

## PPC440SPe DMA/XOR (DMA Controller and XOR Accelerator)

Device nodes needed for operation of the ppc440spe-adma driver are specified hereby. These are I2O/DMA, DMA and XOR nodes for DMA engines and Memory Queue Module node. The latter is used by ADMA driver for configuration of RAID-6 H/W capabilities of the PPC440SPe. In addition to the nodes and properties described below, the ranges property of PLB node must specify ranges for DMA devices.

## i) The I2O node

Required properties:

- compatible : "ibm,i2o-440spe";
- reg : <registers mapping>
- dcr-reg : <DCR registers range>

Example:

```
I2O: i2o@400100000 {
    compatible = "ibm,i2o-440spe";
    reg = <0x00000004 0x00100000 0x100>;
    dcr-reg = <0x060 0x020>;
};
```

## ii) The DMA node

Required properties:

- compatible : "ibm,dma-440spe";
- cell-index : 1 cell, hardware index of the DMA engine (typically 0x0 and 0x1 for DMA0 and DMA1)
- reg : <registers mapping>
- dcr-reg : <DCR registers range>
- interrupts : <interrupt mapping for DMA0/1 interrupts sources:  
2 sources: DMAx CS FIFO Needs Service IRQ (on UIC0) and DMA Error IRQ (on UIC1). The latter is common for both DMA engines>.
- interrupt-parent : needed for interrupt mapping

Example:

```
DMA0: dma0@400100100 {
    compatible = "ibm,dma-440spe";
    cell-index = <0>;
    reg = <0x00000004 0x00100100 0x100>;
    dcr-reg = <0x060 0x020>;
    interrupt-parent = <&DMA0>;
    interrupts = <0 1>;
    #interrupt-cells = <1>;
    #address-cells = <0>;
    #size-cells = <0>;
    interrupt-map = <
        0 &UIC0 0x14 4
```

```

                                ppc440spe-adma.txt
1 &UIC1 0x16 4>;
};

```

### iii) XOR Accelerator node

Required properties:

- compatible : "amcc,xor-accelerator";
- reg : <registers mapping>
- interrupts : <interrupt mapping for XOR interrupt source>
- interrupt-parent : for interrupt mapping

Example:

```

xor-accel@400200000 {
    compatible = "amcc,xor-accelerator";
    reg = <0x00000004 0x00200000 0x400>;
    interrupt-parent = <&UIC1>;
    interrupts = <0x1f 4>;
};

```

### iv) Memory Queue Module node

Required properties:

- compatible : "ibm,mq-440spe";
- dcr-reg : <DCR registers range>

Example:

```

MQ0: mq {
    compatible = "ibm,mq-440spe";
    dcr-reg = <0x040 0x020>;
};

```