

| Leaf and Sub-Leaf |               |             | CPUID Field |      |     |     |            | Virtualization          |   |                                  |  |
|-------------------|---------------|-------------|-------------|------|-----|-----|------------|-------------------------|---|----------------------------------|--|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header      | Reg. | MSB | LSB | Field Size | Field Name              | Configuration Details                     | Bit or Field Virtualization Type | Virtualization Details   |
| 0x0               | N/A           | N/A         | Leaf        |      |     |     |            | Leaf 0x0                |   |                                  |  |
| 0x0               | N/A           | N/A         | Field       | EAX  | 31  | 0   | 32         | MaxIndex                |   | Fixed                            | 0x29   |
| 0x0               | N/A           | N/A         | Field       | EBX  | 31  | 0   | 32         | Genu                    |   | Fixed                            | 0x756e6547   |
| 0x0               | N/A           | N/A         | Field       | ECX  | 31  | 0   | 32         | ntel                    |   | Fixed                            | 0x6c65746e   |
| 0x0               | N/A           | N/A         | Field       | EDX  | 31  | 0   | 32         | inel                    |   | Fixed                            | 0x49656e69   |
| 0x1               | N/A           | N/A         | Leaf        |      |     |     |            | Leaf 0x1                |   |                                  |  |
| 0x1               | N/A           | N/A         | Field       | EAX  | 3   | 0   | 4          | Stepping ID             | TD_PARAMS.CPUID_CONFIG                    | Configured                       |  |
| 0x1               | N/A           | N/A         | Field       | EAX  | 7   | 4   | 4          | Model ID                |   | Configured                       |  |
| 0x1               | N/A           | N/A         | Field       | EAX  | 11  | 8   | 4          | Family ID               |   | Configured                       |  |
| 0x1               | N/A           | N/A         | Field       | EAX  | 13  | 12  | 2          | Processor Type          |   | Configured                       |  |
| 0x1               | N/A           | N/A         | Field       | EAX  | 15  | 14  | 2          | Reserved                |   | Fixed                            | 0x0  |
| 0x1               | N/A           | N/A         | Field       | EAX  | 19  | 16  | 4          | Extended Model ID       |   | Configured                       |  |
| 0x1               | N/A           | N/A         | Field       | EAX  | 27  | 20  | 8          | Extended Family ID      |   | Configured                       |  |
| 0x1               | N/A           | N/A         | Field       | EAX  | 31  | 28  | 4          | Reserved                |   | Fixed                            | 0x0  |
| 0x1               | N/A           | N/A         | Field       | EBX  | 7   | 0   | 8          | Brand Index             |   | Fixed                            | 0x0  |
| 0x1               | N/A           | N/A         | Field       | EBX  | 15  | 8   | 8          | CLFLUSH Line Size       |   | Fixed                            | 0x8  |
| 0x1               | N/A           | N/A         | Field       | EBX  | 23  | 16  | 8          | Maximum Addressable IDs | TD_PARAMS.CPUID_CONFIG                    | Configured                       |  |
| 0x1               | N/A           | N/A         | Field       | EBX  | 31  | 24  | 8          | Initial APIC ID         | VCPU's x2APIC ID or VCPU_INDEX            | Calculated                       | if topolgy enum enabled<br>Virt. x2APIC ID[7:0]<br>else<br>VCPU_INDEX[7:0] |
| 0x1               | N/A           | N/A         | Field       | ECX  | 0   | 0   | 1          | SSE3                    |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 1   | 1   | 1          | PCLMULQDQ               |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 2   | 2   | 1          | DTES64                  |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 3   | 3   | 1          | MONITOR                 | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 4   | 4   | 1          | DS-CPL                  |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 5   | 5   | 1          | VMX                     |   | Fixed                            | 0x0  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 6   | 6   | 1          | SMX                     |   | Fixed                            | 0x0  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 7   | 7   | 1          | EIST                    | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 8   | 8   | 1          | TM2                     | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 9   | 9   | 1          | SSSE3                   |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 10  | 10  | 1          | CNXT-ID                 | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 11  | 11  | 1          | SDBG                    | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 12  | 12  | 1          | FMA                     | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[2]  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 13  | 13  | 1          | CMPXCHG16B              |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 14  | 14  | 1          | xTPR Update Control     | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 15  | 15  | 1          | PDCM                    |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 16  | 16  | 1          | Reserved                |   | Fixed                            | 0x0  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 17  | 17  | 1          | PCID                    |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 18  | 18  | 1          | DCA                     | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 19  | 19  | 1          | SSE4_1                  |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 20  | 20  | 1          | SSE4_2                  |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 21  | 21  | 1          | x2APIC                  |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 22  | 22  | 1          | MOVBE                   |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 23  | 23  | 1          | POPCNT                  |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 24  | 24  | 1          | TSC-Deadline            | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 25  | 25  | 1          | AESNI                   |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 26  | 26  | 1          | XSAVE                   |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 27  | 27  | 1          | OSXSAVE                 | TD_VMCS.GUEST_CR4.OSXSAVE                 | Calculated                       | CR4.OSXSAVE  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 28  | 28  | 1          | AVX                     | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[2]  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 29  | 29  | 1          | F16C                    | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[2]  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 30  | 30  | 1          | RDRAND                  |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | ECX  | 31  | 31  | 1          | Hypervisor              |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 0   | 0   | 1          | FPU                     |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 1   | 1   | 1          | VME                     |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 2   | 2   | 1          | DE                      |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 3   | 3   | 1          | PSE                     |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 4   | 4   | 1          | TSC                     |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 5   | 5   | 1          | MSR                     |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 6   | 6   | 1          | PAE                     |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 7   | 7   | 1          | MCE                     |   | Configured & Native              |  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 8   | 8   | 1          | CX8                     |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 9   | 9   | 1          | APIC                    |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 10  | 10  | 1          | Reserved                |   | Fixed                            | 0x0  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 11  | 11  | 1          | SEP                     |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 12  | 12  | 1          | MTRR                    |   | Configured & Native              |  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 13  | 13  | 1          | PGE                     |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 14  | 14  | 1          | MCA                     |   | Configured & Native              |  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 15  | 15  | 1          | CMOV                    |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 16  | 16  | 1          | PAT                     |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 17  | 17  | 1          | PSE-36                  |   | Fixed                            | 0x0  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 18  | 18  | 1          | PSN                     | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 19  | 19  | 1          | CLFSH                   |   | Fixed                            | 0x1  |
| 0x1               | N/A           | N/A         | Field       | EDX  | 20  | 20  | 1          | Reserved                |   | Fixed                            | 0x0  |

| Leaf and Sub-Leaf |               |             | CPUID Field     |      |     |     |            | Virtualization                       |                        |                                  |                                 |
|-------------------|---------------|-------------|-----------------|------|-----|-----|------------|--------------------------------------|------------------------|----------------------------------|---------------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg. | MSB | LSB | Field Size | Field Name                           | Configuration Details  | Bit or Field Virtualization Type | Virtualization Details          |
| 0x1               | N/A           | N/A         | Field           | EDX  | 21  | 21  | 1          | DS                                   |                        | Fixed                            | 0x1                             |
| 0x1               | N/A           | N/A         | Field           | EDX  | 22  | 22  | 1          | ACPI                                 | TD_PARAMS.CPUID_CONFIG | Configured & Native              |                                 |
| 0x1               | N/A           | N/A         | Field           | EDX  | 23  | 23  | 1          | MMX                                  |                        | Fixed                            | 0x1                             |
| 0x1               | N/A           | N/A         | Field           | EDX  | 24  | 24  | 1          | FCSR                                 |                        | Fixed                            | 0x1                             |
| 0x1               | N/A           | N/A         | Field           | EDX  | 25  | 25  | 1          | SSE                                  |                        | Fixed                            | 0x1                             |
| 0x1               | N/A           | N/A         | Field           | EDX  | 26  | 26  | 1          | SSE2                                 |                        | Fixed                            | 0x1                             |
| 0x1               | N/A           | N/A         | Field           | EDX  | 27  | 27  | 1          | SS                                   |                        | Configured & Native              |                                 |
| 0x1               | N/A           | N/A         | Field           | EDX  | 28  | 28  | 1          | HTT                                  | TD_PARAMS.CPUID_CONFIG | Configured & Native              |                                 |
| 0x1               | N/A           | N/A         | Field           | EDX  | 29  | 29  | 1          | TM                                   | TD_PARAMS.CPUID_CONFIG | Configured & Native              |                                 |
| 0x1               | N/A           | N/A         | Field           | EDX  | 30  | 30  | 1          | Reserved                             |                        | Fixed                            | 0x0                             |
| 0x1               | N/A           | N/A         | Field           | EDX  | 31  | 31  | 1          | PBE                                  | TD_PARAMS.CPUID_CONFIG | Configured & Native              |                                 |
| <b>0x2</b>        | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |      |     |     |            | <b>Leaf 0x2</b>                      |                        |                                  |                                 |
| 0x2               | N/A           | N/A         | Field           | EAX  | 7   | 0   | 8          | Number of descriptors                |                        | Fixed                            | 0x01                            |
| 0x2               | N/A           | N/A         | Field           | EAX  | 15  | 8   | 8          | LLC Descriptor                       |                        | Fixed                            | 0xFF                            |
| 0x2               | N/A           | N/A         | Field           | EAX  | 23  | 16  | 8          | TLB Descriptor                       |                        | Fixed                            | 0xFE                            |
| 0x2               | N/A           | N/A         | Field           | EAX  | 31  | 24  | 8          | Descriptor                           |                        | Fixed                            | 0x00                            |
| 0x2               | N/A           | N/A         | Field           | EBX  | 7   | 0   | 8          | Prefetching size                     |                        | Fixed                            | 0x00                            |
| 0x2               | N/A           | N/A         | Field           | EBX  | 15  | 8   | 8          | 0                                    |                        | Fixed                            | 0x00                            |
| 0x2               | N/A           | N/A         | Field           | EBX  | 23  | 16  | 8          | 0                                    |                        | Fixed                            | 0x00                            |
| 0x2               | N/A           | N/A         | Field           | EBX  | 31  | 24  | 8          | Descriptor                           |                        | Fixed                            | 0x00                            |
| 0x2               | N/A           | N/A         | Field           | ECX  | 7   | 0   | 8          | 0                                    |                        | Fixed                            | 0x00                            |
| 0x2               | N/A           | N/A         | Field           | ECX  | 15  | 8   | 8          | 0                                    |                        | Fixed                            | 0x00                            |
| 0x2               | N/A           | N/A         | Field           | ECX  | 23  | 16  | 8          | 0                                    |                        | Fixed                            | 0x00                            |
| 0x2               | N/A           | N/A         | Field           | ECX  | 31  | 24  | 8          | Descriptor                           |                        | Fixed                            | 0x00                            |
| 0x2               | N/A           | N/A         | Field           | EDX  | 7   | 0   | 8          | 0                                    |                        | Fixed                            | 0x00                            |
| 0x2               | N/A           | N/A         | Field           | EDX  | 15  | 8   | 8          | 0                                    |                        | Fixed                            | 0x00                            |
| 0x2               | N/A           | N/A         | Field           | EDX  | 23  | 16  | 8          | 0                                    |                        | Fixed                            | 0x00                            |
| 0x2               | N/A           | N/A         | Field           | EDX  | 31  | 24  | 8          | Descriptor                           |                        | Fixed                            | 0x00                            |
| <b>0x3</b>        | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |      |     |     |            | <b>Leaf 0x3</b>                      |                        |                                  |                                 |
| 0x3               | N/A           | N/A         | Field           | EAX  | 31  | 0   | 32         | Reserved                             |                        | Fixed                            | 0x0                             |
| 0x3               | N/A           | N/A         | Field           | EBX  | 31  | 0   | 32         | Reserved                             |                        | Fixed                            | 0x0                             |
| 0x3               | N/A           | N/A         | Field           | ECX  | 31  | 0   | 32         | Reserved                             |                        | Fixed                            | 0x0                             |
| 0x3               | N/A           | N/A         | Field           | EDX  | 31  | 0   | 32         | Reserved                             |                        | Fixed                            | 0x0                             |
| <b>0x4</b>        | <b>0x0</b>    | <b>0x0</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x4 / Sub-Leaf 0x0</b>       |                        |                                  |                                 |
| 0x4               | 0x0           | 0x0         | Field           | EAX  | 4   | 0   | 5          | Type                                 | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x0           | 0x0         | Field           | EAX  | 7   | 5   | 3          | Level                                | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x0           | 0x0         | Field           | EAX  | 8   | 8   | 1          | Self Initializing                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x0           | 0x0         | Field           | EAX  | 9   | 9   | 1          | Fully Associative                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x0           | 0x0         | Field           | EAX  | 13  | 10  | 4          | Reserved                             |                        | Fixed                            | 0x0                             |
| 0x4               | 0x0           | 0x0         | Field           | EAX  | 25  | 14  | 12         | Addressable IDs Sharing this Cache   | TD_PARAMS.CPUID_CONFIG | Configured                       |                                 |
| 0x4               | 0x0           | 0x0         | Field           | EAX  | 31  | 26  | 6          | Addressable IDs for Cores in Package | TD_PARAMS.CPUID_CONFIG | Configured                       |                                 |
| 0x4               | 0x0           | 0x0         | Field           | EBX  | 11  | 0   | 12         | L                                    |                        | Fixed                            | 0x3F                            |
| 0x4               | 0x0           | 0x0         | Field           | EBX  | 21  | 12  | 10         | P                                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x0           | 0x0         | Field           | EBX  | 31  | 22  | 10         | W                                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x0           | 0x0         | Field           | ECX  | 31  | 0   | 32         | Number of Sets                       | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x0           | 0x0         | Field           | EDX  | 0   | 0   | 1          | WBINVD                               | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x0           | 0x0         | Field           | EDX  | 1   | 1   | 1          | Cache Inclusiveness                  | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x0           | 0x0         | Field           | EDX  | 2   | 2   | 1          | Complex cache indexing               | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x0           | 0x0         | Field           | EDX  | 31  | 3   | 29         | Reserved                             |                        | Fixed                            | 0x0                             |
| <b>0x4</b>        | <b>0x1</b>    | <b>0x1</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x4 / Sub-Leaf 0x1</b>       |                        |                                  |                                 |
| 0x4               | 0x1           | 0x1         | Field           | EAX  | 4   | 0   | 5          | Type                                 | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x1           | 0x1         | Field           | EAX  | 7   | 5   | 3          | Level                                | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x1           | 0x1         | Field           | EAX  | 8   | 8   | 1          | Self Initializing                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x1           | 0x1         | Field           | EAX  | 9   | 9   | 1          | Fully Associative                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x1           | 0x1         | Field           | EAX  | 13  | 10  | 4          | Reserved                             |                        | Fixed                            | 0x0                             |
| 0x4               | 0x1           | 0x1         | Field           | EAX  | 25  | 14  | 12         | Addressable IDs Sharing this Cache   | TD_PARAMS.CPUID_CONFIG | Configured                       |                                 |
| 0x4               | 0x1           | 0x1         | Field           | EAX  | 31  | 26  | 6          | Addressable IDs for Cores in Package | TD_PARAMS.CPUID_CONFIG | Configured                       |                                 |
| 0x4               | 0x1           | 0x1         | Field           | EBX  | 11  | 0   | 12         | L                                    |                        | Fixed                            | 0x3F                            |
| 0x4               | 0x1           | 0x1         | Field           | EBX  | 21  | 12  | 10         | P                                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x1           | 0x1         | Field           | EBX  | 31  | 22  | 10         | W                                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |

