RAM usage: 441 MB, # Benchmark threads: 2

Compressing					Decompressing				
Dict	Speed	Usage	R/U Rating		Dict	Speed	Usage	R/U Rating	

	KiB/s	%	MIPS	MIPS		KiB/s	%	MIPS	MIPS
22:	2884	186	1508	2806		48366	199	2080	4130
23:	2680	188	1451	2731		47504	199	2064	4112
24:	2540	187	1460	2732		46113	199	2039	4048
25:	2379	184	1473	2716		45009	199	2017	4006
----- -----									
Avr:		186	1473	2746			199	2050	4074
Tot:		193	1761	3410					

7-Zip (a) [64] 16.02 : Copyright (c) 1999-2016 Igor Pavlov : 2016-05-21
p7zip Version 16.02 (locale=C,Utf16=off,HugeFiles=on,64 bits,2 CPUs LE)

LE
CPU Freq: - - - - -

RAM size: 974 MB, # CPU hardware threads: 2
RAM usage: 441 MB, # Benchmark threads: 2

	Compressing					Decompressing			
Dict	Speed	Usage	R/U	Rating		Speed	Usage	R/U	Rating
	KiB/s	%	MIPS	MIPS		KiB/s	%	MIPS	MIPS
22:	2686	177	1480	2613		48604	199	2088	4150
23:	2642	188	1432	2693		47805	200	2073	4138
24:	2556	187	1473	2749		46454	199	2046	4078
25:	2363	185	1461	2699		45247	199	2024	4027
----- -----									
Avr:		184	1461	2688			199	2058	4098
Tot:		192	1760	3393					

Compression: 2658,2746,2688
Decompression: 4025,4074,4098
Total: 3341,3410,3393

#####

Testing maximum cpufreq again, still under full load. System health now:

Time	CPU n/a	load	%cpu	%sys	%usr	%nice	%io	%irq	Temp
15:17:20:	n/a MHz	1.95	95%	2%	93%	0%	0%	0%	°C

Checking cpufreq OPP (Cortex-A72):

No cpufreq support available. Measured on cpu1: 1992 MHz (1992.379/1992.304/1992.204)

#####

System health while running tinymembench:

Time	CPU n/a	load	%cpu	%sys	%usr	%nice	%io	%irq	Temp
15:08:56:	n/a MHz	0.15	3%	1%	1%	0%	0%	0%	°C
15:09:06:	n/a MHz	0.28	51%	0%	50%	0%	0%	0%	°C
15:09:16:	n/a MHz	0.39	50%	0%	50%	0%	0%	0%	°C
15:09:26:	n/a MHz	0.56	50%	0%	50%	0%	0%	0%	°C
15:09:37:	n/a MHz	0.63	50%	0%	50%	0%	0%	0%	°C
15:09:47:	n/a MHz	0.69	51%	0%	50%	0%	0%	0%	°C
15:09:57:	n/a MHz	0.74	51%	0%	50%	0%	0%	0%	°C
15:10:07:	n/a MHz	0.78	50%	0%	50%	0%	0%	0%	°C
15:10:17:	n/a MHz	0.81	50%	0%	50%	0%	0%	0%	°C
15:10:27:	n/a MHz	0.84	50%	0%	49%	0%	0%	0%	°C

System health while running ramlat:

Time	CPU n/a	load	%cpu	%sys	%usr	%nice	%io	%irq	Temp
15:10:37:	n/a MHz	0.87	11%	1%	10%	0%	0%	0%	°C
15:10:40:	n/a MHz	0.88	50%	0%	50%	0%	0%	0%	°C
15:10:43:	n/a MHz	0.89	50%	0%	50%	0%	0%	0%	°C
15:10:46:	n/a MHz	0.89	50%	0%	50%	0%	0%	0%	°C
15:10:49:	n/a MHz	0.90	50%	0%	50%	0%	0%	0%	°C
15:10:52:	n/a MHz	0.90	50%	0%	50%	0%	0%	0%	°C
15:10:55:	n/a MHz	0.90	50%	0%	50%	0%	0%	0%	°C
15:10:58:	n/a MHz	0.91	50%	0%	49%	0%	0%	0%	°C
15:11:01:	n/a MHz	0.91	50%	0%	50%	0%	0%	0%	°C
15:11:04:	n/a MHz	0.92	50%	0%	49%	0%	0%	0%	°C
15:11:07:	n/a MHz	0.93	50%	1%	49%	0%	0%	0%	°C

15:11:11: n/a MHz 0.93 51% 1% 48% 0% 0% 0% °C

System health while running OpenSSL benchmark:

Time	CPU n/a	load	%cpu	%sys	%usr	%nice	%io	%irq	Temp
15:11:12: n/a MHz	0.93	14%	1%	12%	0%	0%	0%	0%	°C
15:11:28: n/a MHz	0.95	50%	0%	50%	0%	0%	0%	0%	°C
15:11:44: n/a MHz	0.96	50%	0%	50%	0%	0%	0%	0%	°C
15:12:00: n/a MHz	0.97	50%	0%	50%	0%	0%	0%	0%	°C
15:12:16: n/a MHz	0.98	50%	0%	50%	0%	0%	0%	0%	°C
15:12:32: n/a MHz	0.98	50%	0%	50%	0%	0%	0%	0%	°C
15:12:48: n/a MHz	0.99	50%	0%	50%	0%	0%	0%	0%	°C

System health while running 7-zip single core benchmark:

