AArch64 System Registers

ACCDATA EL1: Accelerator Data

ACTLR EL1: Auxiliary Control Register (EL1)

ACTLR_EL2: Auxiliary Control Register (EL2)

ACTLR_EL3: Auxiliary Control Register (EL3)

AFSR0 EL1: Auxiliary Fault Status Register 0 (EL1)

AFSR0 EL2: Auxiliary Fault Status Register 0 (EL2)

AFSR0_EL3: Auxiliary Fault Status Register 0 (EL3)

AFSR1_EL1: Auxiliary Fault Status Register 1 (EL1)

AFSR1 EL2: Auxiliary Fault Status Register 1 (EL2)

AFSR1 EL3: Auxiliary Fault Status Register 1 (EL3)

AIDR EL1: Auxiliary ID Register

ALLINT: All Interrupt Mask Bit

<u>AMAIR2_EL1</u>: Extended Auxiliary Memory Attribute Indirection Register (EL1)

<u>AMAIR2_EL2</u>: Extended Auxiliary Memory Attribute Indirection Register (EL2)

<u>AMAIR2_EL3</u>: Extended Auxiliary Memory Attribute Indirection Register (EL3)

<u>AMAIR_EL1</u>: Auxiliary Memory Attribute Indirection Register (EL1)

<u>AMAIR_EL2</u>: Auxiliary Memory Attribute Indirection Register (EL2)

<u>AMAIR_EL3</u>: Auxiliary Memory Attribute Indirection Register (EL3)

AMCFGR ELO: Activity Monitors Configuration Register

<u>AMCG1IDR_EL0</u>: Activity Monitors Counter Group 1 Identification Register

<u>AMCGCR_EL0</u>: Activity Monitors Counter Group Configuration Register

<u>AMCNTENCLR0_EL0</u>: Activity Monitors Count Enable Clear Register 0

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AMCNTENCLR1 ELO: Activity Monitors Count Enable Clear Register 1
AMCNTENSETO ELO: Activity Monitors Count Enable Set Register 0
AMCNTENSET1 ELO: Activity Monitors Count Enable Set Register 1
AMCR ELO: Activity Monitors Control Register
AMEVCNTR0<n> EL0: Activity Monitors Event Counter Registers 0
AMEVCNTR1<n> EL0: Activity Monitors Event Counter Registers 1
<u>AMEVCNTVOFF0<n> EL2</u>: Activity Monitors Event Counter Virtual
Offset Registers 0
AMEVCNTVOFF1<n> EL2: Activity Monitors Event Counter Virtual
Offset Registers 1
AMEVTYPER0<n> EL0: Activity Monitors Event Type Registers 0
<u>AMEVTYPER1<n> EL0</u>: Activity Monitors Event Type Registers 1
AMUSERENR ELO: Activity Monitors User Enable Register
APDAKeyHi EL1: Pointer Authentication Key A for Data (bits[127:64])
<u>APDAKeyLo EL1</u>: Pointer Authentication Key A for Data (bits[63:0])
APDBKeyHi EL1: Pointer Authentication Key B for Data (bits[127:64])
APDBKeyLo EL1: Pointer Authentication Key B for Data (bits[63:0])
APGAKeyHi EL1: Pointer Authentication Key A for Code (bits[127:64])
APGAKeyLo EL1: Pointer Authentication Key A for Code (bits[63:0])
APIAKeyHi EL1: Pointer Authentication Key A for Instruction
(bits[127:64])
APIAKeyLo EL1: Pointer Authentication Key A for Instruction
(bits[63:0])
APIBKeyHi EL1: Pointer Authentication Key B for Instruction
(bits[127:64])
APIBKeyLo EL1: Pointer Authentication Key B for Instruction
(bits[63:0])
BRBCR EL1: Branch Record Buffer Control Register (EL1)
BRBCR EL2: Branch Record Buffer Control Register (EL2)
BRBFCR EL1: Branch Record Buffer Function Control Register
BRBIDRO EL1: Branch Record Buffer IDO Register
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BRBINF<n> EL1: Branch Record Buffer Information Register <n>
BRBINFINI EL1: Branch Record Buffer Information Injection Register
BRBSRC<n> EL1: Branch Record Buffer Source Address Register <n>
BRBSRCINJ EL1: Branch Record Buffer Source Address Injection
Register
BRBTGT<n> EL1: Branch Record Buffer Target Address Register <n>
BRBTGTINI EL1: Branch Record Buffer Target Address Injection
Register
BRBTS EL1: Branch Record Buffer Timestamp Register
CCSIDR2 EL1: Current Cache Size ID Register 2
CCSIDR EL1: Current Cache Size ID Register
CLIDR EL1: Cache Level ID Register
CNTFRO ELO: Counter-timer Frequency register
CNTHCTL EL2: Counter-timer Hypervisor Control register
CNTHPS CTL EL2: Counter-timer Secure Physical Timer Control
register (EL2)
CNTHPS CVAL EL2: Counter-timer Secure Physical Timer
CompareValue register (EL2)
CNTHPS TVAL EL2: Counter-timer Secure Physical Timer TimerValue
register (EL2)
CNTHP CTL EL2: Counter-timer Hypervisor Physical Timer Control
register
CNTHP CVAL EL2: Counter-timer Physical Timer CompareValue
register (EL2)
CNTHP TVAL EL2: Counter-timer Physical Timer TimerValue register
(EL2)
CNTHVS CTL EL2: Counter-timer Secure Virtual Timer Control register
(EL2)
<u>CNTHVS CVAL EL2</u>: Counter-timer Secure Virtual Timer CompareValue
register (EL2)
CNTHVS TVAL EL2: Counter-timer Secure Virtual Timer TimerValue
register (EL2)
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CNTHV CTL EL2: Counter-timer Virtual Timer Control register (EL2)