| Leaf and Sub-Leaf |               |             | CPUID Field     |                                |     |     |            | Virtualization                       |                        |                                  |                                 |
|-------------------|---------------|-------------|-----------------|--------------------------------|-----|-----|------------|--------------------------------------|------------------------|----------------------------------|---------------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg.                           | MSB | LSB | Field Size | Field Name                           | Configuration Details  | Bit or Field Virtualization Type | Virtualization Details          |
| 0x4               | 0x1           | 0x1         | Field           | ECX                            | 31  | 0   | 32         | Number of Sets                       | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x1           | 0x1         | Field           | EDX                            | 0   | 0   | 1          | WBINVD                               | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x1           | 0x1         | Field           | EDX                            | 1   | 1   | 1          | Cache Inclusiveness                  | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x1           | 0x1         | Field           | EDX                            | 2   | 2   | 1          | Complex cache indexing               | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x1           | 0x1         | Field           | EDX                            | 31  | 3   | 29         | Reserved                             |                        | Fixed                            | 0x0                             |
| <b>0x4</b>        | <b>0x2</b>    | <b>0x2</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x4 / Sub-Leaf 0x2</b> |     |     |            |                                      |                        |                                  |                                 |
| 0x4               | 0x2           | 0x2         | Field           | EAX                            | 4   | 0   | 5          | Type                                 | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x2           | 0x2         | Field           | EAX                            | 7   | 5   | 3          | Level                                | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x2           | 0x2         | Field           | EAX                            | 8   | 8   | 1          | Self Initializing                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x2           | 0x2         | Field           | EAX                            | 9   | 9   | 1          | Fully Associative                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x2           | 0x2         | Field           | EAX                            | 13  | 10  | 4          | Reserved                             |                        | Fixed                            | 0x0                             |
| 0x4               | 0x2           | 0x2         | Field           | EAX                            | 25  | 14  | 12         | Addressable IDs Sharing this Cache   | TD_PARAMS.CPUID_CONFIG | Configured                       |                                 |
| 0x4               | 0x2           | 0x2         | Field           | EAX                            | 31  | 26  | 6          | Addressable IDs for Cores in Package | TD_PARAMS.CPUID_CONFIG | Configured                       |                                 |
| 0x4               | 0x2           | 0x2         | Field           | EBX                            | 11  | 0   | 12         | L                                    |                        | Fixed                            | 0x3F                            |
| 0x4               | 0x2           | 0x2         | Field           | EBX                            | 21  | 12  | 10         | P                                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x2           | 0x2         | Field           | EBX                            | 31  | 22  | 10         | W                                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x2           | 0x2         | Field           | ECX                            | 31  | 0   | 32         | Number of Sets                       | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x2           | 0x2         | Field           | EDX                            | 0   | 0   | 1          | WBINVD                               | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x2           | 0x2         | Field           | EDX                            | 1   | 1   | 1          | Cache Inclusiveness                  | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x2           | 0x2         | Field           | EDX                            | 2   | 2   | 1          | Complex cache indexing               | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x2           | 0x2         | Field           | EDX                            | 31  | 3   | 29         | Reserved                             |                        | Fixed                            | 0x0                             |
| <b>0x4</b>        | <b>0x3</b>    | <b>0x3</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x4 / Sub-Leaf 0x3</b> |     |     |            |                                      |                        |                                  |                                 |
| 0x4               | 0x3           | 0x3         | Field           | EAX                            | 4   | 0   | 5          | Type                                 | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x3           | 0x3         | Field           | EAX                            | 7   | 5   | 3          | Level                                | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x3           | 0x3         | Field           | EAX                            | 8   | 8   | 1          | Self Initializing                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x3           | 0x3         | Field           | EAX                            | 9   | 9   | 1          | Fully Associative                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x3           | 0x3         | Field           | EAX                            | 13  | 10  | 4          | Reserved                             |                        | Fixed                            | 0x0                             |
| 0x4               | 0x3           | 0x3         | Field           | EAX                            | 25  | 14  | 12         | Addressable IDs Sharing this Cache   | TD_PARAMS.CPUID_CONFIG | Configured                       |                                 |
| 0x4               | 0x3           | 0x3         | Field           | EAX                            | 31  | 26  | 6          | Addressable IDs for Cores in Package | TD_PARAMS.CPUID_CONFIG | Configured                       |                                 |
| 0x4               | 0x3           | 0x3         | Field           | EBX                            | 11  | 0   | 12         | L                                    |                        | Fixed                            | 0x3F                            |
| 0x4               | 0x3           | 0x3         | Field           | EBX                            | 21  | 12  | 10         | P                                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x3           | 0x3         | Field           | EBX                            | 31  | 22  | 10         | W                                    | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x3           | 0x3         | Field           | ECX                            | 31  | 0   | 32         | Number of Sets                       | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x3           | 0x3         | Field           | EDX                            | 0   | 0   | 1          | WBINVD                               | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x3           | 0x3         | Field           | EDX                            | 1   | 1   | 1          | Cache Inclusiveness                  | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x3           | 0x3         | Field           | EDX                            | 2   | 2   | 1          | Complex cache indexing               | TD_PARAMS.CPUID_CONFIG | Special                          | if REDUCE_VE, use native @ init |
| 0x4               | 0x3           | 0x3         | Field           | EDX                            | 31  | 3   | 29         | Reserved                             |                        | Fixed                            | 0x0                             |
| <b>0x4</b>        | <b>0x4</b>    | <b>0x4</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x4 / Sub-Leaf 0x4</b> |     |     |            |                                      |                        |                                  |                                 |
| 0x4               | 0x4           | 0x4         | Field           | EAX                            | 4   | 0   | 5          | Type                                 |                        | Fixed                            | 0x0                             |
| 0x4               | 0x4           | 0x4         | Field           | EAX                            | 7   | 5   | 3          | Level                                |                        | Fixed                            | 0x0                             |
| 0x4               | 0x4           | 0x4         | Field           | EAX                            | 8   | 8   | 1          | Self Initializing                    |                        | Fixed                            | 0x0                             |
| 0x4               | 0x4           | 0x4         | Field           | EAX                            | 9   | 9   | 1          | Fully Associative                    |                        | Fixed                            | 0x0                             |
| 0x4               | 0x4           | 0x4         | Field           | EAX                            | 13  | 10  | 4          | Reserved                             |                        | Fixed                            | 0x0                             |
| 0x4               | 0x4           | 0x4         | Field           | EAX                            | 25  | 14  | 12         | Addressable IDs Sharing this Cache   |                        | Fixed                            | 0x0                             |
| 0x4               | 0x4           | 0x4         | Field           | EAX                            | 31  | 26  | 6          | Addressable IDs for Cores in Package |                        | Fixed                            | 0x0                             |
| 0x4               | 0x4           | 0x4         | Field           | EBX                            | 11  | 0   | 12         | L                                    |                        | Fixed                            | 0x0                             |
| 0x4               | 0x4           | 0x4         | Field           | EBX                            | 21  | 12  | 10         | P                                    |                        | Fixed                            | 0x0                             |
| 0x4               | 0x4           | 0x4         | Field           | EBX                            | 31  | 22  | 10         | W                                    |                        | Fixed                            | 0x0                             |
| 0x4               | 0x4           | 0x4         | Field           | ECX                            | 31  | 0   | 32         | Number of Sets                       |                        | Fixed                            | 0x0                             |
| 0x4               | 0x4           | 0x4         | Field           | EDX                            | 0   | 0   | 1          | WBINVD                               |                        | Fixed                            | 0x0                             |
| 0x4               | 0x4           | 0x4         | Field           | EDX                            | 1   | 1   | 1          | Cache Inclusiveness                  |                        | Fixed                            | 0x0                             |

| Leaf and Sub-Leaf |               |             | CPUID Field     |      |     |     |            | Virtualization  |                        |                                  |                        |
|-------------------|---------------|-------------|-----------------|------|-----|-----|------------|---|------------------------|----------------------------------|------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg. | MSB | LSB | Field Size | Field Name  | Configuration Details  | Bit or Field Virtualization Type | Virtualization Details |
| 0x4               | 0x4           | 0x4         | Field           | EDX  | 2   | 2   | 1          | Complex Cache Indexing  |                        | Fixed                            | 0x0                    |
| 0x4               | 0x4           | 0x4         | Field           | EDX  | 31  | 3   | 29         | Reserved  |                        | Fixed                            | 0x0                    |
| <b>0x5</b>        | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |      |     |     |            | <b>Leaf 0x5</b>   |                        |                                  |                        |
| 0x5               | N/A           | N/A         | Field           | EAX  | 15  | 0   | 16         | Smallest Monitor-line Size  |                        | CPUID_Enabled & Native           |                        |
| 0x5               | N/A           | N/A         | Field           | EAX  | 31  | 16  | 16         | Reserved  |                        | Fixed                            | 0x0                    |
| 0x5               | N/A           | N/A         | Field           | EBX  | 15  | 0   | 16         | Largest Monitor-line Size   |                        | CPUID_Enabled & Native           |                        |
| 0x5               | N/A           | N/A         | Field           | EBX  | 31  | 16  | 16         | Reserved  |                        | Fixed                            | 0x0                    |
| 0x5               | N/A           | N/A         | Field           | ECX  | 0   | 0   | 1          | Monitor-Mwait extensions (beyond EAX and EBX registers) supported           |                        | CPUID_Enabled & Native           |                        |
| 0x5               | N/A           | N/A         | Field           | ECX  | 1   | 1   | 1          | Masked interrupts as break-event for MWAIT                                  |                        | CPUID_Enabled & Native           |                        |
| 0x5               | N/A           | N/A         | Field           | ECX  | 31  | 2   | 30         | Reserved  |                        | Fixed                            | 0x0                    |
| 0x5               | N/A           | N/A         | Field           | EDX  | 3   | 0   | 4          | C0 Sub-States   |                        | CPUID_Enabled & Native           |                        |
| 0x5               | N/A           | N/A         | Field           | EDX  | 7   | 4   | 4          | C1 Sub-States   |                        | CPUID_Enabled & Native           |                        |
| 0x5               | N/A           | N/A         | Field           | EDX  | 11  | 8   | 4          | C2 Sub-States   |                        | CPUID_Enabled & Native           |                        |
| 0x5               | N/A           | N/A         | Field           | EDX  | 15  | 12  | 4          | C3 Sub-States   |                        | CPUID_Enabled & Native           |                        |
| 0x5               | N/A           | N/A         | Field           | EDX  | 19  | 16  | 4          | C4 Sub-States   |                        | CPUID_Enabled & Native           |                        |
| 0x5               | N/A           | N/A         | Field           | EDX  | 23  | 20  | 4          | C5 Sub-States   |                        | CPUID_Enabled & Native           |                        |
| 0x5               | N/A           | N/A         | Field           | EDX  | 27  | 24  | 4          | C6 Sub-States   |                        | CPUID_Enabled & Native           |                        |
| 0x5               | N/A           | N/A         | Field           | EDX  | 31  | 28  | 4          | C7 Sub-States   |                        | CPUID_Enabled & Native           |                        |
| <b>0x6</b>        | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |      |     |     |            | <b>Leaf 0x6</b>   |                        |                                  |                        |
| 0x6               | N/A           | N/A         | Field           | EAX  | 0   | 0   | 1          | Digital Temperature Sensor  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 1   | 1   | 1          | Intel Turbo Boost Technology  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 2   | 2   | 1          | ARAT  |                        | Fixed                            | 0x1                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 3   | 3   | 1          | Reserved_3  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 4   | 4   | 1          | PLN   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 5   | 5   | 1          | ECMD  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 6   | 6   | 1          | PTM   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 7   | 7   | 1          | HWP   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 8   | 8   | 1          | HWP Notification  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 9   | 9   | 1          | HWP Activity Window   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 10  | 10  | 1          | HWP Energy Performance Preference   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 11  | 11  | 1          | HWP Package Level Request   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 12  | 12  | 1          | Reserved_12   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 13  | 13  | 1          | HDC   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 14  | 14  | 1          | Favored Core Enable   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 15  | 15  | 1          | HWP Notification Due Highest Change   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 16  | 16  | 1          | HWP PECL Override   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 17  | 17  | 1          | HWP Thread Request Support  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 18  | 18  | 1          | Low Latency and Post IA32_HWP_REQUEST                                       |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 19  | 19  | 1          | HW_FEEDBACK   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 20  | 20  | 1          | Voting Rights (new in GLC?)   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 21  | 21  | 1          | HWP Thread Info   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 22  | 22  | 1          | Reserved_22   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 23  | 23  | 1          | Intel Thread Director supported   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EAX  | 31  | 24  | 8          | Reserved_31_24  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EBX  | 3   | 0   | 4          | Interrupt Thresholds  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EBX  | 31  | 4   | 28         | Reserved  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | ECX  | 0   | 0   | 1          | Hardware Coordination Feedback  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | ECX  | 1   | 1   | 1          | ACNT2   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | ECX  | 2   | 2   | 1          | Reserved_2  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | ECX  | 3   | 3   | 1          | Performance-Energy Bias   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | ECX  | 31  | 4   | 28         | Reserved_31_4   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EDX  | 7   | 0   | 8          | Supported Capabilities bitmap   |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EDX  | 11  | 8   | 4          | HW Feedback Table size  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EDX  | 15  | 12  | 4          | Reserved  |                        | Fixed                            | 0x0                    |
| 0x6               | N/A           | N/A         | Field           | EDX  | 31  | 16  | 16         | HW Feedback Table Indication  |                        | Fixed                            | 0x0                    |
| <b>0x7</b>        | <b>0x0</b>    | <b>0x0</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x7 / Sub-Leaf 0x0</b>  |                        |                                  |                        |
| 0x7               | 0x0           | 0x0         | Field           | EAX  | 31  | 0   | 32         | Max Sub-Leaves  |                        | Fixed                            | 0x2                    |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 0   | 0   | 1          | FSGSBASE  |                        | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 1   | 1   | 1          | IA32_TSC_ADJUST   |                        | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 2   | 2   | 1          | SGX   |                        | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 3   | 3   | 1          | BMI1  | TD_PARAMS.CPUID_CONFIG | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 4   | 4   | 1          | HLE   | TD_PARAMS.CPUID_CONFIG | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 5   | 5   | 1          | AVX2  | TD_PARAMS.XFAM         | XFAM & Native                    | XFAM[2]                |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 6   | 6   | 1          | FDP_EXCPTN_ONLY   |                        | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 7   | 7   | 1          | SMEP  |                        | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 8   | 8   | 1          | BMI2  | TD_PARAMS.CPUID_CONFIG | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 9   | 9   | 1          | Enhanced REP MOVSB/STOSB  | TD_PARAMS.CPUID_CONFIG | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 10  | 10  | 1          | INVPCID   |                        | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 11  | 11  | 1          | RTM   | TD_PARAMS.CPUID_CONFIG | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 12  | 12  | 1          | PQM   | TD_PARAMS.CPUID_CONFIG | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 13  | 13  | 1          | FCS/FDS Deprecation   |                        | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 14  | 14  | 1          | MPX   |                        | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field           | EBX  | 15  | 15  | 1          | RDT-A. Supports Intel® Resource Director Technology (Intel® RDT) Allocation | TD_PARAMS.CPUID_CONFIG | Configured & Native              |                        |

