MPAMVPMV_EL2, MPAM Virtual Partition Mapping Valid Register

The MPAMVPMV_EL2 characteristics are:

Purpose

Valid bits for virtual PARTID mapping entries. Each bit m corresponds to virtual PARTID mapping entry m in the MPAMVPM<n>_EL2 registers where n = m >> 2.

Configuration

This register is present only when FEAT_MPAM is implemented and MPAMIDR_EL1.HAS_HCR == 1. Otherwise, direct accesses to MPAMVPMV_EL2 are undefined.

This register has no effect if EL2 is not enabled in the current Security state.

Attributes

MPAMVPMV_EL2 is a 64-bit register.

Field descriptions

63	62	61	60	59	58	57	56	55	54	53
VPM_V31	VPM_V30	VPM_V29	VPM_V28	VPM_V27	VPM_V26	VPM_V25	VPM_V24	VPM_V23	VPM_V22	VPM_V
31	30	29	28	27	26	25	24	23	22	21

Bits [63:32]

Reserved, res0.

VPM_V<m>, bit [m], for m = 31 to 0

Contains valid bit for virtual PARTID mapping entry corresponding to virtual PARTID<m>.

The reset behavior of this field is:

- On a Warm reset, this field resets to an architecturally unknown value.

Accessing MPAMVPMV_EL2

Accesses to this register use the following encodings in the System register encoding space:

MRS <Xt>, MPAMVPMV_EL2

op0	op1	CRn	CRm	op2
0b11	0b100	0b1010	0b0100	0b001

```
if PSTATE.EL == EL0 then
    UNDEFINED;
elsif PSTATE.EL == EL1 then
    if EL2Enabled() && HCR_EL2.<NV2,NV> == '11' then
        X[t, 64] = NVMem[0x938];
    elsif EL2Enabled() && HCR_EL2.NV == '1' then
        if HaveEL(EL3) && MPAM3_EL3.TRAPLOWER == '1'
then
            if Halted() && EDSCR.SDD == '1' then
                UNDEFINED;
            else
                AArch64.SystemAccessTrap(EL3, 0x18);
        else
            AArch64.SystemAccessTrap(EL2, 0x18);
    else
        UNDEFINED;
elsif PSTATE.EL == EL2 then
    if HaveEL(EL3) && MPAM3_EL3.TRAPLOWER == '1' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
    else
        X[t, 64] = MPAMVPMV_EL2;
elsif PSTATE.EL == EL3 then
    X[t, 64] = MPAMVPMV_EL2;
```

MSR MPAMVPMV_EL2, <Xt>

op0	op1	CRn	CRm	op2
0b11	0b100	0b1010	0b0100	0b001

```
if PSTATE.EL == EL0 then
    UNDEFINED;
elsif PSTATE.EL == EL1 then
    if EL2Enabled() && HCR_EL2.<NV2,NV> == '11' then
```

```
        NVMem[0x938] = X[t, 64];
    elsif EL2Enabled() && HCR_EL2.NV == '1' then
        if HaveEL(EL3) && MPAM3_EL3.TRAPLOWER == '1'
then
            if Halted() && EDSCR.SDD == '1' then
                UNDEFINED;
            else
                AArch64.SystemAccessTrap(EL3, 0x18);
        else
            AArch64.SystemAccessTrap(EL2, 0x18);
    else
        UNDEFINED;
elsif PSTATE.EL == EL2 then
    if HaveEL(EL3) && MPAM3_EL3.TRAPLOWER == '1' then
        if Halted() && EDSCR.SDD == '1' then
            UNDEFINED;
        else
            AArch64.SystemAccessTrap(EL3, 0x18);
    else
        MPAMVPMV_EL2 = X[t, 64];
elsif PSTATE.EL == EL3 then
    MPAMVPMV_EL2 = X[t, 64];
```