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CNTHV CVAL EL2: Counter-timer Virtual Timer CompareValue register
(EL2)
CNTHV TVAL EL2: Counter-timer Virtual Timer TimerValue Register
(EL2)
CNTKCTL EL1: Counter-timer Kernel Control Register
CNTPCTSS ELO: Counter-timer Self-Synchronized Physical Count
Register
CNTPCT ELO: Counter-timer Physical Count Register
CNTPOFF EL2: Counter-timer Physical Offset Register
CNTPS CTL EL1: Counter-timer Physical Secure Timer Control Register
CNTPS CVAL EL1: Counter-timer Physical Secure Timer CompareValue
Register
CNTPS TVAL EL1: Counter-timer Physical Secure Timer TimerValue
register
CNTP CTL ELO: Counter-timer Physical Timer Control Register
CNTP CVAL ELO: Counter-timer Physical Timer CompareValue Register
CNTP TVAL ELO: Counter-timer Physical Timer TimerValue Register
CNTVCTSS EL0: Counter-timer Self-Synchronized Virtual Count
Register
CNTVCT ELO: Counter-timer Virtual Count Register
<u>CNTVOFF EL2</u>: Counter-timer Virtual Offset Register
CNTV CTL ELO: Counter-timer Virtual Timer Control Register
<u>CNTV CVAL ELO</u>: Counter-timer Virtual Timer CompareValue Register
CNTV TVAL ELO: Counter-timer Virtual Timer TimerValue Register
CONTEXTIDR EL1: Context ID Register (EL1)
CONTEXTIDR EL2: Context ID Register (EL2)
CPACR EL1: Architectural Feature Access Control Register
CPTR EL2: Architectural Feature Trap Register (EL2)
<u>CPTR EL3</u>: Architectural Feature Trap Register (EL3)
CSSELR EL1: Cache Size Selection Register
CTR ELO: Cache Type Register
```

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CurrentEL: Current Exception Level
DACR32 EL2: Domain Access Control Register
DAIF: Interrupt Mask Bits
DBGAUTHSTATUS EL1: Debug Authentication Status Register
DBGBCR<n> EL1: Debug Breakpoint Control Registers
DBGBVR<n> EL1: Debug Breakpoint Value Registers
DBGCLAIMCLR EL1: Debug CLAIM Tag Clear Register
DBGCLAIMSET EL1: Debug CLAIM Tag Set Register
DBGDTRRX ELO: Debug Data Transfer Register, Receive
DBGDTRTX ELO: Debug Data Transfer Register, Transmit
DBGDTR ELO: Debug Data Transfer Register, half-duplex
DBGPRCR EL1: Debug Power Control Register
DBGVCR32 EL2: Debug Vector Catch Register
DBGWCR<n> EL1: Debug Watchpoint Control Registers
DBGWVR<n> EL1: Debug Watchpoint Value Registers
DCZID ELO: Data Cache Zero ID Register
DISR EL1: Deferred Interrupt Status Register
DIT: Data Independent Timing
DLR ELO: Debug Link Register
DSPSR ELO: Debug Saved Program Status Register
ELR EL1: Exception Link Register (EL1)
ELR EL2: Exception Link Register (EL2)
ELR EL3: Exception Link Register (EL3)
ERRIDR EL1: Error Record ID Register
ERRSELR EL1: Error Record Select Register
ERXADDR EL1: Selected Error Record Address Register
ERXCTLR EL1: Selected Error Record Control Register
ERXFR EL1: Selected Error Record Feature Register
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ERXGSR EL1: Selected Error Record Group Status Register
ERXMISCO EL1: Selected Error Record Miscellaneous Register 0
ERXMISC1 EL1: Selected Error Record Miscellaneous Register 1
ERXMISC2 EL1: Selected Error Record Miscellaneous Register 2
ERXMISC3 EL1: Selected Error Record Miscellaneous Register 3
ERXPFGCDN EL1: Selected Pseudo-fault Generation Countdown
Register
ERXPFGCTL EL1: Selected Pseudo-fault Generation Control Register
ERXPFGF EL1: Selected Pseudo-fault Generation Feature Register
ERXSTATUS EL1: Selected Error Record Primary Status Register
ESR EL1: Exception Syndrome Register (EL1)
ESR EL2: Exception Syndrome Register (EL2)
ESR EL3: Exception Syndrome Register (EL3)
FAR EL1: Fault Address Register (EL1)
FAR EL2: Fault Address Register (EL2)
FAR EL3: Fault Address Register (EL3)
FPCR: Floating-point Control Register
FPEXC32 EL2: Floating-Point Exception Control Register
FPSR: Floating-point Status Register
GCR EL1: Tag Control Register.
GCSCRE0 EL1: Guarded Control Stack Control (EL0)
GCSCR EL1: Guarded Control Stack Control (EL1)
GCSCR EL2: Guarded Control Stack Control (EL2)
GCSCR EL3: Guarded Control Stack Control (EL3)
GCSPR ELO: Guarded Control Stack Pointer (ELO)
GCSPR EL1: Guarded Control Stack Pointer (EL1)
GCSPR EL2: Guarded Control Stack Pointer (EL2)
GCSPR EL3: Guarded Control Stack Pointer (EL3)
GMID EL1: Multiple tag transfer ID Register
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GPCCR EL3: Granule Protection Check Control Register (EL3)
GPTBR EL3: Granule Protection Table Base Register
HACR EL2: Hypervisor Auxiliary Control Register
HAFGRTR EL2: Hypervisor Activity Monitors Fine-Grained Read Trap
Register
HCRX EL2: Extended Hypervisor Configuration Register
HCR EL2: Hypervisor Configuration Register
HDFGRTR2 EL2: Hypervisor Debug Fine-Grained Read Trap Register 2
HDFGRTR EL2: Hypervisor Debug Fine-Grained Read Trap Register
HDFGWTR2 EL2: Hypervisor Debug Fine-Grained Write Trap Register 2
HDFGWTR EL2: Hypervisor Debug Fine-Grained Write Trap Register
HFGITR2 EL2: Hypervisor Fine-Grained Instruction Trap Register 2
HFGITR EL2: Hypervisor Fine-Grained Instruction Trap Register
HFGRTR2 EL2: Hypervisor Fine-Grained Read Trap Register 2
HFGRTR EL2: Hypervisor Fine-Grained Read Trap Register
HFGWTR2 EL2: Hypervisor Fine-Grained Write Trap Register 2
HFGWTR EL2: Hypervisor Fine-Grained Write Trap Register
HPFAR EL2: Hypervisor IPA Fault Address Register
HSTR EL2: Hypervisor System Trap Register
ICC APOR<n> EL1: Interrupt Controller Active Priorities Group 0
Registers
ICC AP1R<n> EL1: Interrupt Controller Active Priorities Group 1
Registers
ICC ASGI1R EL1: Interrupt Controller Alias Software Generated
Interrupt Group 1 Register
ICC BPR0 EL1: Interrupt Controller Binary Point Register 0
ICC BPR1 EL1: Interrupt Controller Binary Point Register 1
ICC CTLR EL1: Interrupt Controller Control Register (EL1)
ICC CTLR EL3: Interrupt Controller Control Register (EL3)
ICC DIR EL1: Interrupt Controller Deactivate Interrupt Register
```