| Leaf and Sub-Leaf |               |             | CPUID Field |      |     |     |            | Virtualization          |   |                                  |                        |
|-------------------|---------------|-------------|-------------|------|-----|-----|------------|-------------------------|---|----------------------------------|------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header      | Reg. | MSB | LSB | Field Size | Field Name              | Configuration Details                     | Bit or Field Virtualization Type | Virtualization Details |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 16  | 16  | 1          | AVX512F                 | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 17  | 17  | 1          | AVX512DQ                | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 18  | 18  | 1          | RDSEED                  |   | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 19  | 19  | 1          | ADCX/ADOX               | TD_PARAMS.XFAM                            | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 20  | 20  | 1          | SMAP/CLAC/STAC          |   | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 21  | 21  | 1          | AVX512_IFMA             | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 22  | 22  | 1          | PCOMMIT                 |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 23  | 23  | 1          | CLFLUSHOPT              |   | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 24  | 24  | 1          | CLWB                    |   | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 25  | 25  | 1          | RTIT                    | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[8]                |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 26  | 26  | 1          | AVX512PF                | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 27  | 27  | 1          | AVX512ER                | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 28  | 28  | 1          | AVX512CD                | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 29  | 29  | 1          | SHA                     |   | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 30  | 30  | 1          | AVX512BW                | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | EBX  | 31  | 31  | 1          | AVX512VL                | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 0   | 0   | 1          | PREFETCHWT1             | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 1   | 1   | 1          | AVX512_VBMI             | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 2   | 2   | 1          | UMIP                    | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 3   | 3   | 1          | PKU                     | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[9]                |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 4   | 4   | 1          | OSPKE                   |   | Calculated                       | CR4.PKE                |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 5   | 5   | 1          | MONITORX/MWAITX         |   | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 6   | 6   | 1          | AVX512_VBMI2            | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 7   | 7   | 1          | CET Shadow Stack        | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[12:11]            |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 8   | 8   | 1          | GFNI                    | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 9   | 9   | 1          | VAES                    | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[2]                |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 10  | 10  | 1          | VPCLMULQDQ              | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[2]                |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 11  | 11  | 1          | AVX512_VNNI             | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 12  | 12  | 1          | AVX512_BITALG           | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 13  | 13  | 1          | TME                     |   | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 14  | 14  | 1          | AVX512_VPOPCNTDQ        | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 15  | 15  | 1          | Reserved                |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 16  | 16  | 1          | 57 bit Address Support  | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 21  | 17  | 5          | MAWAU for MPX           |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 22  | 22  | 1          | RDPID                   | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 23  | 23  | 1          | KL_ENABLED              |   | Attributes & Native              | KL                     |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 24  | 24  | 1          | BUSLOCK                 |   | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 25  | 25  | 1          | CLDEMOT                 | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 26  | 26  | 1          | Reserved                |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 27  | 27  | 1          | MOVDIRI                 |   | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 28  | 28  | 1          | MOVDIR64B               |   | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 29  | 29  | 1          | ENQCMD                  |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 30  | 30  | 1          | SGX_LC                  |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | ECX  | 31  | 31  | 1          | PKS                     |   | Attributes & Native              | PKS                    |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 0   | 0   | 1          | Reserved                |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 1   | 1   | 1          | Reserved                |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 2   | 2   | 1          | AVX512_4VNNIW           | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 3   | 3   | 1          | AVX512_4FMAPS           | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 4   | 4   | 1          | Fast Short REP MOV      | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 5   | 5   | 1          | ULI                     | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[14]               |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 6   | 6   | 1          | Reserved                |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 7   | 7   | 1          | Reserved                |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 8   | 8   | 1          | AVX512_VP2INTERSECT     | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 9   | 9   | 1          | MCU_OPT supported       |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 10  | 10  | 1          | MD_CLEAR supported      |   | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 11  | 11  | 1          | Reserved                |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 12  | 12  | 1          | Reserved                |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 13  | 13  | 1          | RTM_FORCE_ABORT_SUPPORT |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field       | EDX  | 14  | 14  | 1          | SERIALIZE Inst          | TD_PARAMS.CPUID_CONFIG                    | Configured & Native              |                        |

| Leaf and Sub-Leaf |               |             | CPUID Field     |      |     |     |            | Virtualization                                   |   |                                  |                        |
|-------------------|---------------|-------------|-----------------|------|-----|-----|------------|--|---|----------------------------------|------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg. | MSB | LSB | Field Size | Field Name                                       | Configuration Details                                   | Bit or Field Virtualization Type | Virtualization Details |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 15  | 15  | 1          | Hybrid Part                                      |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 16  | 16  | 1          | TSXLDTRK   | TD_PARAMS.CPUID_CONFIG                                  | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 17  | 17  | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 18  | 18  | 1          | PCONFIG  |   | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 19  | 19  | 1          | Architectural LBR support                        | TD_PARAMS.XFAM  | XFAM & Native                    | XFAM[15]               |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 20  | 20  | 1          | CET  | TD_PARAMS.XFAM  | XFAM & Native                    | XFAM[12:11]            |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 21  | 21  | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 22  | 22  | 1          | AMX-BF16   | TD_PARAMS.XFAM  | XFAM & Native                    | XFAM[18:17]            |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 23  | 23  | 1          | AVX512_FP16                                      | TD_PARAMS.XFAM  | XFAM & Native                    | XFAM[7:5]              |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 24  | 24  | 1          | AMX-TILE   | TD_PARAMS.XFAM  | XFAM & Native                    | XFAM[18:17]            |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 25  | 25  | 1          | AMX-INT8   | TD_PARAMS.XFAM  | XFAM & Native                    | XFAM[18:17]            |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 26  | 26  | 1          | IBRS (indirect branch restricted speculation)    |   | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 27  | 27  | 1          | STIBP (single thread indirect branch predictors) |   | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 28  | 28  | 1          | L1D_FLUSH, IA32_FLUSH_CMD support.               | TD_PARAMS.CPUID_CONFIG                                  | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 29  | 29  | 1          | IA32_ARCH_CAPABILITIES Support                   |   | Fixed                            | 0x1                    |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 30  | 30  | 1          | IA32_CORE_CAPABILITIES Present                   |   | Configured & Native              |                        |
| 0x7               | 0x0           | 0x0         | Field           | EDX  | 31  | 31  | 1          | SSBD (Speculative Store Bypass Disable)          |   | Fixed                            | 0x1                    |
| <b>0x7</b>        | <b>0x1</b>    | <b>0x1</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x7 / Sub-Leaf 0x1</b>                   |   |                                  |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 0   | 0   | 1          | SHA512   | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG               | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 1   | 1   | 1          | SM3  |   | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 2   | 2   | 1          | SM4  |   | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 3   | 3   | 1          | RAO_INT  |   | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 4   | 4   | 1          | AVX_VNNI   | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG               | XFAM & Configured & Native       | XFAM[2]                |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 5   | 5   | 1          | AVX512_BF16                                      | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG               | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 6   | 6   | 1          | LASS   | TD_PARAMS.ATTRIBUTES                                    | Attributes & Native              | LASS                   |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 7   | 7   | 1          | CMPCXADD   |   | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 8   | 8   | 1          | Arch Perfmon Extended Leaf Supported             | TD_PARAMS.ATTRIBUTES.PERFMON,<br>TD_PARAMS.CPUID_CONFIG | Attributes & Configured & Native | PERFMON                |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 9   | 9   | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 10  | 10  | 1          | Fast Zero-Length MOVSB                           | TD_PARAMS.CPUID_CONFIG                                  | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 11  | 11  | 1          | Fast Short STOSB                                 | TD_PARAMS.CPUID_CONFIG                                  | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 12  | 12  | 1          | Fast short CMPSB/SCASB                           | TD_PARAMS.CPUID_CONFIG                                  | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 16  | 13  | 4          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 17  | 17  | 1          | FRED   | TD_PARAMS.CPUID_CONFIG                                  | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 18  | 18  | 1          | LKGS   | TD_PARAMS.CPUID_CONFIG                                  | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 19  | 19  | 1          | WRMSRNS  |   | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 20  | 20  | 1          | NMI source identification                        |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 21  | 21  | 1          | AMX-FP16   | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG               | XFAM & Configured & Native       | XFAM[18:17]            |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 22  | 22  | 1          | HRESET   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 23  | 23  | 1          | AVX-IFMA   | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG               | XFAM & Configured & Native       | XFAM[2]                |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 24  | 24  | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 25  | 25  | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 26  | 26  | 1          | LAM  | TD_PARAMS.CPUID_CONFIG                                  | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 27  | 27  | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 28  | 28  | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 29  | 29  | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 30  | 30  | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EAX  | 31  | 31  | 1          | PREFETCHRST2/MOVRs                               |   | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EBX  | 0   | 0   | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EBX  | 1   | 1   | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EBX  | 27  | 2   | 26         | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EBX  | 28  | 28  | 1          | MPSADBW_512                                      | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG               | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x1           | 0x1         | Field           | EBX  | 29  | 29  | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EBX  | 30  | 30  | 1          | AVX512-RAO-FP                                    |   | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EBX  | 31  | 31  | 1          | AVX-RAO-FP                                       |   | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | ECX  | 0   | 0   | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | ECX  | 1   | 1   | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | ECX  | 2   | 2   | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | ECX  | 3   | 3   | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | ECX  | 4   | 4   | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | ECX  | 5   | 5   | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | ECX  | 8   | 8   | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | ECX  | 31  | 11  | 21         | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 0   | 0   | 1          | Reserved   |   | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 1   | 1   | 1          | AVX512-VNNI-FP16                                 |   | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 2   | 2   | 1          | AVX512-VNNI-INT8                                 |   | XFAM & Configured & Native       | XFAM[7:5]              |

| Leaf and Sub-Leaf |               |             | CPUID Field     |      |     |     |            | Virtualization                            |                              |                                  |                        |
|-------------------|---------------|-------------|-----------------|------|-----|-----|------------|---|------------------------------|----------------------------------|------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg. | MSB | LSB | Field Size | Field Name                                | Configuration Details        | Bit or Field Virtualization Type | Virtualization Details |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 3   | 3   | 1          | AVX512-NE-CONVERT                         |                              | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 4   | 4   | 1          | AVX-VNNI-INT8                             |                              | XFAM & Configured & Native       | XFAM[2]                |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 5   | 5   | 1          | AVX-NE-CONVERT                            |                              | XFAM & Configured & Native       | XFAM[2]                |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 6   | 6   | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 7   | 7   | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 8   | 8   | 1          | AMX-COMPLEX                               |                              | XFAM & Configured & Native       | XFAM[18:17]            |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 9   | 9   | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 10  | 10  | 1          | AVX-VNNI-INT16                            |                              | XFAM & Configured & Native       | XFAM[2]                |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 11  | 11  | 1          | AVX512-VNNI-INT16                         |                              | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 12  | 12  | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 13  | 13  | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 14  | 14  | 1          | SW code prefetch                          |                              | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 15  | 15  | 1          | UMSR                                      |                              | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 16  | 16  | 1          | AVX512-BF16-NE                            |                              | XFAM & Configured & Native       | XFAM[2]                |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 17  | 17  | 1          | UIRET loads UIF                           |                              | Configured & Native              |                        |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 18  | 18  | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 19  | 19  | 1          | Converged vector ISA enable               |                              | XFAM & Configured & Native       | XFAM[7:5]              |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 20  | 20  | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 21  | 21  | 1          | APX_F                                     |                              | XFAM & Native                    | XFAM[19]               |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 22  | 22  | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 23  | 23  | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 28  | 24  | 5          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 29  | 29  | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 30  | 30  | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x1           | 0x1         | Field           | EDX  | 31  | 31  | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| <b>0x7</b>        | <b>0x2</b>    | <b>0x2</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x7 / Sub-Leaf 0x2</b>            |                              |                                  |                        |
| 0x7               | 0x2           | 0x2         | Field           | EAX  | 31  | 0   | 32         | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x2           | 0x2         | Field           | EBX  | 31  | 0   | 32         | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x2           | 0x2         | Field           | ECX  | 31  | 0   | 32         | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x2           | 0x2         | Field           | EDX  | 0   | 0   | 1          | PSFD                                      |                              | Fixed                            | 0x1                    |
| 0x7               | 0x2           | 0x2         | Field           | EDX  | 1   | 1   | 1          | JPRED_CTRL                                |                              | Fixed                            | 0x1                    |
| 0x7               | 0x2           | 0x2         | Field           | EDX  | 2   | 2   | 1          | RRSBA_CTRL                                |                              | Fixed                            | 0x1                    |
| 0x7               | 0x2           | 0x2         | Field           | EDX  | 3   | 3   | 1          | DDPD_U                                    |                              | Configured & Native              |                        |
| 0x7               | 0x2           | 0x2         | Field           | EDX  | 4   | 4   | 1          | BHL_CTRL                                  |                              | Fixed                            | 0x1                    |
| 0x7               | 0x2           | 0x2         | Field           | EDX  | 5   | 5   | 1          | MCDDT_NO                                  |                              | Configured & Native              |                        |
| 0x7               | 0x2           | 0x2         | Field           | EDX  | 6   | 6   | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x2           | 0x2         | Field           | EDX  | 15  | 7   | 9          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x2           | 0x2         | Field           | EDX  | 16  | 16  | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x2           | 0x2         | Field           | EDX  | 17  | 17  | 1          | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x7               | 0x2           | 0x2         | Field           | EDX  | 31  | 18  | 14         | Reserved                                  |                              | Fixed                            | 0x0                    |
| <b>0x8</b>        | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |      |     |     |            | <b>Leaf 0x8</b>                           |                              |                                  |                        |
| 0x8               | N/A           | N/A         | Field           | EAX  | 31  | 0   | 32         | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x8               | N/A           | N/A         | Field           | EBX  | 31  | 0   | 32         | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x8               | N/A           | N/A         | Field           | ECX  | 31  | 0   | 32         | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x8               | N/A           | N/A         | Field           | EDX  | 31  | 0   | 32         | Reserved                                  |                              | Fixed                            | 0x0                    |
| <b>0x9</b>        | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |      |     |     |            | <b>Leaf 0x9</b>                           |                              |                                  |                        |
| 0x9               | N/A           | N/A         | Field           | EAX  | 31  | 0   | 32         | IA32_PLATFORM_DCA_CAP                     |                              | Fixed                            | 0x0                    |
| 0x9               | N/A           | N/A         | Field           | EBX  | 31  | 0   | 32         | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x9               | N/A           | N/A         | Field           | ECX  | 31  | 0   | 32         | Reserved                                  |                              | Fixed                            | 0x0                    |
| 0x9               | N/A           | N/A         | Field           | EDX  | 31  | 0   | 32         | Reserved                                  |                              | Fixed                            | 0x0                    |
| <b>0xa</b>        | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |      |     |     |            | <b>Leaf 0xa</b>                           |                              |                                  |                        |
| 0xa               | N/A           | N/A         | Field           | EAX  | 7   | 0   | 8          | Version                                   | TD_PARAMS.ATTRIBUTES.PERFMON | Attributes & Native              | PERFMON                |
| 0xa               | N/A           | N/A         | Field           | EAX  | 15  | 8   | 8          | Number of GP Counters                     | TD_PARAMS.ATTRIBUTES.PERFMON | Attributes & Native (Hybrid)     |                        |
| 0xa               | N/A           | N/A         | Field           | EAX  | 23  | 16  | 8          | Width of GP Counters                      | TD_PARAMS.ATTRIBUTES.PERFMON | Attributes & Native              | PERFMON                |
| 0xa               | N/A           | N/A         | Field           | EAX  | 31  | 24  | 8          | Length of EBX Vector                      | TD_PARAMS.ATTRIBUTES.PERFMON | Attributes & Native (Hybrid)     |                        |
| 0xa               | N/A           | N/A         | Field           | EBX  | 0   | 0   | 1          | Core Cycles Not Available                 | TD_PARAMS.ATTRIBUTES.PERFMON | Attributes & Native (Hybrid)     |                        |
| 0xa               | N/A           | N/A         | Field           | EBX  | 1   | 1   | 1          | Instructions Retired Not Available        | TD_PARAMS.ATTRIBUTES.PERFMON | Attributes & Native (Hybrid)     |                        |
| 0xa               | N/A           | N/A         | Field           | EBX  | 2   | 2   | 1          | Reference Cycles Not Available            | TD_PARAMS.ATTRIBUTES.PERFMON | Attributes & Native (Hybrid)     |                        |
| 0xa               | N/A           | N/A         | Field           | EBX  | 3   | 3   | 1          | Last-Level Cache References Not Available | TD_PARAMS.ATTRIBUTES.PERFMON | Attributes & Native (Hybrid)     |                        |

