

## Freescale SoC SEC Security Engines

## Required properties:

- compatible : Should contain entries for this and backward compatible SEC versions, high to low, e.g., "fsl,sec2.1", "fsl,sec2.0"
- reg : Offset and length of the register set for the device
- interrupts : the SEC's interrupt number
- fsl,num-channels : An integer representing the number of channels available.
- fsl,channel-fifo-len : An integer representing the number of descriptor pointers each channel fetch fifo can hold.
- fsl,exec-units-mask : The bitmask representing what execution units (EUs) are available. It's a single 32-bit cell. EU information should be encoded following the SEC's Descriptor Header Dword EU\_SELO field documentation, i.e. as follows:

```

bit 0  = reserved - should be 0
bit 1  = set if SEC has the ARC4 EU (AFEU)
bit 2  = set if SEC has the DES/3DES EU (DEU)
bit 3  = set if SEC has the message digest EU (MDEU/MDEU-A)
bit 4  = set if SEC has the random number generator EU (RNG)
bit 5  = set if SEC has the public key EU (PKEU)
bit 6  = set if SEC has the AES EU (AESU)
bit 7  = set if SEC has the Kasumi EU (KEU)
bit 8  = set if SEC has the CRC EU (CRCU)
bit 11 = set if SEC has the message digest EU extended alg set (MDEU-B)

```

remaining bits are reserved for future SEC EUs.

- fsl,descriptor-types-mask : The bitmask representing what descriptors are available. It's a single 32-bit cell. Descriptor type information should be encoded following the SEC's Descriptor Header Dword DESC\_TYPE field documentation, i.e. as follows:

```

bit 0  = set if SEC supports the aesu_ctr_nonsnoop desc. type
bit 1  = set if SEC supports the ipsec_esp descriptor type
bit 2  = set if SEC supports the common_nonsnoop desc. type
bit 3  = set if SEC supports the 802.11i AES ccmp desc. type
bit 4  = set if SEC supports the hmac_snoop_no_afeu desc. type
bit 5  = set if SEC supports the srtp descriptor type
bit 6  = set if SEC supports the non_hmac_snoop_no_afeu desc. type
bit 7  = set if SEC supports the pkeu_assemble descriptor type
bit 8  = set if SEC supports the aesu_key_expand_output desc. type
bit 9  = set if SEC supports the pkeu_ptmul descriptor type
bit 10 = set if SEC supports the common_nonsnoop_afeu desc. type
bit 11 = set if SEC supports the pkeu_ptadd_dbl descriptor type

```

..and so on and so forth.

## Optional properties:

- interrupt-parent : the phandle for the interrupt controller that services interrupts for this device.

Example:

sec.txt

```
/* MPC8548E */
crypto@30000 {
    compatible = "fsl,sec2.1", "fsl,sec2.0";
    reg = <0x30000 0x10000>;
    interrupts = <29 2>;
    interrupt-parent = <&mpic>;
    fsl,num-channels = <4>;
    fsl,channel-fifo-len = <24>;
    fsl,exec-units-mask = <0xfe>;
    fsl,descriptor-types-mask = <0x12b0ebf>;
};
```