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ICC EOIRO EL1: Interrupt Controller End Of Interrupt Register 0
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- ICC EOIR1 EL1: Interrupt Controller End Of Interrupt Register 1
- <u>ICC_HPPIR0_EL1</u>: Interrupt Controller Highest Priority Pending Interrupt Register 0
- <u>ICC_HPPIR1_EL1</u>: Interrupt Controller Highest Priority Pending Interrupt Register 1
- ICC IARO EL1: Interrupt Controller Interrupt Acknowledge Register 0
- ICC IAR1 EL1: Interrupt Controller Interrupt Acknowledge Register 1
- ICC_IGRPEN0_EL1: Interrupt Controller Interrupt Group 0 Enable
 register
- <u>ICC_IGRPEN1_EL1</u>: Interrupt Controller Interrupt Group 1 Enable register
- ICC_IGRPEN1_EL3: Interrupt Controller Interrupt Group 1 Enable
 register (EL3)
- <u>ICC_NMIAR1_EL1</u>: Interrupt Controller Non-maskable Interrupt Acknowledge Register 1
- ICC PMR EL1: Interrupt Controller Interrupt Priority Mask Register
- <u>ICC_RPR_EL1</u>: Interrupt Controller Running Priority Register
- <u>ICC_SGIOR_EL1</u>: Interrupt Controller Software Generated Interrupt Group 0 Register
- ICC_SGI1R_EL1: Interrupt Controller Software Generated Interrupt Group 1 Register
- <u>ICC_SRE_EL1</u>: Interrupt Controller System Register Enable Register (EL1)
- <u>ICC_SRE_EL2</u>: Interrupt Controller System Register Enable Register (EL2)
- <u>ICC_SRE_EL3</u>: Interrupt Controller System Register Enable Register (EL3)
- <u>ICH_AP0R<n>_EL2</u>: Interrupt Controller Hyp Active Priorities Group 0 Registers
- <u>ICH_AP1R<n>_EL2</u>: Interrupt Controller Hyp Active Priorities Group 1 Registers
- ICH EISR EL2: Interrupt Controller End of Interrupt Status Register
- <u>ICH_ELRSR_EL2</u>: Interrupt Controller Empty List Register Status Register

```
ICH HCR EL2: Interrupt Controller Hyp Control Register
ICH LR<n> EL2: Interrupt Controller List Registers
ICH MISR EL2: Interrupt Controller Maintenance Interrupt State
Register
ICH VMCR EL2: Interrupt Controller Virtual Machine Control Register
ICH VTR EL2: Interrupt Controller VGIC Type Register
ICV APOR<n> EL1: Interrupt Controller Virtual Active Priorities Group
0 Registers
ICV AP1R<n> EL1: Interrupt Controller Virtual Active Priorities Group
1 Registers
ICV BPR0 EL1: Interrupt Controller Virtual Binary Point Register 0
ICV BPR1 EL1: Interrupt Controller Virtual Binary Point Register 1
ICV CTLR EL1: Interrupt Controller Virtual Control Register
ICV DIR EL1: Interrupt Controller Deactivate Virtual Interrupt Register
ICV EOIRO EL1: Interrupt Controller Virtual End Of Interrupt Register
ICV EOIR1 EL1: Interrupt Controller Virtual End Of Interrupt Register
ICV HPPIRO EL1: Interrupt Controller Virtual Highest Priority Pending
Interrupt Register 0
ICV HPPIR1 EL1: Interrupt Controller Virtual Highest Priority Pending
Interrupt Register 1
ICV IARO EL1: Interrupt Controller Virtual Interrupt Acknowledge
Register 0
ICV IAR1 EL1: Interrupt Controller Virtual Interrupt Acknowledge
Register 1
ICV IGRPENO EL1: Interrupt Controller Virtual Interrupt Group 0
Enable register
ICV IGRPEN1 EL1: Interrupt Controller Virtual Interrupt Group 1
Enable register
ICV NMIAR1 EL1: Interrupt Controller Virtual Non-maskable Interrupt
Acknowledge Register 1
ICV PMR EL1: Interrupt Controller Virtual Interrupt Priority Mask
```