Time	CPU n/a	load	%cpu	%sys	%usr	%nice	%io	%irq	Temp
15:13:00: n/a MHz	0.99	19%	1%	18%	0%	0%	0%	0%	°C
15:13:07: n/a MHz	0.99	50%	0%	49%	0%	0%	0%	0%	°C
15:13:14: n/a MHz	0.99	50%	0%	50%	0%	0%	0%	0%	°C
15:13:21: n/a MHz	0.99	50%	1%	49%	0%	0%	0%	0%	°C
15:13:28: n/a MHz	1.00	50%	0%	49%	0%	0%	0%	0%	°C
15:13:35: n/a MHz	1.00	50%	1%	49%	0%	0%	0%	0%	°C
15:13:42: n/a MHz	1.00	50%	1%	49%	0%	0%	0%	0%	°C
15:13:49: n/a MHz	1.00	50%	0%	49%	0%	0%	0%	0%	°C
15:13:56: n/a MHz	1.00	50%	1%	48%	0%	0%	0%	0%	°C
15:14:03: n/a MHz	1.00	50%	1%	49%	0%	0%	0%	0%	°C
15:14:10: n/a MHz	1.00	50%	1%	49%	0%	0%	0%	0%	°C
15:14:18: n/a MHz	1.00	50%	0%	49%	0%	0%	0%	0%	°C

System health while running 7-zip multi core benchmark:

Time	CPU n/a	load	%cpu	%sys	%usr	%nice	%io	%irq	Temp
15:14:23: n/a MHz	1.16	23%	1%	21%	0%	0%	0%	0%	°C
15:14:52: n/a MHz	1.63	96%	1%	94%	0%	0%	0%	0%	°C
15:15:21: n/a MHz	1.91	95%	2%	92%	0%	0%	0%	0%	°C
15:15:51: n/a MHz	2.01	96%	1%	95%	0%	0%	0%	0%	°C
15:16:21: n/a MHz	2.08	95%	2%	93%	0%	0%	0%	0%	°C
15:16:50: n/a MHz	1.91	96%	1%	94%	0%	0%	0%	0%	°C
15:17:20: n/a MHz	1.95	95%	2%	93%	0%	0%	0%	0%	°C

#####

Linux 6.3.0-1-arm64 (raspberrypi4) 07/08/23 aarch64 (2 CPU)

avg-cpu: %user %nice %system %iowait %steal %idle
35.36 0.02 1.27 0.22 0.00 63.12

Device	tps	kB_read/s	kB_wrtn/s	kB_dscd/s	kB_read	kB_wrtn	kB_dscd
sda	7.70	312.14	15.57	0.00	301621	15048	0

	total	used	free	shared	buff/cache	available
Mem:	974Mi	202Mi	734Mi	568Ki	106Mi	772Mi
Swap:	951Mi	0B	951Mi			

FilenameTypeSizeUsedPriority
/dev/sda3partition97484400-2

CPU sysfs topology (clusters, cpufreq members, clockspeeds)

	cpufreq	min	max	
CPU	cluster	policy	speed	speed core type
0	36	0	- -	Cortex-A72 / r0p3
1	36	0	- -	Cortex-A72 / r0p3

Architecture: aarch64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 2
On-line CPU(s) list: 0,1
Vendor ID: ARM
BIOS Vendor ID: Arm
Model name: Cortex-A72
BIOS Model name: Arm Cortex-A72 r0p3 CPU @ 0.0GHz
BIOS CPU family: 280
Model: 3
Thread(s) per core: 1
Core(s) per socket: 2
Socket(s): 1

Stepping: r0p3
BogoMIPS: 108.00
Flags: fp asimd evtstrm crc32 cpuid
L1d cache: 64 KiB (2 instances)
L1i cache: 96 KiB (2 instances)
L2 cache: 2 MiB (2 instances)
NUMA node(s): 1
NUMA node0 CPU(s): 0,1
Vulnerability Itlb multihit: Not affected
Vulnerability L1tf: Not affected
Vulnerability Mds: Not affected
Vulnerability Meltdown: Not affected
Vulnerability Mmio stale data: Not affected
Vulnerability Retbleed: Not affected
Vulnerability Spec store bypass: Vulnerable
Vulnerability Spectre v1: Mitigation; __user pointer sanitization
Vulnerability Spectre v2: Vulnerable
Vulnerability Srbds: Not affected
Vulnerability Tsx async abort: Not affected

SoC guess: NXP LS1028A / guess flawed since running in vmware

Compiler: /usr/bin/gcc (Debian 12.3.0-4) 12.3.0 / aarch64-linux-gnu

Userland: arm64

Kernel: 6.3.0-1-arm64/aarch64 (vmware)

CONFIG_HZ=250

CONFIG_HZ_250=y

CONFIG_PREEMPT_NOTIFIERS=y

CONFIG_PREEMPT_VOLUNTARY=y

CONFIG_PREEMPT_VOLUNTARY_BUILD=y

#####

Results validation:

* No swapping

* Throttling occurred

Status of performance related policies found below /sys:

* /sys/module/pcie_aspm/parameters/policy: [default] performance powersave powersupersave

| VMware Cortex-A72 VM | ~2000 MHz | 6.3 | Debian GNU/Linux trixie/sid arm64 | 3380 | 1798 | 40000 |
2420 | 3240 | - |

Revision #2

Created 8 July 2023 12:57:33 by XeroX

Updated 8 July 2023 13:39:17 by XeroX