| Leaf and Sub-Leaf |               |             | CPUID Field     |                                       |     |     |            | Virtualization                           |  |                                  |                        |  |  |
|-------------------|---------------|-------------|-----------------|---------------------------------------|-----|-----|------------|--|--|----------------------------------|------------------------|--|--|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg.                                  | MSB | LSB | Field Size | Field Name                               | Configuration Details                  | Bit or Field Virtualization Type | Virtualization Details |  |  |
| 0xa               | N/A           | N/A         | Field           | EBX                                   | 4   | 4   | 1          | Last-Level Cache Misses Not Available    | TD_PARAMS.ATTRIBUTES.PERFMON           | Attributes & Native (Hybrid)     |                        |  |  |
| 0xa               | N/A           | N/A         | Field           | EBX                                   | 5   | 5   | 1          | Branch Instruction Retired Not Available | TD_PARAMS.ATTRIBUTES.PERFMON           | Attributes & Native (Hybrid)     |                        |  |  |
| 0xa               | N/A           | N/A         | Field           | EBX                                   | 6   | 6   | 1          | Branch Mispredict Retired Not Available  | TD_PARAMS.ATTRIBUTES.PERFMON           | Attributes & Native (Hybrid)     |                        |  |  |
| 0xa               | N/A           | N/A         | Field           | EBX                                   | 7   | 7   | 1          | Top-down slots event not available       | TD_PARAMS.ATTRIBUTES.PERFMON           | Attributes & Native (Hybrid)     |                        |  |  |
| 0xa               | N/A           | N/A         | Field           | EBX                                   | 31  | 8   | 24         | Other events not available bitmap        | TD_PARAMS.ATTRIBUTES.PERFMON           | Attributes & Native (Hybrid)     |                        |  |  |
| 0xa               | N/A           | N/A         | Field           | ECX                                   | 6   | 0   | 7          | Fixed Counter Support Bitmap [6:0]       | TD_PARAMS.ATTRIBUTES.PERFMON           | Attributes & Native (Hybrid)     |                        |  |  |
| 0xa               | N/A           | N/A         | Field           | ECX                                   | 31  | 7   | 25         | Fixed Counter Support Bitmap [31:7]      | TD_PARAMS.ATTRIBUTES.PERFMON           | Attributes & Native (Hybrid)     |                        |  |  |
| 0xa               | N/A           | N/A         | Field           | EDX                                   | 4   | 0   | 5          | Number of Fixed-Function Counters        | TD_PARAMS.ATTRIBUTES.PERFMON           | Attributes & Native (Hybrid)     |                        |  |  |
| 0xa               | N/A           | N/A         | Field           | EDX                                   | 12  | 5   | 8          | Width of Fixed-Function Counters         | TD_PARAMS.ATTRIBUTES.PERFMON           | Attributes & Native              | PERFMON                |  |  |
| 0xa               | N/A           | N/A         | Field           | EDX                                   | 13  | 13  | 1          | Reserved                                 |  | Fixed                            | 0x0                    |  |  |
| 0xa               | N/A           | N/A         | Field           | EDX                                   | 14  | 14  | 1          | Reserved                                 |  | Fixed                            | 0x0                    |  |  |
| 0xa               | N/A           | N/A         | Field           | EDX                                   | 15  | 15  | 1          | AnyThread Deprecation                    |  | Attributes & Native              | PERFMON                |  |  |
| 0xa               | N/A           | N/A         | Field           | EDX                                   | 31  | 16  | 16         | Reserved                                 |  | Fixed                            | 0x0                    |  |  |
| <b>0xb</b>        | <b>0x0</b>    | <b>0x1</b>  | <b>Sub-Leaf</b> | <b>Leaf 0xb / Sub-Leaves 0x0-0x1</b>  |     |     |            |  |  |                                  |                        |  |  |
| 0xb               | 0x0           | 0x1         | Field           | EAX                                   | 4   | 0   | 5          | Shift Count                              |  | Special                          | 0                      |  |  |
| 0xb               | 0x0           | 0x1         | Field           | EAX                                   | 31  | 5   | 27         | Reserved                                 |  | Fixed                            | 0                      |  |  |
| 0xb               | 0x0           | 0x1         | Field           | EBX                                   | 15  | 0   | 16         | Logical Processors at this Level         |  | Special                          | 0                      |  |  |
| 0xb               | 0x0           | 0x1         | Field           | EBX                                   | 31  | 16  | 16         | Reserved                                 |  | Fixed                            | 0                      |  |  |
| 0xb               | 0x0           | 0x1         | Field           | ECX                                   | 7   | 0   | 8          | Level Number                             |  | Special                          | 0                      |  |  |
| 0xb               | 0x0           | 0x1         | Field           | ECX                                   | 15  | 8   | 8          | Level Type                               |  | Special                          | 0                      |  |  |
| 0xb               | 0x0           | 0x1         | Field           | ECX                                   | 31  | 16  | 16         | Reserved                                 |  | Fixed                            | 0                      |  |  |
| 0xb               | 0x0           | 0x1         | Field           | EDX                                   | 31  | 0   | 32         | X2APIC ID                                |  | Calculated                       | 0                      |  |  |
| <b>0xb</b>        | <b>0x2</b>    | <b>0x2</b>  | <b>Sub-Leaf</b> | <b>Leaf 0xb / Sub-Leaf 0x2</b>        |     |     |            |  |  |                                  |                        |  |  |
| 0xb               | 0x2           | 0x2         | Field           | EAX                                   | 4   | 0   | 5          | Shift Count                              |  | Fixed                            | 0                      |  |  |
| 0xb               | 0x2           | 0x2         | Field           | EAX                                   | 31  | 5   | 27         | Reserved                                 |  | Fixed                            | 0                      |  |  |
| 0xb               | 0x2           | 0x2         | Field           | EBX                                   | 15  | 0   | 16         | Logical Processors at this Level         |  | Fixed                            | 0                      |  |  |
| 0xb               | 0x2           | 0x2         | Field           | EBX                                   | 31  | 16  | 16         | Reserved                                 |  | Fixed                            | 0                      |  |  |
| 0xb               | 0x2           | 0x2         | Field           | ECX                                   | 7   | 0   | 8          | Level Number                             |  | Special                          | 0                      |  |  |
| 0xb               | 0x2           | 0x2         | Field           | ECX                                   | 15  | 8   | 8          | Level Type                               |  | Fixed                            | 0                      |  |  |
| 0xb               | 0x2           | 0x2         | Field           | ECX                                   | 31  | 16  | 16         | Reserved                                 |  | Fixed                            | 0                      |  |  |
| 0xb               | 0x2           | 0x2         | Field           | EDX                                   | 31  | 0   | 32         | X2APIC ID                                |  | Calculated                       | 0                      |  |  |
| <b>0xb</b>        | <b>0x3</b>    | <b>0x1F</b> | <b>Sub-Leaf</b> | <b>Leaf 0xb / Sub-Leaves 0x3-0x1F</b> |     |     |            |  |  |                                  |                        |  |  |
| 0xb               | 0x3           | 0x1F        | Field           | EAX                                   | 4   | 0   | 5          | Shift Count                              |  | #VE                              |                        |  |  |
| 0xb               | 0x3           | 0x1F        | Field           | EAX                                   | 31  | 5   | 27         | Reserved                                 |  | #VE                              |                        |  |  |
| 0xb               | 0x3           | 0x1F        | Field           | EBX                                   | 15  | 0   | 16         | Logical Processors at this Level         |  | #VE                              |                        |  |  |
| 0xb               | 0x3           | 0x1F        | Field           | EBX                                   | 31  | 16  | 16         | Reserved                                 |  | #VE                              |                        |  |  |
| 0xb               | 0x3           | 0x1F        | Field           | ECX                                   | 7   | 0   | 8          | Level Number                             |  | #VE                              |                        |  |  |
| 0xb               | 0x3           | 0x1F        | Field           | ECX                                   | 15  | 8   | 8          | Level Type                               |  | #VE                              |                        |  |  |
| 0xb               | 0x3           | 0x1F        | Field           | ECX                                   | 31  | 16  | 16         | Reserved                                 |  | #VE                              |                        |  |  |
| 0xb               | 0x3           | 0x1F        | Field           | EDX                                   | 31  | 0   | 32         | X2APIC ID                                |  | #VE                              |                        |  |  |
| <b>0xc</b>        | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     | <b>Leaf 0xc</b>                       |     |     |            |  |  |                                  |                        |  |  |
| 0xc               | N/A           | N/A         | Field           | EAX                                   | 31  | 0   | 32         | Reserved                                 |  | Fixed                            | 0x0                    |  |  |
| 0xc               | N/A           | N/A         | Field           | EBX                                   | 31  | 0   | 32         | Reserved                                 |  | Fixed                            | 0x0                    |  |  |
| 0xc               | N/A           | N/A         | Field           | ECX                                   | 31  | 0   | 32         | Reserved                                 |  | Fixed                            | 0x0                    |  |  |
| 0xc               | N/A           | N/A         | Field           | EDX                                   | 31  | 0   | 32         | Reserved                                 |  | Fixed                            | 0x0                    |  |  |
| <b>0xd</b>        | <b>0x0</b>    | <b>0x0</b>  | <b>Sub-Leaf</b> | <b>Leaf 0xd / Sub-Leaf 0x0</b>        |     |     |            |  |  |                                  |                        |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 0   | 0   | 1          | X87                                      |  | Fixed                            | 0x1                    |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 1   | 1   | 1          | SSE                                      |  | Fixed                            | 0x1                    |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 2   | 2   | 1          | AVX256                                   | TD_PARAMS.XFAM                         | XFAM & Native                    | XFAM[2]                |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 3   | 3   | 1          | PL_BNDREGS                               |  | Fixed                            | 0x0                    |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 4   | 4   | 1          | PL_BNDCFS                                |  | Fixed                            | 0x0                    |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 5   | 5   | 1          | KMASK                                    | TD_PARAMS.XFAM                         | XFAM & Native                    | XFAM[7:5]              |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 6   | 6   | 1          | AVX3 ZMM 15:0                            | TD_PARAMS.XFAM                         | XFAM & Native                    | XFAM[7:5]              |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 7   | 7   | 1          | AVX3 ZMM 31:18                           | TD_PARAMS.XFAM                         | XFAM & Native                    | XFAM[7:5]              |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 8   | 8   | 1          | Reserved                                 |  | Fixed                            | 0x0                    |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 9   | 9   | 1          | PKRU                                     | TD_PARAMS.XFAM                         | XFAM & Native                    | XFAM[9]                |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 16  | 10  | 7          | Reserved                                 |  | Fixed                            | 0x0                    |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 17  | 17  | 1          | AMX - XTILECFG                           | TD_PARAMS.XFAM                         | XFAM & Native                    | XFAM[18:17]            |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 18  | 18  | 1          | AMX - XTILEDATA                          | TD_PARAMS.XFAM                         | XFAM & Native                    | XFAM[18:17]            |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 19  | 19  | 1          | APX                                      |  | XFAM & Native                    | XFAM[19]               |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EAX                                   | 31  | 20  | 12         | Reserved                                 |  | Fixed                            | 0x0                    |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EBX                                   | 31  | 0   | 32         | Max Bytes for Enabled Features           |  | Calculated                       | Native                 |  |  |
| 0xd               | 0x0           | 0x0         | Field           | ECX                                   | 31  | 0   | 32         | Max Bytes for Supported Features         | TD_PARAMS.XFAM (only for bits in XCRO) | XFAM                             |                        |  |  |
| 0xd               | 0x0           | 0x0         | Field           | EDX                                   | 31  | 0   | 32         | Reserved                                 |  | Fixed                            | 0x0                    |  |  |
| <b>0xd</b>        | <b>0x1</b>    | <b>0x1</b>  | <b>Sub-Leaf</b> | <b>Leaf 0xd / Sub-Leaf 0x1</b>        |     |     |            |  |  |                                  |                        |  |  |
| 0xd               | 0x1           | 0x1         | Field           | EAX                                   | 0   | 0   | 1          | Supports XSAVEOPT                        |  | Fixed                            | 0x1                    |  |  |

