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. 1	WHAT HAPPENS BEFORE APP_MAIN
-	- Let stage bootloader (ROM) loads and stage bootloater to RAM
	CIRAM & DRAM) from blash offset 0x1000 (4096 bytes).
	-2nd stage bootloader loads partition table and main app image
	from black main app incorporates both RAM & read-only
	segments mapped via flash cache.
	- main apprimage executes at this point the 2nd cpu and
	RTOS scheduler can be started.
	PRO CPU + APP CPU
	resort vector code CISR?) ? cannot be modified
	0x4000 0400 mask ROM
0	MREISET FROM DEEP SLEEP
3-	RTC - CNTL STORES - REG - ret address } valid ? jump
Q	POWER ON RESET / SOC / WATCHDOG SOC
	check GPIO_STRAP_BREG if UART / EDIO download made requested.
	sold abunload made requested.
4	SOFTWARE CPU RECET / WATCHDOG CPU
	based on EFUEE land and to
14	based on EFUSE; load code from blash or start BASIC interpreter.
	1st 4KB exctons -
	1st 4KB sector = secure boot IV + signature of app image.
	app binary image.
	1012 1163

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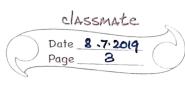
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20.000 cm	0x1000 = 2nd stage bootloader (components / bootloader) Espirit
monto and a second	Solidader) Espilor
20040060	adds flexibility to blash layout Cpartition tables)
word for	support blash encryption
	secure boot
-18-50-15-5	over the air (ota) updates.
and the state of t	Comment of the second s
	0x8000 - partition table
Market Company	bactfory, OTA partitions
and the state of t	OTA into partion -> which one to boot
	a silvene and demonstrate of the second and a second and
West wall grant and	copies data & code sections to IRAM, DRAM.
The state of the s	for load addresses in IROM and DROM regions,
	flosh MMU is configured
Trans-	bootloader can be changed by copying it to build
No. of the second secon	directory. it will be used instead of one in ESP-IDF
Managar Barbara	AS STEEL FROM THE FAMILY A TRANSPORT
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	APPLICATION STARTUP
The same of the sa	PRO CPU
**************************************	call_start_cpuo() : components/esp32/cpu-start.c
entry	-enable heap allocator
Point	- make APP CPU jump to its entry point
- was a second	jumps call_start_cpuic)
weak	start-cpuo()
	weak start-cpul
the same of the sa	



	scheduler is started in both CPUs.			
	upp-main () -> main task			
	Stack size, priority: menuconfig.			
6.1	to a constitute of the state of the state of			
	n and some and a second			
	IRAM			
	instruction RAM			
	ESP-IDF allocates part of internal SRAMO for IRAM.			
	1st 64 KB used for PRO and APP CPU caches			
	0x40080000 -> 0x100A0000			
	used to store parts of application which need to run			
	from RAM.			
	To a main an bosol of the contract of the contract of			
3	few components of ESP-IDE, parts WiFi stack			
	void IRAM_ATTR gpio-isr_handler (void *arg) &			
-				
	3			
	Office files and			
	interrupt handlers must be placed into IRAM is ESPLINTR FLAGLIRAN			
	is used when registering interrupt handler, such use may only			
	all functions in IRAM or ROM. all constant data must be			
	placed into DRAM with DRAM_ATTR.			
	jaseji juid.			
	timing critical code may be placed into IRAM.			
	Espaz reads ande and data from 32 KB ache.			
	A A A A A A A A A A A A A A A A A A A			

NOTE: all FreeRTOS APLs are currently placed into IRAM.

IROM	Chas	h	)
	0	-	,

0x 400D 0000 - 0x 4040 0000 region

transparently eached by blash MMV using 2 32KB blocks
0x 400 70000 - 0x 400 80000

DRAM

Ox8FFB0000 - 0x8FFF0000 - (256 KB)

DRAM\_ATTR const char [] format\_string = "xp xx";

non-constant static data and zero initialized data

use ESP EARLY\_LOGA macro when logging from ISR

value will not be initialized, maintained after s/co reset too

DROM (flesh)

-NOINIT\_ATTR 1

used to access external flash memory via flash MMU

0x3F400000: - 0x3F80 0000 (4MB)

RTC slow memory

variables used in deep-sleep code stored here. RTC-NOINIT-ATTR > variables Keep their value after waking too. RTC-NOINIT-ATTR vint82 t rtc-hoinit-data;

DMA COPABLE REQUIREMENT

DMAS require data in DRAM, word-aligned (use DMA-ATTR) DMA\_ATTR . vintet buffer [] = "I want to send something";

DMA\_ATTR static vints\_t buffer[] = "I want to send something";

use macro word\_ALIGNED\_ATTR in function variables.

vint8-t stuff; WORD ALIGNED ATTR wint & the buffer [] = "...".