Register

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ID AA64AFR0 EL1: AArch64 Auxiliary Feature Register 0
ID AA64AFR1 EL1: AArch64 Auxiliary Feature Register 1
ID AA64DFR0 EL1: AArch64 Debug Feature Register 0
ID AA64DFR1 EL1: AArch64 Debug Feature Register 1
ID AA64ISAR0 EL1: AArch64 Instruction Set Attribute Register 0
ID AA64ISAR1 EL1: AArch64 Instruction Set Attribute Register 1
ID AA64ISAR2 EL1: AArch64 Instruction Set Attribute Register 2
ID AA64MMFR0 EL1: AArch64 Memory Model Feature Register 0
ID AA64MMFR1 EL1: AArch64 Memory Model Feature Register 1
ID AA64MMFR2 EL1: AArch64 Memory Model Feature Register 2
ID AA64MMFR3 EL1: AArch64 Memory Model Feature Register 3
ID AA64MMFR4 EL1: AArch64 Memory Model Feature Register 4
ID AA64PFR0 EL1: AArch64 Processor Feature Register 0
ID AA64PFR1 EL1: AArch64 Processor Feature Register 1
ID AA64PFR2 EL1: AArch64 Processor Feature Register 2
ID AA64SMFR0 EL1: SME Feature ID Register 0
ID AA64ZFR0 EL1: SVE Feature ID Register 0
ID AFRO EL1: AArch32 Auxiliary Feature Register 0
ID DFR0 EL1: AArch32 Debug Feature Register 0
ID DFR1 EL1: Debug Feature Register 1
ID ISAR0 EL1: AArch32 Instruction Set Attribute Register 0
ID ISAR1 EL1: AArch32 Instruction Set Attribute Register 1
ID ISAR2 EL1: AArch32 Instruction Set Attribute Register 2
ID ISAR3 EL1: AArch32 Instruction Set Attribute Register 3
ID ISAR4 EL1: AArch32 Instruction Set Attribute Register 4
ID ISAR5 EL1: AArch32 Instruction Set Attribute Register 5
ID ISAR6 EL1: AArch32 Instruction Set Attribute Register 6
```

ICV RPR EL1: Interrupt Controller Virtual Running Priority Register

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ID MMFR0 EL1: AArch32 Memory Model Feature Register 0
ID MMFR1 EL1: AArch32 Memory Model Feature Register 1
ID MMFR2 EL1: AArch32 Memory Model Feature Register 2
ID MMFR3 EL1: AArch32 Memory Model Feature Register 3
ID MMFR4 EL1: AArch32 Memory Model Feature Register 4
ID MMFR5 EL1: AArch32 Memory Model Feature Register 5
ID PFR0 EL1: AArch32 Processor Feature Register 0
ID PFR1 EL1: AArch32 Processor Feature Register 1
ID PFR2 EL1: AArch32 Processor Feature Register 2
IFSR32 EL2: Instruction Fault Status Register (EL2)
ISR EL1: Interrupt Status Register
LORC EL1: LORegion Control (EL1)
LOREA EL1: LORegion End Address (EL1)
LORID EL1: LORegionID (EL1)
LORN EL1: LORegion Number (EL1)
LORSA EL1: LORegion Start Address (EL1)
MAIR2 EL1: Extended Memory Attribute Indirection Register (EL1)
MAIR2 EL2: Extended Memory Attribute Indirection Register (EL2)
MAIR2 EL3: Extended Memory Attribute Indirection Register (EL3)
MAIR EL1: Memory Attribute Indirection Register (EL1)
MAIR EL2: Memory Attribute Indirection Register (EL2)
MAIR EL3: Memory Attribute Indirection Register (EL3)
MDCCINT EL1: Monitor DCC Interrupt Enable Register
MDCCSR ELO: Monitor DCC Status Register
MDCR EL2: Monitor Debug Configuration Register (EL2)
MDCR EL3: Monitor Debug Configuration Register (EL3)
MDRAR EL1: Monitor Debug ROM Address Register
MDSCR EL1: Monitor Debug System Control Register
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MDSELR EL1: Breakpoint and Watchpoint Selection Register
MECIDR EL2: MEC Identification Register
MECID A0 EL2: Alternate MECID for EL2 and EL2&0 translation
regimes
MECID A1 EL2: Alternate MECID for EL2&0 translation regimes.
MECID PO EL2: Primary MECID for EL2 and EL2&0 translation regimes
MECID P1 EL2: Primary MECID for EL2&0 translation regimes
MECID RL A EL3: Realm PA space Alternate MECID for EL3 stage 1
translation regime
MFAR EL3: Physical Fault Address Register (EL3)
MIDR EL1: Main ID Register
MPAM0 EL1: MPAM0 Register (EL1)
MPAM1 EL1: MPAM1 Register (EL1)
MPAM2 EL2: MPAM2 Register (EL2)
MPAM3 EL3: MPAM3 Register (EL3)
MPAMHCR EL2: MPAM Hypervisor Control Register (EL2)
MPAMIDR EL1: MPAM ID Register (EL1)
MPAMSM EL1: MPAM Streaming Mode Register
MPAMVPM0 EL2: MPAM Virtual PARTID Mapping Register 0
MPAMVPM1 EL2: MPAM Virtual PARTID Mapping Register 1
MPAMVPM2 EL2: MPAM Virtual PARTID Mapping Register 2
MPAMVPM3 EL2: MPAM Virtual PARTID Mapping Register 3
MPAMVPM4 EL2: MPAM Virtual PARTID Mapping Register 4
MPAMVPM5 EL2: MPAM Virtual PARTID Mapping Register 5
MPAMVPM6 EL2: MPAM Virtual PARTID Mapping Register 6
MPAMVPM7 EL2: MPAM Virtual PARTID Mapping Register 7
MPAMVPMV EL2: MPAM Virtual Partition Mapping Valid Register
MPIDR EL1: Multiprocessor Affinity Register
MVFR0 EL1: AArch32 Media and VFP Feature Register 0
```