| Leaf and Sub-Leaf |               |             | CPUID Field     |                                       |     |     |            | Virtualization                          |                       |                                  |                        |
|-------------------|---------------|-------------|-----------------|---------------------------------------|-----|-----|------------|---|-----------------------|----------------------------------|------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg.                                  | MSB | LSB | Field Size | Field Name                              | Configuration Details | Bit or Field Virtualization Type | Virtualization Details |
| 0xd               | 0x1           | 0x1         | Field           | EAX                                   | 1   | 1   | 1          | Supports XSAVEC and compacted XRSTOR    |                       | Fixed                            | 0x1                    |
| 0xd               | 0x1           | 0x1         | Field           | EAX                                   | 2   | 2   | 1          | Supports XGETBV with ECX = 1            |                       | Fixed                            | 0x1                    |
| 0xd               | 0x1           | 0x1         | Field           | EAX                                   | 3   | 3   | 1          | Supports XSAVEC/XRSTORS and IA32_XSS    |                       | Fixed                            | 0x1                    |
| 0xd               | 0x1           | 0x1         | Field           | EAX                                   | 4   | 4   | 1          | XFD support                             | TD_PARAMS.XFAM        | XFAM                             |                        |
| 0xd               | 0x1           | 0x1         | Field           | EAX                                   | 31  | 5   | 27         | Reserved                                |                       | Fixed                            | 0x0                    |
| 0xd               | 0x1           | 0x1         | Field           | EBX                                   | 31  | 0   | 32         | Max Bytes for Enabled Features          |                       | Calculated                       | Native                 |
| 0xd               | 0x1           | 0x1         | Field           | ECX                                   | 7   | 0   | 8          | Reserved                                |                       | Fixed                            | 0x0                    |
| 0xd               | 0x1           | 0x1         | Field           | ECX                                   | 8   | 8   | 1          | XSS_RTIT                                | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[8]                |
| 0xd               | 0x1           | 0x1         | Field           | ECX                                   | 9   | 9   | 1          | Reserved                                |                       | Fixed                            | 0x0                    |
| 0xd               | 0x1           | 0x1         | Field           | ECX                                   | 10  | 10  | 1          | PASID                                   |                       | Fixed                            | 0x0                    |
| 0xd               | 0x1           | 0x1         | Field           | ECX                                   | 11  | 11  | 1          | U_CET                                   | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[12:11]            |
| 0xd               | 0x1           | 0x1         | Field           | ECX                                   | 12  | 12  | 1          | S_CET                                   | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[12:11]            |
| 0xd               | 0x1           | 0x1         | Field           | ECX                                   | 13  | 13  | 1          | HDC                                     |                       | Fixed                            | 0x0                    |
| 0xd               | 0x1           | 0x1         | Field           | ECX                                   | 14  | 14  | 1          | ULI/UNIT                                | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[14]               |
| 0xd               | 0x1           | 0x1         | Field           | ECX                                   | 15  | 15  | 1          | XSS_ARCH_LBRS                           | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[15]               |
| 0xd               | 0x1           | 0x1         | Field           | ECX                                   | 16  | 16  | 1          | HWP Request                             |                       | Fixed                            | 0x0                    |
| 0xd               | 0x1           | 0x1         | Field           | ECX                                   | 31  | 17  | 15         | Reserved                                |                       | Fixed                            | 0x0                    |
| 0xd               | 0x1           | 0x1         | Field           | EDX                                   | 31  | 0   | 32         | Reserved                                |                       | Fixed                            | 0x0                    |
| <b>0xd</b>        | <b>0x2</b>    | <b>0x12</b> | <b>Sub-Leaf</b> | <b>Leaf 0xd / Sub-Leaves 0x2-0x12</b> |     |     |            |   |                       |                                  |                        |
| 0xd               | 0x2           | 0x12        | Field           | EAX                                   | 31  | 0   | 32         | COMP_SIZE                               | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[n]                |
| 0xd               | 0x2           | 0x12        | Field           | EBX                                   | 31  | 0   | 32         | COMP_OFFSET                             | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[n]                |
| 0xd               | 0x2           | 0x12        | Field           | ECX                                   | 0   | 0   | 1          | COMP_SUP                                | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[n]                |
| 0xd               | 0x2           | 0x12        | Field           | ECX                                   | 1   | 1   | 1          | COMP_64B_ALIGNED                        | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[n]                |
| 0xd               | 0x2           | 0x12        | Field           | ECX                                   | 2   | 2   | 1          | COMP_XFD                                | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[n]                |
| 0xd               | 0x2           | 0x12        | Field           | ECX                                   | 31  | 3   | 29         | Reserved                                | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[n]                |
| 0xd               | 0x2           | 0x12        | Field           | EDX                                   | 31  | 0   | 32         | Reserved                                |                       | Fixed                            | 0x0                    |
| <b>0xd</b>        | <b>0x13</b>   | <b>0x13</b> | <b>Sub-Leaf</b> | <b>Leaf 0xd / Sub-Leaf 0x13</b>       |     |     |            |   |                       |                                  |                        |
| 0xd               | 0x13          | 0x13        | Field           | EAX                                   | 31  | 0   | 32         | COMP_SIZE                               | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[19]               |
| 0xd               | 0x13          | 0x13        | Field           | EBX                                   | 31  | 0   | 32         | COMP_OFFSET                             | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[19]               |
| 0xd               | 0x13          | 0x13        | Field           | ECX                                   | 0   | 0   | 1          | COMP_SUP                                | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[19]               |
| 0xd               | 0x13          | 0x13        | Field           | ECX                                   | 1   | 1   | 1          | COMP_64B_ALIGNED                        | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[19]               |
| 0xd               | 0x13          | 0x13        | Field           | ECX                                   | 2   | 2   | 1          | COMP_XFD                                | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[19]               |
| 0xd               | 0x13          | 0x13        | Field           | ECX                                   | 31  | 3   | 29         | Reserved                                | TD_PARAMS.XFAM        | XFAM & Native                    | XFAM[19]               |
| 0xd               | 0x13          | 0x13        | Field           | EDX                                   | 31  | 0   | 32         | Reserved                                |                       | Fixed                            | 0x0                    |
| <b>0xe</b>        | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     | <b>Leaf 0xe</b>                       |     |     |            |   |                       |                                  |                        |
| 0xe               | N/A           | N/A         | Field           | EAX                                   | 31  | 0   | 32         | Reserved                                |                       | Fixed                            | 0x0                    |
| 0xe               | N/A           | N/A         | Field           | EBX                                   | 31  | 0   | 32         | Reserved                                |                       | Fixed                            | 0x0                    |
| 0xe               | N/A           | N/A         | Field           | ECX                                   | 31  | 0   | 32         | Reserved                                |                       | Fixed                            | 0x0                    |
| 0xe               | N/A           | N/A         | Field           | EDX                                   | 31  | 0   | 32         | Reserved                                |                       | Fixed                            | 0x0                    |
| <b>0xf</b>        | <b>0x0</b>    | <b>0x0</b>  | <b>Sub-Leaf</b> | <b>Leaf 0xf / Sub-Leaf 0x0</b>        |     |     |            |   |                       |                                  |                        |
| 0xf               | 0x0           | 0x0         | Field           | EAX                                   | 31  | 0   | 32         | Reserved                                |                       | Fixed                            | 0x0                    |
| 0xf               | 0x0           | 0x0         | Field           | EBX                                   | 31  | 0   | 32         | Max RMID                                |                       | Fixed                            | 0x0                    |
| 0xf               | 0x0           | 0x0         | Field           | ECX                                   | 31  | 0   | 32         | Reserved                                |                       | Fixed                            | 0x0                    |
| 0xf               | 0x0           | 0x0         | Field           | EDX                                   | 0   | 0   | 1          | Supports L3 Cache Intel RDT Monitoring  |                       | Fixed                            | 0x0                    |
| 0xf               | 0x0           | 0x0         | Field           | EDX                                   | 1   | 1   | 1          |   |                       | Fixed                            | 0x0                    |
| 0xf               | 0x0           | 0x0         | Field           | EDX                                   | 2   | 2   | 1          |   |                       | Fixed                            | 0x0                    |
| 0xf               | 0x0           | 0x0         | Field           | EDX                                   | 31  | 3   | 29         | Reserved                                |                       | Fixed                            | 0x0                    |
| <b>0xf</b>        | <b>0x1</b>    | <b>0x1</b>  | <b>Sub-Leaf</b> | <b>Leaf 0xf / Sub-Leaf 0x1</b>        |     |     |            |   |                       |                                  |                        |
| 0xf               | 0x1           | 0x1         | Field           | EAX                                   | 31  | 0   | 32         | Counter Length (as offset from 24b)     |                       | Fixed                            | 0x0                    |
| 0xf               | 0x1           | 0x1         | Field           | EBX                                   | 31  | 0   | 32         | QM Counter Conversion Factor            |                       | Fixed                            | 0x0                    |
| 0xf               | 0x1           | 0x1         | Field           | ECX                                   | 31  | 0   | 32         | Max RMID                                |                       | Fixed                            | 0x0                    |
| 0xf               | 0x1           | 0x1         | Field           | EDX                                   | 0   | 0   | 1          | Supports L3 Monitoring                  |                       | Fixed                            | 0x0                    |
| 0xf               | 0x1           | 0x1         | Field           | EDX                                   | 1   | 1   | 1          |   |                       | Fixed                            | 0x0                    |
| 0xf               | 0x1           | 0x1         | Field           | EDX                                   | 2   | 2   | 1          |   |                       | Fixed                            | 0x0                    |
| 0xf               | 0x1           | 0x1         | Field           | EDX                                   | 31  | 3   | 29         | Reserved                                |                       | Fixed                            | 0x0                    |
| <b>0x10</b>       | <b>0x0</b>    | <b>0x0</b>  | <b>Leaf</b>     | <b>Leaf 0x10</b>                      |     |     |            |   |                       |                                  |                        |
| 0x10              | 0x0           | 0x0         | Field           | EAX                                   | 31  | 0   | 32         | Reserved                                |                       | Fixed                            | 0x0                    |
| 0x10              | 0x0           | 0x0         | Field           | EBX                                   | 0   | 0   | 1          | Reserved_0                              |                       | Fixed                            | 0x0                    |
| 0x10              | 0x0           | 0x0         | Field           | EBX                                   | 1   | 1   | 1          | Supports L3 Cache Allocation Technology |                       | Fixed                            | 0x0                    |
| 0x10              | 0x0           | 0x0         | Field           | EBX                                   | 2   | 2   | 1          | Supports L2 Cache Allocation Technology |                       | Fixed                            | 0x0                    |
| 0x10              | 0x0           | 0x0         | Field           | EBX                                   | 3   | 3   | 1          | Supports Memory Bandwidth Allocation    |                       | Fixed                            | 0x0                    |
| 0x10              | 0x0           | 0x0         | Field           | EBX                                   | 31  | 4   | 28         | Reserved_31_4                           |                       | Fixed                            | 0x0                    |
| 0x10              | 0x0           | 0x0         | Field           | ECX                                   | 31  | 0   | 32         | Reserved                                |                       | Fixed                            | 0x0                    |
| 0x10              | 0x0           | 0x0         | Field           | EDX                                   | 31  | 0   | 32         | Reserved                                |                       | Fixed                            | 0x0                    |
| <b>0x10</b>       | <b>0x1</b>    | <b>0x1</b>  | <b>Leaf</b>     | <b>Leaf 0x10</b>                      |     |     |            |   |                       |                                  |                        |
| 0x10              | 0x1           | 0x1         | Field           | EAX                                   | 11  | 0   | 12         | Length of Mask                          |                       | Fixed                            | 0x0                    |
| 0x10              | 0x1           | 0x1         | Field           | EAX                                   | 31  | 12  | 20         |   |                       | Fixed                            | 0x0                    |
| 0x10              | 0x1           | 0x1         | Field           | EBX                                   | 31  | 0   | 32         | Bits In USE                             |                       | Fixed                            | 0x0                    |
| 0x10              | 0x1           | 0x1         | Field           | ECX                                   | 0   | 0   | 1          | Reserved_1_0                            |                       | Fixed                            | 0x0                    |
| 0x10              | 0x1           | 0x1         | Field           | ECX                                   | 1   | 1   | 1          |   |                       | Fixed                            | 0x0                    |
| 0x10              | 0x1           | 0x1         | Field           | ECX                                   | 2   | 2   | 1          | CDP                                     |                       | Fixed                            | 0x0                    |
| 0x10              | 0x1           | 0x1         | Field           | ECX                                   | 31  | 3   | 29         | Reserved_31_3                           |                       | Fixed                            | 0x0                    |
| 0x10              | 0x1           | 0x1         | Field           | EDX                                   | 15  | 0   | 16         | COS                                     |                       | Fixed                            | 0x0                    |
| 0x10              | 0x1           | 0x1         | Field           | EDX                                   | 31  | 16  | 16         | Reserved                                |                       | Fixed                            | 0x0                    |
| <b>0x10</b>       | <b>0x2</b>    | <b>0x2</b>  | <b>Leaf</b>     | <b>Leaf 0x10</b>                      |     |     |            |   |                       |                                  |                        |
| 0x10              | 0x2           | 0x2         | Field           | EAX                                   | 11  | 0   | 12         | Length of Mask                          |                       | Fixed                            | 0x0                    |

| Leaf and Sub-Leaf |               |             |                 | CPUID Field |     |     |            |   | Configuration Details   | Virtualization                   |                        |
|-------------------|---------------|-------------|-----------------|-------------|-----|-----|------------|---|-------------------------|----------------------------------|------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg.        | MSB | LSB | Field Size | Field Name  |                         | Bit or Field Virtualization Type | Virtualization Details |
| 0x10              | 0x2           | 0x2         | Field           | EAX         | 31  | 12  | 20         |   |                         | Fixed                            | 0x0                    |
| 0x10              | 0x2           | 0x2         | Field           | EBX         | 31  | 0   | 32         | Bits In USE   |                         | Fixed                            | 0x0                    |
| 0x10              | 0x2           | 0x2         | Field           | ECX         | 0   | 0   | 1          | Reserved_1_0  |                         | Fixed                            | 0x0                    |
| 0x10              | 0x2           | 0x2         | Field           | ECX         | 1   | 1   | 1          |   |                         | Fixed                            | 0x0                    |
| 0x10              | 0x2           | 0x2         | Field           | ECX         | 2   | 2   | 1          | CDP   |                         | Fixed                            | 0x0                    |
| 0x10              | 0x2           | 0x2         | Field           | ECX         | 31  | 3   | 29         | Reserved_31_3                                       |                         | Fixed                            | 0x0                    |
| 0x10              | 0x2           | 0x2         | Field           | EDX         | 15  | 0   | 16         | COS   |                         | Fixed                            | 0x0                    |
| 0x10              | 0x2           | 0x2         | Field           | EDX         | 31  | 16  | 16         | Reserved  |                         | Fixed                            | 0x0                    |
| <b>0x10</b>       | <b>0x3</b>    | <b>0x3</b>  | <b>Leaf</b>     |             |     |     |            | <b>Leaf 0x10</b>                                    |                         |                                  |                        |
| 0x10              | 0x3           | 0x3         | Field           | EAX         | 11  | 0   | 12         | RBE Max Value                                       |                         | Fixed                            | 0x0                    |
| 0x10              | 0x3           | 0x3         | Field           | EAX         | 31  | 12  | 20         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x10              | 0x3           | 0x3         | Field           | EBX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x10              | 0x3           | 0x3         | Field           | ECX         | 0   | 0   | 1          | Per-thread MBA controls are supported               |                         | Fixed                            | 0x0                    |
| 0x10              | 0x3           | 0x3         | Field           | ECX         | 1   | 1   | 1          |   |                         | Fixed                            | 0x0                    |
| 0x10              | 0x3           | 0x3         | Field           | ECX         | 2   | 2   | 1          | Throttling value is linear                          |                         | Fixed                            | 0x0                    |
| 0x10              | 0x3           | 0x3         | Field           | ECX         | 31  | 3   | 29         | Reserved_31_3                                       |                         | Fixed                            | 0x0                    |
| 0x10              | 0x3           | 0x3         | Field           | EDX         | 15  | 0   | 16         | COS   |                         | Fixed                            | 0x0                    |
| 0x10              | 0x3           | 0x3         | Field           | EDX         | 31  | 16  | 16         | Reserved  |                         | Fixed                            | 0x0                    |
| <b>0x11</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Sub-Leaf</b> |             |     |     |            | <b>Leaf 0x11 / Sub-Leaf N/A</b>                     |                         |                                  |                        |
| 0x11              | N/A           | N/A         | Field           | EAX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x11              | N/A           | N/A         | Field           | EBX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x11              | N/A           | N/A         | Field           | ECX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x11              | N/A           | N/A         | Field           | EDX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| <b>0x12</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |             |     |     |            | <b>Leaf 0x12</b>                                    |                         |                                  |                        |
| 0x12              | N/A           | N/A         | Field           | EAX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x12              | N/A           | N/A         | Field           | EBX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x12              | N/A           | N/A         | Field           | ECX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x12              | N/A           | N/A         | Field           | EDX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| <b>0x13</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |             |     |     |            | <b>Leaf 0x13</b>                                    |                         |                                  |                        |
| 0x13              | N/A           | N/A         | Field           | EAX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x13              | N/A           | N/A         | Field           | EBX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x13              | N/A           | N/A         | Field           | ECX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x13              | N/A           | N/A         | Field           | EDX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| <b>0x14</b>       | <b>0x0</b>    | <b>0x0</b>  | <b>Sub-Leaf</b> |             |     |     |            | <b>Leaf 0x14 / Sub-Leaf 0x0</b>                     |                         |                                  |                        |
| 0x14              | 0x0           | 0x0         | Field           | EAX         | 31  | 0   | 32         | Max Valid Subleaf                                   | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | EBX         | 0   | 0   | 1          | CR3 Filtering                                       | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | EBX         | 1   | 1   | 1          | Cycle Accurate Mode                                 | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | EBX         | 2   | 2   | 1          | IP Filtering  | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | EBX         | 3   | 3   | 1          | MSRs Preserved Across Warm Reset                    | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | EBX         | 4   | 4   | 1          | PTWRITE Support                                     | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | EBX         | 5   | 5   | 1          | Power Event Trace Support                           | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | EBX         | 6   | 6   | 1          | PSB/PMI Injection Support                           | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | EBX         | 7   | 7   | 1          | PT Event Trace Support                              | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | EBX         | 8   | 8   | 1          | PT TNT packet generation disabling support          | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | EBX         | 31  | 9   | 23         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x14              | 0x0           | 0x0         | Field           | ECX         | 0   | 0   | 1          | ToPA Output Supported                               | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | ECX         | 1   | 1   | 1          | ToPA Tables Support Multiple Regions                | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | ECX         | 2   | 2   | 1          | Single-Range Output Supported                       | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | ECX         | 3   | 3   | 1          | Trace Transport subsystem output supported          | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x0           | 0x0         | Field           | ECX         | 30  | 4   | 27         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x14              | 0x0           | 0x0         | Field           | ECX         | 31  | 31  | 1          | IP Payload Contains LIP                             | TD_PARAMS.XFAM          | XFAM & Native (Hybrid)           |                        |
| 0x14              | 0x0           | 0x0         | Field           | EDX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| <b>0x14</b>       | <b>0x1</b>    | <b>0x1</b>  | <b>Sub-Leaf</b> |             |     |     |            | <b>Leaf 0x14 / Sub-Leaf 0x1</b>                     |                         |                                  |                        |
| 0x14              | 0x1           | 0x1         | Field           | EAX         | 2   | 0   | 3          | Number of configurable Address Ranges for filtering | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x1           | 0x1         | Field           | EAX         | 15  | 3   | 13         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x14              | 0x1           | 0x1         | Field           | EAX         | 31  | 16  | 16         | Number of Address Ranges Supported                  | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x1           | 0x1         | Field           | EBX         | 15  | 0   | 16         | Cycle Thresholds                                    | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x1           | 0x1         | Field           | EBX         | 31  | 16  | 16         | PSB Frequencies                                     | TD_PARAMS.XFAM          | XFAM & Native                    | XFAM[8]                |
| 0x14              | 0x1           | 0x1         | Field           | ECX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x14              | 0x1           | 0x1         | Field           | EDX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| <b>0x15</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |             |     |     |            | <b>Leaf 0x15</b>                                    |                         |                                  |                        |
| 0x15              | N/A           | N/A         | Field           | EAX         | 31  | 0   | 32         | Denominator   |                         | Fixed                            | 0x1                    |
| 0x15              | N/A           | N/A         | Field           | EBX         | 31  | 0   | 32         | Numerator   | TD_PARAMS.TSC_FREQUENCY | Configured                       |                        |
| 0x15              | N/A           | N/A         | Field           | ECX         | 31  | 0   | 32         | Nominal ART Frequency                               |                         | Fixed                            | 0x017D7840             |
| 0x15              | N/A           | N/A         | Field           | EDX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |
| <b>0x16</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |             |     |     |            | <b>Leaf 0x16</b>                                    |                         |                                  |                        |
| 0x16              | N/A           | N/A         | Field           | EAX         | 15  | 0   | 16         | Processor Base Frequency                            |                         | Fixed                            | 0x0                    |
| 0x16              | N/A           | N/A         | Field           | EAX         | 31  | 16  | 16         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x16              | N/A           | N/A         | Field           | EBX         | 15  | 0   | 16         | Maximum Frequency                                   |                         | Fixed                            | 0x0                    |
| 0x16              | N/A           | N/A         | Field           | EBX         | 31  | 16  | 16         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x16              | N/A           | N/A         | Field           | ECX         | 15  | 0   | 16         | Bus (Reference) Frequency                           |                         | Fixed                            | 0x0                    |
| 0x16              | N/A           | N/A         | Field           | ECX         | 31  | 16  | 16         | Reserved  |                         | Fixed                            | 0x0                    |
| 0x16              | N/A           | N/A         | Field           | EDX         | 31  | 0   | 32         | Reserved  |                         | Fixed                            | 0x0                    |

| Leaf and Sub-Leaf |               |             | CPUID Field     |      |     |     |            | Configuration Details                    | Virtualization   |                                  |
|-------------------|---------------|-------------|-----------------|------|-----|-----|------------|--|------------------|----------------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg. | MSB | LSB | Field Size |  | Field Name       | Bit or Field Virtualization Type |
| <b>0x17</b>       | <b>0x0</b>    | <b>0x0</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x17 / Sub-Leaf 0x0</b>          |                  |                                  |
| 0x17              | 0x0           | 0x0         | Field           | EAX  | 31  | 0   | 32         | Maximum Subleaf                          | Fixed            | 0x0                              |
| 0x17              | 0x0           | 0x0         | Field           | EBX  | 15  | 0   | 16         | SoC Vendor ID                            | Fixed            | 0x0                              |
| 0x17              | 0x0           | 0x0         | Field           | EBX  | 16  | 16  | 1          | IsVendorScheme                           | Fixed            | 0x0                              |
| 0x17              | 0x0           | 0x0         | Field           | EBX  | 31  | 17  | 15         | Reserved_31_17                           | Fixed            | 0x0                              |
| 0x17              | 0x0           | 0x0         | Field           | ECX  | 31  | 0   | 32         | Project ID                               | Fixed            | 0x0                              |
| 0x17              | 0x0           | 0x0         | Field           | EDX  | 31  | 0   | 32         | Stepping ID                              | Fixed            | 0x0                              |
| <b>0x17</b>       | <b>0x1</b>    | <b>0x1</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x17 / Sub-Leaf 0x1</b>          |                  |                                  |
| 0x17              | 0x1           | 0x1         | Field           | EAX  | 31  | 0   | 32         |  | Fixed            | 0x0                              |
| 0x17              | 0x1           | 0x1         | Field           | EBX  | 31  | 0   | 32         |  | Fixed            | 0x0                              |
| 0x17              | 0x1           | 0x1         | Field           | ECX  | 31  | 0   | 32         |  | Fixed            | 0x0                              |
| 0x17              | 0x1           | 0x1         | Field           | EDX  | 31  | 0   | 32         |  | Fixed            | 0x0                              |
| <b>0x17</b>       | <b>0x2</b>    | <b>0x2</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x17 / Sub-Leaf 0x2</b>          |                  |                                  |
| 0x17              | 0x2           | 0x2         | Field           | EAX  | 31  | 0   | 32         |  | Fixed            | 0x0                              |
| 0x17              | 0x2           | 0x2         | Field           | EBX  | 31  | 0   | 32         |  | Fixed            | 0x0                              |
| 0x17              | 0x2           | 0x2         | Field           | ECX  | 31  | 0   | 32         |  | Fixed            | 0x0                              |
| 0x17              | 0x2           | 0x2         | Field           | EDX  | 31  | 0   | 32         |  | Fixed            | 0x0                              |
| <b>0x17</b>       | <b>0x3</b>    | <b>0x3</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x17 / Sub-Leaf 0x3</b>          |                  |                                  |
| 0x17              | 0x3           | 0x3         | Field           | EAX  | 31  | 0   | 32         |  | Fixed            | 0x0                              |
| 0x17              | 0x3           | 0x3         | Field           | EBX  | 31  | 0   | 32         |  | Fixed            | 0x0                              |
| 0x17              | 0x3           | 0x3         | Field           | ECX  | 31  | 0   | 32         |  | Fixed            | 0x0                              |
| 0x17              | 0x3           | 0x3         | Field           | EDX  | 31  | 0   | 32         |  | Fixed            | 0x0                              |
| <b>0x18</b>       | <b>0x0</b>    | <b>0x0</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x18 / Sub-Leaf 0x0</b>          |                  |                                  |
| 0x18              | 0x0           | 0x0         | Field           | EAX  | 31  | 0   | 32         | MaxNumSubLeaves                          | Native @ TD Init |                                  |
| 0x18              | 0x0           | 0x0         | Field           | EBX  | 31  | 0   | 32         | Not detailed here                        | Native @ TD Init |                                  |
| 0x18              | 0x0           | 0x0         | Field           | ECX  | 31  | 0   | 32         | Number of sets                           | Native @ TD Init |                                  |
| 0x18              | 0x0           | 0x0         | Field           | EDX  | 4   | 0   | 5          | Translation Cache Type                   | Native @ TD Init |                                  |
| 0x18              | 0x0           | 0x0         | Field           | EDX  | 7   | 5   | 3          | Translation Cache Level                  | Native @ TD Init |                                  |
| 0x18              | 0x0           | 0x0         | Field           | EDX  | 8   | 8   | 1          | Fully associative structure              | Native @ TD Init |                                  |
| 0x18              | 0x0           | 0x0         | Field           | EDX  | 13  | 9   | 5          | Reserved                                 | Native @ TD Init |                                  |
| 0x18              | 0x0           | 0x0         | Field           | EDX  | 25  | 14  | 12         | Max threads sharing this cache           | Configured       |                                  |
| 0x18              | 0x0           | 0x0         | Field           | EDX  | 31  | 26  | 6          | Reserved                                 | Native @ TD Init |                                  |
| <b>0x18</b>       | <b>0x1</b>    | <b>0x1</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x18 / Sub-Leaf 0x1</b>          |                  |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EAX  | 31  | 0   | 32         | Reserved                                 | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EBX  | 0   | 0   | 1          | 4KB pages                                | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EBX  | 1   | 1   | 1          | 2MB pages                                | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EBX  | 2   | 2   | 1          | 4MB pages                                | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EBX  | 3   | 3   | 1          | 1GB pages                                | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EBX  | 7   | 4   | 4          | Reserved_7_4                             | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EBX  | 10  | 8   | 3          | Partitioning                             | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EBX  | 15  | 11  | 5          | Reserved_15_11                           | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EBX  | 31  | 16  | 16         | Ways of associativity                    | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | ECX  | 31  | 0   | 32         | Number of sets                           | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EDX  | 4   | 0   | 5          | Translation Cache Type                   | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EDX  | 7   | 5   | 3          | Translation Cache Level                  | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EDX  | 8   | 8   | 1          | Fully associative structure              | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EDX  | 13  | 9   | 5          | Reserved                                 | Native @ TD Init |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EDX  | 25  | 14  | 12         | Max threads sharing this cache           | Configured       |                                  |
| 0x18              | 0x1           | 0x1         | Field           | EDX  | 31  | 26  | 6          | Number of linear-address spaces for PCID | Native @ TD Init |                                  |
| <b>0x18</b>       | <b>0x2</b>    | <b>0x2</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x18 / Sub-Leaf 0x2</b>          |                  |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EAX  | 31  | 0   | 32         | Reserved                                 | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EBX  | 0   | 0   | 1          | 4KB pages                                | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EBX  | 1   | 1   | 1          | 2MB pages                                | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EBX  | 2   | 2   | 1          | 4MB pages                                | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EBX  | 3   | 3   | 1          | 1GB pages                                | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EBX  | 7   | 4   | 4          | Reserved_7_4                             | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EBX  | 10  | 8   | 3          | Partitioning                             | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EBX  | 15  | 11  | 5          | Reserved_15_11                           | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EBX  | 31  | 16  | 16         | Ways of associativity                    | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | ECX  | 31  | 0   | 32         | Number of sets                           | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EDX  | 4   | 0   | 5          | Translation Cache Type                   | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EDX  | 7   | 5   | 3          | Translation Cache Level                  | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EDX  | 8   | 8   | 1          | Fully associative structure              | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EDX  | 13  | 9   | 5          | Reserved                                 | Native @ TD Init |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EDX  | 25  | 14  | 12         | Max threads sharing this cache           | Configured       |                                  |
| 0x18              | 0x2           | 0x2         | Field           | EDX  | 31  | 26  | 6          | Number of linear-address spaces for PCID | Native @ TD Init |                                  |
| <b>0x18</b>       | <b>0x3</b>    | <b>0x3</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x18 / Sub-Leaf 0x3</b>          |                  |                                  |
| 0x18              | 0x3           | 0x3         | Field           | EAX  | 31  | 0   | 32         | Reserved                                 | Native @ TD Init |                                  |
| 0x18              | 0x3           | 0x3         | Field           | EBX  | 0   | 0   | 1          | 4KB pages                                | Native @ TD Init |                                  |
| 0x18              | 0x3           | 0x3         | Field           | EBX  | 1   | 1   | 1          | 2MB pages                                | Native @ TD Init |                                  |
| 0x18              | 0x3           | 0x3         | Field           | EBX  | 2   | 2   | 1          | 4MB pages                                | Native @ TD Init |                                  |
| 0x18              | 0x3           | 0x3         | Field           | EBX  | 3   | 3   | 1          | 1GB pages                                | Native @ TD Init |                                  |
| 0x18              | 0x3           | 0x3         | Field           | EBX  | 7   | 4   | 4          | Reserved_7_4                             | Native @ TD Init |                                  |
| 0x18              | 0x3           | 0x3         | Field           | EBX  | 10  | 8   | 3          | Partitioning                             | Native @ TD Init |                                  |
| 0x18              | 0x3           | 0x3         | Field           | EBX  | 15  | 11  | 5          | Reserved_15_11                           | Native @ TD Init |                                  |
| 0x18              | 0x3           | 0x3         | Field           | EBX  | 31  | 16  | 16         | Ways of associativity                    | Native @ TD Init |                                  |