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MVFR1 EL1: AArch32 Media and VFP Feature Register 1
MVFR2 EL1: AArch32 Media and VFP Feature Register 2
NZCV: Condition Flags
OSDLR EL1: OS Double Lock Register
OSDTRRX EL1: OS Lock Data Transfer Register, Receive
OSDTRTX EL1: OS Lock Data Transfer Register, Transmit
OSECCR EL1: OS Lock Exception Catch Control Register
OSLAR EL1: OS Lock Access Register
OSLSR EL1: OS Lock Status Register
PAN: Privileged Access Never
PAR EL1: Physical Address Register
PFAR EL1: Physical Fault Address Register (EL1)
PFAR EL2: Physical Fault Address Register (EL2)
PIREO EL1: Permission Indirection Register 0 (EL1)
PIREO EL2: Permission Indirection Register 0 (EL2)
PIR EL1: Permission Indirection Register 1 (EL1)
PIR EL2: Permission Indirection Register 2 (EL2)
PIR EL3: Permission Indirection Register 3 (EL3)
PM: PMU Exception Mask
PMBIDR EL1: Profiling Buffer ID Register
PMBLIMITR EL1: Profiling Buffer Limit Address Register
PMBPTR EL1: Profiling Buffer Write Pointer Register
PMBSR EL1: Profiling Buffer Status/syndrome Register
PMCCFILTR ELO: Performance Monitors Cycle Count Filter Register
PMCCNTR ELO: Performance Monitors Cycle Count Register
PMCCNTSVR EL1: Performance Monitors Cycle Count Saved Value
Register
PMCEIDO ELO: Performance Monitors Common Event Identification
Register 0
```

<u>PMCEID1_EL0</u>: Performance Monitors Common Event Identification Register 1

<u>PMCNTENCLR_EL0</u>: Performance Monitors Count Enable Clear Register

PMCNTENSET ELO: Performance Monitors Count Enable Set Register

PMCR ELO: Performance Monitors Control Register

PMECR_EL1: Performance Monitors Extended Control Register (EL1)

PMEVCNTR<n>_EL0: Performance Monitors Event Count Registers

<u>PMEVCNTSVR<n>_EL1</u>: Performance Monitors Event Count Saved Value Register <n>

PMEVTYPER<n> EL0: Performance Monitors Event Type Registers

PMIAR EL1: Performance Monitors Instruction Address Register

<u>PMICFILTR_ELO</u>: Performance Monitors Instruction Counter Filter Register

PMICNTR ELO: Performance Monitors Instruction Counter Register

<u>PMICNTSVR_EL1</u>: Performance Monitors Instruction Count Saved Value Register

<u>PMINTENCLR_EL1</u>: Performance Monitors Interrupt Enable Clear Register

<u>PMINTENSET_EL1</u>: Performance Monitors Interrupt Enable Set Register

<u>PMMIR_EL1</u>: Performance Monitors Machine Identification Register

<u>PMOVSCLR_EL0</u>: Performance Monitors Overflow Flag Status Clear Register

<u>PMOVSSET_ELO</u>: Performance Monitors Overflow Flag Status Set Register

PMSCR_EL1: Statistical Profiling Control Register (EL1)

PMSCR_EL2: Statistical Profiling Control Register (EL2)

PMSDSFR EL1: Sampling Data Source Filter Register

<u>PMSELR_ELO</u>: Performance Monitors Event Counter Selection Register

PMSEVFR_EL1: Sampling Event Filter Register

PMSFCR_EL1: Sampling Filter Control Register

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PMSICR EL1: Sampling Interval Counter Register
PMSIDR EL1: Sampling Profiling ID Register
PMSIRR EL1: Sampling Interval Reload Register
PMSLATFR EL1: Sampling Latency Filter Register
PMSNEVFR EL1: Sampling Inverted Event Filter Register
PMSSCR EL1: Performance Monitors Snapshot Status and Capture
Register
PMSWINC ELO: Performance Monitors Software Increment Register
PMUACR EL1: Performance Monitors User Access Control Register
PMUSERENR ELO: Performance Monitors User Enable Register
PMXEVCNTR ELO: Performance Monitors Selected Event Count
Register
PMXEVTYPER ELO: Performance Monitors Selected Event Type
Register
PMZR ELO: Performance Monitors Zero with Mask
POR ELO: Permission Overlay Register 0 (ELO)
POR EL1: Permission Overlay Register 1 (EL1)
POR EL2: Permission Overlay Register 2 (EL2)
POR EL3: Permission Overlay Register 3 (EL3)
RCWMASK EL1: Read Check Write Instruction Mask (EL1)
RCWSMASK EL1: Software Read Check Write Instruction Mask (EL1)
REVIDR EL1: Revision ID Register
RGSR EL1: Random Allocation Tag Seed Register.
RMR EL1: Reset Management Register (EL1)
RMR EL2: Reset Management Register (EL2)
RMR EL3: Reset Management Register (EL3)
RNDR: Random Number
RNDRRS: Reseeded Random Number
RVBAR EL1: Reset Vector Base Address Register (if EL2 and EL3 not
implemented)
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RVBAR EL2: Reset Vector Base Address Register (if EL3 not
implemented)
RVBAR EL3: Reset Vector Base Address Register (if EL3 implemented)
<u>S2PIR EL2</u>: Stage 2 Permission Indirection Register (EL2)
<u>S2POR EL1</u>: Stage 2 Permission Overlay Register (EL1)
S3 <op1> <Cn> <Cm> <op2>: IMPLEMENTATION DEFINED
registers
SCR EL3: Secure Configuration Register
SCTLR2 EL1: System Control Register (EL1)
SCTLR2 EL2: System Control Register (EL2)
SCTLR2 EL3: System Control Register (EL3)
SCTLR EL1: System Control Register (EL1)
SCTLR EL2: System Control Register (EL2)
SCTLR EL3: System Control Register (EL3)
SCXTNUM ELO: ELO Read/Write Software Context Number
SCXTNUM EL1: EL1 Read/Write Software Context Number
SCXTNUM EL2: EL2 Read/Write Software Context Number
SCXTNUM EL3: EL3 Read/Write Software Context Number
SDER32 EL2: AArch32 Secure Debug Enable Register
SDER32 EL3: AArch32 Secure Debug Enable Register
SMCR EL1: SME Control Register (EL1)
SMCR EL2: SME Control Register (EL2)
SMCR EL3: SME Control Register (EL3)
SMIDR EL1: Streaming Mode Identification Register
SMPRIMAP EL2: Streaming Mode Priority Mapping Register
SMPRI EL1: Streaming Mode Priority Register
SPMACCESSR EL1: System Performance Monitors Access Register
(EL1)
SPMACCESSR EL2: System Performance Monitors Access Register
(EL2)
```