| Leaf and Sub-Leaf |               |             | CPUID Field     |      |     |     |            |  | Virtualization        |                                  |                        |
|-------------------|---------------|-------------|-----------------|------|-----|-----|------------|--|-----------------------|----------------------------------|------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg. | MSB | LSB | Field Size | Field Name                               | Configuration Details | Bit or Field Virtualization Type | Virtualization Details |
| 0x18              | 0x3           | 0x3         | Field           | ECX  | 31  | 0   | 32         | Number of sets                           |                       | Native @ TD Init                 |                        |
| 0x18              | 0x3           | 0x3         | Field           | EDX  | 4   | 0   | 5          | Translation Cache Type                   |                       | Native @ TD Init                 |                        |
| 0x18              | 0x3           | 0x3         | Field           | EDX  | 7   | 5   | 3          | Translation Cache Level                  |                       | Native @ TD Init                 |                        |
| 0x18              | 0x3           | 0x3         | Field           | EDX  | 8   | 8   | 1          | Fully associative structure              |                       | Native @ TD Init                 |                        |
| 0x18              | 0x3           | 0x3         | Field           | EDX  | 13  | 9   | 5          | Reserved                                 |                       | Native @ TD Init                 |                        |
| 0x18              | 0x3           | 0x3         | Field           | EDX  | 25  | 14  | 12         | Max threads sharing this cache           |                       | Configured                       |                        |
| 0x18              | 0x3           | 0x3         | Field           | EDX  | 31  | 26  | 6          | Number of linear-address spaces for PCID |                       | Native @ TD Init                 |                        |
| <b>0x18</b>       | <b>0x4</b>    | <b>0x4</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x18 / Sub-Leaf 0x4</b>          |                       |                                  |                        |
| 0x18              | 0x4           | 0x4         | Field           | EAX  | 31  | 0   | 32         | Reserved                                 |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EBX  | 0   | 0   | 1          | 4KB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EBX  | 1   | 1   | 1          | 2MB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EBX  | 2   | 2   | 1          | 4MB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EBX  | 3   | 3   | 1          | 1GB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EBX  | 7   | 4   | 4          | Reserved_7_4                             |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EBX  | 10  | 8   | 3          | Partitioning                             |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EBX  | 15  | 11  | 5          | Reserved_15_11                           |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EBX  | 31  | 16  | 16         | Ways of associativity                    |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | ECX  | 31  | 0   | 32         | Number of sets                           |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EDX  | 4   | 0   | 5          | Translation Cache Type                   |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EDX  | 7   | 5   | 3          | Translation Cache Level                  |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EDX  | 8   | 8   | 1          | Fully associative structure              |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EDX  | 13  | 9   | 5          | Reserved                                 |                       | Native @ TD Init                 |                        |
| 0x18              | 0x4           | 0x4         | Field           | EDX  | 25  | 14  | 12         | Max threads sharing this cache           |                       | Configured                       |                        |
| 0x18              | 0x4           | 0x4         | Field           | EDX  | 31  | 26  | 6          | Number of linear-address spaces for PCID |                       | Native @ TD Init                 |                        |
| <b>0x18</b>       | <b>0x5</b>    | <b>0x5</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x18 / Sub-Leaf 0x5</b>          |                       |                                  |                        |
| 0x18              | 0x5           | 0x5         | Field           | EAX  | 31  | 0   | 32         | Reserved                                 |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EBX  | 0   | 0   | 1          | 4KB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EBX  | 1   | 1   | 1          | 2MB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EBX  | 2   | 2   | 1          | 4MB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EBX  | 3   | 3   | 1          | 1GB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EBX  | 7   | 4   | 4          | Reserved_7_4                             |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EBX  | 10  | 8   | 3          | Partitioning                             |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EBX  | 15  | 11  | 5          | Reserved_15_11                           |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EBX  | 31  | 16  | 16         | Ways of associativity                    |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | ECX  | 31  | 0   | 32         | Number of sets                           |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EDX  | 4   | 0   | 5          | Translation Cache Type                   |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EDX  | 7   | 5   | 3          | Translation Cache Level                  |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EDX  | 8   | 8   | 1          | Fully associative structure              |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EDX  | 13  | 9   | 5          | Reserved                                 |                       | Native @ TD Init                 |                        |
| 0x18              | 0x5           | 0x5         | Field           | EDX  | 25  | 14  | 12         | Max threads sharing this cache           |                       | Configured                       |                        |
| 0x18              | 0x5           | 0x5         | Field           | EDX  | 31  | 26  | 6          | Number of linear-address spaces for PCID |                       | Native @ TD Init                 |                        |
| <b>0x18</b>       | <b>0x6</b>    | <b>0x6</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x18 / Sub-Leaf 0x6</b>          |                       |                                  |                        |
| 0x18              | 0x6           | 0x6         | Field           | EAX  | 31  | 0   | 32         | Reserved                                 |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EBX  | 0   | 0   | 1          | 4KB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EBX  | 1   | 1   | 1          | 2MB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EBX  | 2   | 2   | 1          | 4MB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EBX  | 3   | 3   | 1          | 1GB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EBX  | 7   | 4   | 4          | Reserved_7_4                             |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EBX  | 10  | 8   | 3          | Partitioning                             |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EBX  | 15  | 11  | 5          | Reserved_15_11                           |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EBX  | 31  | 16  | 16         | Ways of associativity                    |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | ECX  | 31  | 0   | 32         | Number of sets                           |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EDX  | 4   | 0   | 5          | Translation Cache Type                   |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EDX  | 7   | 5   | 3          | Translation Cache Level                  |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EDX  | 8   | 8   | 1          | Fully associative structure              |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EDX  | 13  | 9   | 5          | Reserved                                 |                       | Native @ TD Init                 |                        |
| 0x18              | 0x6           | 0x6         | Field           | EDX  | 25  | 14  | 12         | Max threads sharing this cache           |                       | Configured                       |                        |
| 0x18              | 0x6           | 0x6         | Field           | EDX  | 31  | 26  | 6          | Number of linear-address spaces for PCID |                       | Native @ TD Init                 |                        |
| <b>0x18</b>       | <b>0x7</b>    | <b>0x7</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x18 / Sub-Leaf 0x7</b>          |                       |                                  |                        |
| 0x18              | 0x7           | 0x7         | Field           | EAX  | 31  | 0   | 32         | Reserved                                 |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EBX  | 0   | 0   | 1          | 4KB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EBX  | 1   | 1   | 1          | 2MB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EBX  | 2   | 2   | 1          | 4MB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EBX  | 3   | 3   | 1          | 1GB pages                                |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EBX  | 7   | 4   | 4          | Reserved_7_4                             |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EBX  | 10  | 8   | 3          | Partitioning                             |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EBX  | 15  | 11  | 5          | Reserved_15_11                           |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EBX  | 31  | 16  | 16         | Ways of associativity                    |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | ECX  | 31  | 0   | 32         | Number of sets                           |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EDX  | 4   | 0   | 5          | Translation Cache Type                   |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EDX  | 7   | 5   | 3          | Translation Cache Level                  |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EDX  | 8   | 8   | 1          | Fully associative structure              |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EDX  | 13  | 9   | 5          | Reserved                                 |                       | Native @ TD Init                 |                        |
| 0x18              | 0x7           | 0x7         | Field           | EDX  | 25  | 14  | 12         | Max threads sharing this cache           |                       | Configured                       |                        |
| 0x18              | 0x7           | 0x7         | Field           | EDX  | 31  | 26  | 6          | Number of linear-address spaces for PCID |                       | Native @ TD Init                 |                        |
| <b>0x18</b>       | <b>0x8</b>    | <b>0x8</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x18 / Sub-Leaf 0x8</b>          |                       |                                  |                        |

| Leaf and Sub-Leaf |               |             | CPUID Field     |      |     |     |            |   | Virtualization                            |                                  |                        |
|-------------------|---------------|-------------|-----------------|------|-----|-----|------------|---|---|----------------------------------|------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg. | MSB | LSB | Field Size | Field Name  | Configuration Details                     | Bit or Field Virtualization Type | Virtualization Details |
| 0x18              | 0x8           | 0x8         | Field           | EAX  | 31  | 0   | 32         | Reserved  |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EBX  | 0   | 0   | 1          | 4KB pages   |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EBX  | 1   | 1   | 1          | 2MB pages   |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EBX  | 2   | 2   | 1          | 4MB pages   |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EBX  | 3   | 3   | 1          | 1GB pages   |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EBX  | 7   | 4   | 4          | Reserved_7_4  |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EBX  | 10  | 8   | 3          | Partitioning  |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EBX  | 15  | 11  | 5          | Reserved_15_11  |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EBX  | 31  | 16  | 16         | Ways of associativity   |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | ECX  | 31  | 0   | 32         | Number of sets  |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EDX  | 4   | 0   | 5          | Translation Cache Type  |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EDX  | 7   | 5   | 3          | Translation Cache Leve  |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EDX  | 8   | 8   | 1          | Fully associative structure   |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EDX  | 13  | 9   | 5          | Reserved  |   | Native @ TD Init                 |                        |
| 0x18              | 0x8           | 0x8         | Field           | EDX  | 25  | 14  | 12         | Max threads sharing this cache  |   | Configured                       |                        |
| 0x18              | 0x8           | 0x8         | Field           | EDX  | 31  | 26  | 6          | Number of linear-address spaces for PCID                                |   | Native @ TD Init                 |                        |
| <b>0x19</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |      |     |     |            | <b>Leaf 0x19</b>  |   |                                  |                        |
| 0x19              | N/A           | N/A         | Field           | EAX  | 0   | 0   | 1          | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | EAX  | 1   | 1   | 1          | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | EAX  | 2   | 2   | 1          | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | EAX  | 3   | 3   | 1          | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | EAX  | 31  | 4   | 28         | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | EBX  | 0   | 0   | 1          | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | EBX  | 1   | 1   | 1          | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | EBX  | 2   | 2   | 1          | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | EBX  | 3   | 3   | 1          | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | EBX  | 4   | 4   | 1          | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | EBX  | 31  | 5   | 27         | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | ECX  | 0   | 0   | 1          | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | ECX  | 1   | 1   | 1          | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | ECX  | 31  | 2   | 30         | Reserved  |   | Fixed                            | 0x0                    |
| 0x19              | N/A           | N/A         | Field           | EDX  | 31  | 0   | 32         | Reserved  |   | Fixed                            | 0x0                    |
| <b>0x1a</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |      |     |     |            | <b>Leaf 0x1a</b>  |   |                                  |                        |
| 0x1a              | N/A           | N/A         | Field           | EAX  | 23  | 0   | 24         | Core native model ID  |   | Fixed                            | 0                      |
| 0x1a              | N/A           | N/A         | Field           | EAX  | 31  | 24  | 8          | Core Type   |   | Fixed                            | 0                      |
| 0x1a              | N/A           | N/A         | Field           | EBX  | 31  | 0   | 32         | Reserved  |   | Fixed                            | 0x0                    |
| 0x1a              | N/A           | N/A         | Field           | ECX  | 31  | 0   | 32         | Reserved  |   | Fixed                            | 0x0                    |
| 0x1a              | N/A           | N/A         | Field           | EDX  | 31  | 0   | 32         | Reserved  |   | Fixed                            | 0x0                    |
| <b>0x1b</b>       | <b>0x0</b>    | <b>0x0</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x1b / Sub-Leaf 0x0</b>   |   |                                  |                        |
| 0x1b              | 0x0           | 0x0         | Field           | EAX  | 11  | 0   | 12         | Sub-leaf type.<br>0: Invalid sub-leaf.<br>1: PCONFIG target Identifier. |   | Fixed                            | 0x0                    |
| 0x1b              | 0x0           | 0x0         | Field           | EAX  | 31  | 12  | 20         | Reserved  |   | Fixed                            | 0x0                    |
| 0x1b              | 0x0           | 0x0         | Field           | EBX  | 31  | 0   | 32         | Target identifier:<br>1: MKTME<br>2: TSE                                |   | Fixed                            | 0x0                    |
| 0x1b              | 0x0           | 0x0         | Field           | ECX  | 31  | 0   | 32         | Target identifier   |   | Fixed                            | 0x0                    |
| 0x1b              | 0x0           | 0x0         | Field           | EDX  | 31  | 0   | 32         | Target identifier   |   | Fixed                            | 0x0                    |
| <b>0x1b</b>       | <b>0x1</b>    | <b>0x1</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x1b / Sub-Leaf 0x1</b>   |   |                                  |                        |
| 0x1b              | 0x1           | 0x1         | Field           | EAX  | 31  | 0   | 32         | 0   |   | Fixed                            | 0x0                    |
| 0x1b              | 0x1           | 0x1         | Field           | EBX  | 31  | 0   | 32         | 0   |   | Fixed                            | 0x0                    |
| 0x1b              | 0x1           | 0x1         | Field           | ECX  | 31  | 0   | 32         | 0   |   | Fixed                            | 0x0                    |
| 0x1b              | 0x1           | 0x1         | Field           | EDX  | 31  | 0   | 32         | 0   |   | Fixed                            | 0x0                    |
| <b>0x1c</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     |      |     |     |            | <b>Leaf 0x1c</b>  |   |                                  |                        |
| 0x1c              | N/A           | N/A         | Field           | EAX  | 7   | 0   | 8          | Supported LBR depth values  | TD_PARAMS.XFAM,<br>TD_PARAMS.CPUID_CONFIG | XFAM & Configured &<br>Native    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | EAX  | 29  | 8   | 22         | Reserved_29_8   | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | EAX  | 30  | 30  | 1          | Deep C-state May Reset  | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | EAX  | 31  | 31  | 1          | IP values contain LIP   | TD_PARAMS.XFAM                            | XFAM & Native (Hybrid)           |                        |
| 0x1c              | N/A           | N/A         | Field           | EBX  | 0   | 0   | 1          | CPL Filtering Supported   | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | EBX  | 1   | 1   | 1          | Branch Filtering Supported  | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | EBX  | 2   | 2   | 1          | Call-stack Mode Supported   | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | EBX  | 31  | 3   | 29         | Reserved_31_3   | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | ECX  | 0   | 0   | 1          | Mispredict Bit Supported  | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | ECX  | 1   | 1   | 1          | Timed LBRs Supported  | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | ECX  | 2   | 2   | 1          | Branch Type Field Supported   | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | ECX  | 15  | 3   | 13         | Reserved_15_3   | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | ECX  | 19  | 16  | 4          | LBR Event Logging Extended  | TD_PARAMS.XFAM                            | XFAM & Configured &<br>Native    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | ECX  | 31  | 20  | 12         | Reserved_31_20  | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[15]               |
| 0x1c              | N/A           | N/A         | Field           | EDX  | 31  | 0   | 32         | Reserved  | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[15]               |
| <b>0x1d</b>       | <b>0x0</b>    | <b>0x0</b>  | <b>Sub-Leaf</b> |      |     |     |            | <b>Leaf 0x1d / Sub-Leaf 0x0</b>   |   |                                  |                        |
| 0x1d              | 0x0           | 0x0         | Field           | EAX  | 0   | 0   | 1          | TILE support  | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[18:17]            |
| 0x1d              | 0x0           | 0x0         | Field           | EAX  | 31  | 1   | 31         | Reserved_31_1   | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[18:17]            |
| 0x1d              | 0x0           | 0x0         | Field           | EBX  | 31  | 0   | 32         | Reserved  | TD_PARAMS.XFAM                            | XFAM & Native                    | XFAM[18:17]            |