<u>SPMACCESSR_EL3</u>: System Performance Monitors Access Register (EL3)

SPMCFGR EL1: System Performance Monitors Configuration Register

SPMCGCR<n>_EL1: Counter Group Configuration Register <n>

<u>SPMCNTENCLR_EL0</u>: System Performance Monitors Count Enable Clear Register

<u>SPMCNTENSET_EL0</u>: System Performance Monitors Count Enable Set Register

SPMCR ELO: System Performance Monitor Control Register

<u>SPMDEVAFF_EL1</u>: System Performance Monitors Device Affinity Register

<u>SPMDEVARCH_EL1</u>: System Performance Monitors Device Architecture Register

<u>SPMEVCNTR<n>_EL0</u>: System Performance Monitors Event Count Register

<u>SPMEVFILT2R<n>_EL0</u>: System Performance Monitors Event Filter Control Register 2

<u>SPMEVFILTR<n>_EL0</u>: System Performance Monitors Event Filter Control Register

<u>SPMEVTYPER<n>_EL0</u>: System Performance Monitors Event Type Register

SPMIIDR EL1: Implementation Identification Register

<u>SPMINTENCLR_EL1</u>: System Performance Monitors Interrupt Enable Clear Register

<u>SPMINTENSET_EL1</u>: System Performance Monitors Interrupt Enable Set Register

<u>SPMOVSCLR_EL0</u>: System Performance Monitors Overflow Flag Status Clear Register

<u>SPMOVSSET_ELO</u>: System Performance Monitors Overflow Flag Status Set Register

<u>SPMROOTCR_EL3</u>: System Performance Monitors Root and Realm Control Register

<u>SPMSCR_EL1</u>: System Performance Monitors Secure Control Register

<u>SPMSELR_EL0</u>: System Performance Monitors Select Register

SPSel: Stack Pointer Select

```
SPSR abt: Saved Program Status Register (Abort mode)
SPSR EL1: Saved Program Status Register (EL1)
SPSR EL2: Saved Program Status Register (EL2)
SPSR EL3: Saved Program Status Register (EL3)
SPSR fig: Saved Program Status Register (FIQ mode)
SPSR irg: Saved Program Status Register (IRQ mode)
SPSR und: Saved Program Status Register (Undefined mode)
SP ELO: Stack Pointer (ELO)
SP EL1: Stack Pointer (EL1)
SP EL2: Stack Pointer (EL2)
SP EL3: Stack Pointer (EL3)
SSBS: Speculative Store Bypass Safe
SVCR: Streaming Vector Control Register
TCO: Tag Check Override
TCR2 EL1: Extended Translation Control Register (EL1)
TCR2 EL2: Extended Translation Control Register (EL2)
TCR EL1: Translation Control Register (EL1)
TCR EL2: Translation Control Register (EL2)
TCR EL3: Translation Control Register (EL3)
TFSRE0 EL1: Tag Fault Status Register (EL0).
TFSR EL1: Tag Fault Status Register (EL1)
TFSR EL2: Tag Fault Status Register (EL2)
TFSR EL3: Tag Fault Status Register (EL3)
TPIDR2 ELO: ELO Read/Write Software Thread ID Register 2
TPIDRRO ELO: ELO Read-Only Software Thread ID Register
TPIDR ELO: ELO Read/Write Software Thread ID Register
TPIDR EL1: EL1 Software Thread ID Register
TPIDR EL2: EL2 Software Thread ID Register
```

```
TPIDR EL3: EL3 Software Thread ID Register
TRBBASER EL1: Trace Buffer Base Address Register
TRBIDR EL1: Trace Buffer ID Register
TRBLIMITR EL1: Trace Buffer Limit Address Register
TRBMAR EL1: Trace Buffer Memory Attribute Register
TRBMPAM EL1: Trace Buffer MPAM Configuration Register
TRBPTR EL1: Trace Buffer Write Pointer Register
TRBSR EL1: Trace Buffer Status/syndrome Register
TRBTRG EL1: Trace Buffer Trigger Counter Register
TRCACATR<n>: Address Comparator Access Type Register <n>
TRCACVR<n>: Address Comparator Value Register <n>
TRCAUTHSTATUS: Authentication Status Register
TRCAUXCTLR: Auxiliary Control Register
TRCBBCTLR: Branch Broadcast Control Register
TRCCCCTLR: Cycle Count Control Register
TRCCIDCCTLRO: Context Identifier Comparator Control Register 0
TRCCIDCCTLR1: Context Identifier Comparator Control Register 1
TRCCIDCVR<n>: Context Identifier Comparator Value Registers <n>
TRCCLAIMCLR: Claim Tag Clear Register
TRCCLAIMSET: Claim Tag Set Register
TRCCNTCTLR<n>: Counter Control Register <n>
TRCCNTRLDVR<n>: Counter Reload Value Register <n>
TRCCNTVR<n>: Counter Value Register <n>
TRCCONFIGR: Trace Configuration Register
TRCDEVARCH: Device Architecture Register
TRCDEVID: Device Configuration Register
TRCEVENTCTLOR: Event Control 0 Register
TRCEVENTCTL1R: Event Control 1 Register
```

```
TRCEXTINSELR<n>: External Input Select Register <n>
TRCIDRO: ID Register 0
TRCIDR1: ID Register 1
TRCIDR10: ID Register 10
TRCIDR11: ID Register 11
TRCIDR12: ID Register 12
TRCIDR13: ID Register 13
TRCIDR2: ID Register 2
TRCIDR3: ID Register 3
TRCIDR4: ID Register 4
TRCIDR5: ID Register 5
TRCIDR6: ID Register 6
TRCIDR7: ID Register 7
TRCIDR8: ID Register 8
TRCIDR9: ID Register 9
TRCIMSPECO: IMP DEF Register 0
TRCIMSPEC<n>: IMP DEF Register <n>
TRCITECR EL1: Instrumentation Trace Control Register (EL1)
TRCITECR EL2: Instrumentation Trace Control Register (EL2)
TRCITEEDCR: Instrumentation Trace Extension External Debug Control
Register
TRCOSLSR: Trace OS Lock Status Register
TRCPRGCTLR: Programming Control Register
TRCOCTLR: Q Element Control Register
TRCRSCTLR<n>: Resource Selection Control Register <n>
TRCRSR: Resources Status Register
TRCSEQEVR<n>: Sequencer State Transition Control Register <n>
TRCSEQRSTEVR: Sequencer Reset Control Register
TRCSEQSTR: Sequencer State Register
```

```
TRCSSCCR<n>: Single-shot Comparator Control Register <n>
TRCSSCSR<n>: Single-shot Comparator Control Status Register <n>
TRCSSPCICR<n>: Single-shot Processing Element Comparator Input
Control Register <n>
TRCSTALLCTLR: Stall Control Register
TRCSTATR: Trace Status Register
TRCSYNCPR: Synchronization Period Register
TRCTRACEIDR: Trace ID Register
TRCTSCTLR: Timestamp Control Register
TRCVICTLR: ViewInst Main Control Register
TRCVIIECTLR: ViewInst Include/Exclude Control Register
TRCVIPCSSCTLR: ViewInst Start/Stop PE Comparator Control Register
TRCVISSCTLR: ViewInst Start/Stop Control Register
TRCVMIDCCTLR0: Virtual Context Identifier Comparator Control
Register 0
TRCVMIDCCTLR1: Virtual Context Identifier Comparator Control
Register 1
TRCVMIDCVR<n>: Virtual Context Identifier Comparator Value
Register <n>
TRFCR EL1: Trace Filter Control Register (EL1)
TRFCR EL2: Trace Filter Control Register (EL2)
TTBR0 EL1: Translation Table Base Register 0 (EL1)
TTBR0 EL2: Translation Table Base Register 0 (EL2)
TTBR0 EL3: Translation Table Base Register 0 (EL3)
TTBR1 EL1: Translation Table Base Register 1 (EL1)
TTBR1 EL2: Translation Table Base Register 1 (EL2)
UAO: User Access Override
VBAR EL1: Vector Base Address Register (EL1)
VBAR EL2: Vector Base Address Register (EL2)
<u>VBAR EL3</u>: Vector Base Address Register (EL3)
```

VDISR EL2: Virtual Deferred Interrupt Status Register

VMECID A EL2: Alternate MECID for EL1&0 stage 2 translation regime

<u>VMECID P EL2</u>: Primary MECID for EL1&0 stage 2 translation regime

<u>VMPIDR_EL2</u>: Virtualization Multiprocessor ID Register

VNCR EL2: Virtual Nested Control Register

<u>VPIDR EL2</u>: Virtualization Processor ID Register

<u>VSESR_EL2</u>: Virtual SError Exception Syndrome Register

VSTCR EL2: Virtualization Secure Translation Control Register

VSTTBR EL2: Virtualization Secure Translation Table Base Register

VTCR EL2: Virtualization Translation Control Register

VTTBR EL2: Virtualization Translation Table Base Register

ZCR EL1: SVE Control Register (EL1)

ZCR EL2: SVE Control Register (EL2)

ZCR EL3: SVE Control Register (EL3)

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