| Leaf and Sub-Leaf |               |             | CPUID Field     |                                       |     |     |            | Virtualization                   |  |  |                        |
|-------------------|---------------|-------------|-----------------|---------------------------------------|-----|-----|------------|----------------------------------|--|--|------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg.                                  | MSB | LSB | Field Size | Field Name                       | Configuration Details                                | Bit or Field Virtualization Type                 | Virtualization Details |
| 0x1d              | 0x0           | 0x0         | Field           | ECX                                   | 31  | 0   | 32         | Reserved                         | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| 0x1d              | 0x0           | 0x0         | Field           | EDX                                   | 31  | 0   | 32         | Reserved                         | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| <b>0x1d</b>       | <b>0x1</b>    | <b>0x1</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x1d / Sub-Leaf 0x1</b>       |     |     |            |                                  |  |  |                        |
| 0x1d              | 0x1           | 0x1         | Field           | EAX                                   | 15  | 0   | 16         | total_tile_bytes                 | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| 0x1d              | 0x1           | 0x1         | Field           | EAX                                   | 31  | 16  | 16         | bytes_per_tile                   | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| 0x1d              | 0x1           | 0x1         | Field           | EBX                                   | 15  | 0   | 16         | bytes_per_row                    | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| 0x1d              | 0x1           | 0x1         | Field           | EBX                                   | 31  | 16  | 16         | max_names                        | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| 0x1d              | 0x1           | 0x1         | Field           | ECX                                   | 15  | 0   | 16         | max_rows                         | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| 0x1d              | 0x1           | 0x1         | Field           | ECX                                   | 31  | 16  | 16         | Reserved_31_16                   | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| 0x1d              | 0x1           | 0x1         | Field           | EDX                                   | 31  | 0   | 32         | Reserved                         | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| <b>0x1e</b>       | <b>0x0</b>    | <b>0x0</b>  | <b>Leaf</b>     | <b>Leaf 0x1e</b>                      |     |     |            |                                  |  |  |                        |
| 0x1e              | 0x0           | 0x0         | Field           | EAX                                   | 31  | 0   | 32         | Maximum sub leaf                 | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| 0x1e              | 0x0           | 0x0         | Field           | EBX                                   | 7   | 0   | 8          | impl.tmul_maxk (rows or cols)    | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| 0x1e              | 0x0           | 0x0         | Field           | EBX                                   | 23  | 8   | 16         | impl.tmul_maxn (column bytes)    | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| 0x1e              | 0x0           | 0x0         | Field           | EBX                                   | 31  | 24  | 8          | Reserved_31_24                   | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| 0x1e              | 0x0           | 0x0         | Field           | ECX                                   | 31  | 0   | 32         | Reserved                         | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| 0x1e              | 0x0           | 0x0         | Field           | EDX                                   | 31  | 0   | 32         | Reserved                         | TD_PARAMS.XFAM                                       | XFAM & Native                                    | XFAM[18:17]            |
| <b>0x1e</b>       | <b>0x1</b>    | <b>0x1</b>  | <b>Leaf</b>     | <b>Leaf 0x1e</b>                      |     |     |            |                                  |  |  |                        |
| 0x1e              | 0x1           | 0x1         | Field           | EAX                                   | 0   | 0   | 1          | AMX-INT8                         |  | CPUID_Enabled & Native                           |                        |
| 0x1e              | 0x1           | 0x1         | Field           | EAX                                   | 1   | 1   | 1          | AMX-BF16                         |  | CPUID_Enabled & Native                           |                        |
| 0x1e              | 0x1           | 0x1         | Field           | EAX                                   | 2   | 2   | 1          | AMX-COMPLEX                      |  | CPUID_Enabled & Native                           |                        |
| 0x1e              | 0x1           | 0x1         | Field           | EAX                                   | 3   | 3   | 1          | AMX-FP16                         |  | CPUID_Enabled & Native                           |                        |
| 0x1e              | 0x1           | 0x1         | Field           | EAX                                   | 4   | 4   | 1          | AMX-FP8                          |  | XFAM & Configured & Native                       | XFAM[18:17]            |
| 0x1e              | 0x1           | 0x1         | Field           | EAX                                   | 5   | 5   | 1          | AMX-TRANPOSE                     |  | XFAM & Configured & Native                       | XFAM[18:17]            |
| 0x1e              | 0x1           | 0x1         | Field           | EAX                                   | 6   | 6   | 1          | AMX-TF32 (FP19)                  |  | XFAM & Configured & Native                       | XFAM[18:17]            |
| 0x1e              | 0x1           | 0x1         | Field           | EAX                                   | 7   | 7   | 1          | AMX-AVX512                       |  | XFAM & Configured & Native                       | XFAM[18:17]            |
| 0x1e              | 0x1           | 0x1         | Field           | EAX                                   | 8   | 8   | 1          | AMX-MOVR5                        |  | XFAM & Configured & Native                       | XFAM[18:17]            |
| 0x1e              | 0x1           | 0x1         | Field           | EAX                                   | 31  | 9   | 23         | Reserved                         |  | Fixed  | 0x0                    |
| 0x1e              | 0x1           | 0x1         | Field           | EBX                                   | 31  | 0   | 32         | Reserved                         |  | Fixed  | 0x0                    |
| 0x1e              | 0x1           | 0x1         | Field           | ECX                                   | 31  | 0   | 32         | Reserved                         |  | Fixed  | 0x0                    |
| 0x1e              | 0x1           | 0x1         | Field           | EDX                                   | 31  | 0   | 32         | Reserved                         |  | Fixed  | 0x0                    |
| <b>0x1f</b>       | <b>0x0</b>    | <b>0x4</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x1f / Sub-Leaves 0x0-0x4</b> |     |     |            |                                  |  |  |                        |
| 0x1f              | 0x0           | 0x4         | Field           | EAX                                   | 4   | 0   | 5          | Shift Count                      |  | Configured                                       |                        |
| 0x1f              | 0x0           | 0x4         | Field           | EAX                                   | 31  | 5   | 27         | Reserved                         |  | Fixed  | 0                      |
| 0x1f              | 0x0           | 0x4         | Field           | EBX                                   | 15  | 0   | 16         | Logical Processors at this Level |  | Configured                                       |                        |
| 0x1f              | 0x0           | 0x4         | Field           | EBX                                   | 31  | 16  | 16         | Reserved                         |  | Fixed  | 0                      |
| 0x1f              | 0x0           | 0x4         | Field           | ECX                                   | 7   | 0   | 8          | Level Number                     |  | Configured                                       |                        |
| 0x1f              | 0x0           | 0x4         | Field           | ECX                                   | 15  | 8   | 8          | Level Type                       |  | Configured                                       |                        |
| 0x1f              | 0x0           | 0x4         | Field           | ECX                                   | 31  | 16  | 16         | Reserved                         |  | Fixed  | 0                      |
| 0x1f              | 0x0           | 0x4         | Field           | EDX                                   | 31  | 0   | 32         | X2APIC ID                        |  | Calculated                                       | 0                      |
| <b>0x1f</b>       | <b>0x5</b>    | <b>0x5</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x1f / Sub-Leaf 0x5</b>       |     |     |            |                                  |  |  |                        |
| 0x1f              | 0x5           | 0x5         | Field           | EAX                                   | 4   | 0   | 5          | Shift Count                      |  | Configured                                       |                        |
| 0x1f              | 0x5           | 0x5         | Field           | EAX                                   | 31  | 5   | 27         | Reserved                         |  | Fixed  | 0                      |
| 0x1f              | 0x5           | 0x5         | Field           | EBX                                   | 15  | 0   | 16         | Logical Processors at this Level |  | Configured                                       |                        |
| 0x1f              | 0x5           | 0x5         | Field           | EBX                                   | 31  | 16  | 16         | Reserved                         |  | Fixed  | 0                      |
| 0x1f              | 0x5           | 0x5         | Field           | ECX                                   | 7   | 0   | 8          | Level Number                     |  | Configured                                       |                        |
| 0x1f              | 0x5           | 0x5         | Field           | ECX                                   | 15  | 8   | 8          | Level Type                       |  | Configured                                       |                        |
| 0x1f              | 0x5           | 0x5         | Field           | ECX                                   | 31  | 16  | 16         | Reserved                         |  | Fixed  | 0                      |
| 0x1f              | 0x5           | 0x5         | Field           | EDX                                   | 31  | 0   | 32         | X2APIC ID                        |  | Calculated                                       | 0                      |
| <b>0x20</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     | <b>Leaf 0x20</b>                      |     |     |            |                                  |  |  |                        |
| 0x20              | N/A           | N/A         | Field           | EAX                                   | 31  | 0   | 32         | Maximum sub-leaf                 |  | Fixed  | 0x0                    |
| 0x20              | N/A           | N/A         | Field           | EBX                                   | 31  | 0   | 32         | IA32_HRESET_ENABLE mask          |  | Fixed  | 0x0                    |
| 0x20              | N/A           | N/A         | Field           | ECX                                   | 31  | 0   | 32         | Reserved                         |  | Fixed  | 0x0                    |
| 0x20              | N/A           | N/A         | Field           | EDX                                   | 31  | 0   | 32         | Reserved                         |  | Fixed  | 0x0                    |
| <b>0x21</b>       | <b>0x0</b>    | <b>0x0</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x21 / Sub-Leaf 0x0</b>       |     |     |            |                                  |  |  |                        |
| 0x21              | 0x0           | 0x0         | Field           | EAX                                   | 31  | 0   | 32         | Maximum sub-leaf                 |  | Fixed  | 0x00000000             |
| 0x21              | 0x0           | 0x0         | Field           | EBX                                   | 31  | 0   | 32         | "Inte"                           |  | Fixed  | 0x65746E49             |
| 0x21              | 0x0           | 0x0         | Field           | ECX                                   | 31  | 0   | 32         | " "                              |  | Fixed  | 0x20202020             |
| 0x21              | 0x0           | 0x0         | Field           | EDX                                   | 31  | 0   | 32         | "ITDX"                           |  | Fixed  | 0x5844546C             |
| <b>0x22</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b>     | <b>Leaf 0x22</b>                      |     |     |            |                                  |  |  |                        |
| 0x22              | N/A           | N/A         | Field           | EAX                                   | 31  | 0   | 32         | Reserved                         |  | Fixed  | 0x0                    |
| 0x22              | N/A           | N/A         | Field           | EBX                                   | 31  | 0   | 32         | Reserved                         |  | Fixed  | 0x0                    |
| 0x22              | N/A           | N/A         | Field           | ECX                                   | 31  | 0   | 32         | Reserved                         |  | Fixed  | 0x0                    |
| 0x22              | N/A           | N/A         | Field           | EDX                                   | 31  | 0   | 32         | Reserved                         |  | Fixed  | 0x0                    |
| <b>0x23</b>       | <b>0x0</b>    | <b>0x0</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x23 / Sub-Leaf 0x0</b>       |     |     |            |                                  |  |  |                        |
| 0x23              | 0x0           | 0x0         | Field           | EAX                                   | 3   | 0   | 4          | Valid sub-leaf bitmap            | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Configured & Native |                        |
| 0x23              | 0x0           | 0x0         | Field           | EAX                                   | 5   | 4   | 2          | Valid sub-leaf bitmap            | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Configured & Native |                        |

| Leaf and Sub-Leaf |               |             | CPUID Field     |                                 |     |     |            |   | Virtualization                                       |  |                        |  |
|-------------------|---------------|-------------|-----------------|---------------------------------|-----|-----|------------|---|--|--|------------------------|--|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header          | Reg.                            | MSB | LSB | Field Size | Field Name  | Configuration Details                                | Bit or Field Virtualization Type                 | Virtualization Details |  |
| 0x23              | 0x0           | 0x0         | Field           | EAX                             | 31  | 6   | 26         | Reserved  |  | Fixed  | 0x0                    |  |
| 0x23              | 0x0           | 0x0         | Field           | EBX                             | 0   | 0   | 1          | UnitMask2 Supported                                   | TD_PARAMS.ATTRIBUTES.PERFMON                         | Attributes & CPUID_Enabled & Native              |                        |  |
| 0x23              | 0x0           | 0x0         | Field           | EBX                             | 1   | 1   | 1          | Z-bit Supported                                       | TD_PARAMS.ATTRIBUTES.PERFMON                         | Attributes & CPUID_Enabled & Native              |                        |  |
| 0x23              | 0x0           | 0x0         | Field           | EBX                             | 31  | 2   | 30         | Perfmon feature bits                                  | TD_PARAMS.ATTRIBUTES.PERFMON                         | Attributes & CPUID_Enabled & Native              |                        |  |
| 0x23              | 0x0           | 0x0         | Field           | ECX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| 0x23              | 0x0           | 0x0         | Field           | EDX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| <b>0x23</b>       | <b>0x1</b>    | <b>0x1</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x23 / Sub-Leaf 0x1</b> |     |     |            |   |  |  |                        |  |
| 0x23              | 0x1           | 0x1         | Field           | EAX                             | 7   | 0   | 8          | General purpose counter bitmap                        | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Native(Hybrid)      |                        |  |
| 0x23              | 0x1           | 0x1         | Field           | EAX                             | 31  | 8   | 24         | General purpose counter bitmap                        | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Native(Hybrid)      |                        |  |
| 0x23              | 0x1           | 0x1         | Field           | EBX                             | 6   | 0   | 7          | Fixed counter bitmap                                  | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Native(Hybrid)      |                        |  |
| 0x23              | 0x1           | 0x1         | Field           | EBX                             | 31  | 7   | 25         | Fixed counter bitmap                                  | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Native(Hybrid)      |                        |  |
| 0x23              | 0x1           | 0x1         | Field           | ECX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| 0x23              | 0x1           | 0x1         | Field           | EDX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| <b>0x23</b>       | <b>0x2</b>    | <b>0x2</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x23 / Sub-Leaf 0x2</b> |     |     |            |   |  |  |                        |  |
| 0x23              | 0x2           | 0x2         | Field           | EAX                             | 31  | 0   | 32         | PMC ACR counter bitmap                                | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Configured & Native |                        |  |
| 0x23              | 0x2           | 0x2         | Field           | EBX                             | 31  | 0   | 32         | FCACR counter bitmap                                  | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Configured & Native |                        |  |
| 0x23              | 0x2           | 0x2         | Field           | ECX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| 0x23              | 0x2           | 0x2         | Field           | EDX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| <b>0x23</b>       | <b>0x3</b>    | <b>0x3</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x23 / Sub-Leaf 0x3</b> |     |     |            |   |  |  |                        |  |
| 0x23              | 0x3           | 0x3         | Field           | EAX                             | 31  | 0   | 32         | Perfmon events bitmap                                 | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Native(Hybrid)      |                        |  |
| 0x23              | 0x3           | 0x3         | Field           | EBX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| 0x23              | 0x3           | 0x3         | Field           | ECX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| 0x23              | 0x3           | 0x3         | Field           | EDX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| <b>0x23</b>       | <b>0x4</b>    | <b>0x4</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x23 / Sub-Leaf 0x4</b> |     |     |            |   |  |  |                        |  |
| 0x23              | 0x4           | 0x4         | Field           | EAX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| 0x23              | 0x4           | 0x4         | Field           | EBX                             | 31  | 0   | 32         | Adaptive PEBS field groupings bitmap                  | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Configured & Native |                        |  |
| 0x23              | 0x4           | 0x4         | Field           | ECX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| 0x23              | 0x4           | 0x4         | Field           | EDX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| <b>0x23</b>       | <b>0x5</b>    | <b>0x5</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x23 / Sub-Leaf 0x5</b> |     |     |            |   |  |  |                        |  |
| 0x23              | 0x5           | 0x5         | Field           | EAX                             | 31  | 0   | 32         | bitmap of GP counters with PEBS support               | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Configured & Native |                        |  |
| 0x23              | 0x5           | 0x5         | Field           | EBX                             | 31  | 0   | 32         | bitmap of GP counters with PEBS PDIST/PDIR support    | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Configured & Native |                        |  |
| 0x23              | 0x5           | 0x5         | Field           | ECX                             | 31  | 0   | 32         | bitmap of fixed counters with PEBS support            | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Configured & Native |                        |  |
| 0x23              | 0x5           | 0x5         | Field           | EDX                             | 31  | 0   | 32         | bitmap of fixed counters with PEBS PDIST/PDIR support | TD_PARAMS.ATTRIBUTES.PERFMON, TD_PARAMS.CPUID_CONFIG | Attributes & CPUID_Enabled & Configured & Native |                        |  |
| <b>0x24</b>       | <b>0x0</b>    | <b>0x0</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x24 / Sub-Leaf 0x0</b> |     |     |            |   |  |  |                        |  |
| 0x24              | 0x0           | 0x0         | Field           | EAX                             | 31  | 0   | 32         | Maximum supported sub-leaf                            | TD_PARAMS.XFAM                                       | XFAM & CPUID_Enabled & Native                    |                        |  |
| 0x24              | 0x0           | 0x0         | Field           | EBX                             | 7   | 0   | 8          | Converged vector ISA version                          | TD_PARAMS.XFAM                                       | XFAM & CPUID_Enabled & Native                    |                        |  |
| 0x24              | 0x0           | 0x0         | Field           | EBX                             | 15  | 8   | 8          | Reserved  |  | Fixed  | 0x0                    |  |
| 0x24              | 0x0           | 0x0         | Field           | EBX                             | 16  | 16  | 1          | 128-bit vector support                                | TD_PARAMS.XFAM                                       | XFAM & CPUID_Enabled & Native                    |                        |  |
| 0x24              | 0x0           | 0x0         | Field           | EBX                             | 17  | 17  | 1          | 256-bit vector support                                | TD_PARAMS.XFAM                                       | XFAM & CPUID_Enabled & Native                    |                        |  |
| 0x24              | 0x0           | 0x0         | Field           | EBX                             | 18  | 18  | 1          | 512-bit vector support                                | TD_PARAMS.XFAM                                       | XFAM & CPUID_Enabled & Native                    |                        |  |
| 0x24              | 0x0           | 0x0         | Field           | EBX                             | 31  | 19  | 13         | Reserved  |  | Fixed  | 0x0                    |  |
| 0x24              | 0x0           | 0x0         | Field           | ECX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| 0x24              | 0x0           | 0x0         | Field           | EDX                             | 31  | 0   | 32         | Reserved  |  | Fixed  | 0x0                    |  |
| <b>0x24</b>       | <b>0x1</b>    | <b>0x1</b>  | <b>Sub-Leaf</b> | <b>Leaf 0x24 / Sub-Leaf 0x1</b> |     |     |            |   |  |  |                        |  |

| Leaf and Sub-Leaf |               |             | CPUID Field |      |     |     |            | Virtualization                    |                       |                                  |                                    |
|-------------------|---------------|-------------|-------------|------|-----|-----|------------|-----------------------------------|-----------------------|----------------------------------|------------------------------------|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header      | Reg. | MSB | LSB | Field Size | Field Name                        | Configuration Details | Bit or Field Virtualization Type | Virtualization Details             |
| 0x24              | 0x1           | 0x1         | Field       | EAX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x24              | 0x1           | 0x1         | Field       | EBX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x24              | 0x1           | 0x1         | Field       | ECX  | 0   | 0   | 1          | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x24              | 0x1           | 0x1         | Field       | ECX  | 31  | 2   | 30         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x24              | 0x1           | 0x1         | Field       | EDX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| <b>0x25</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x25</b>                  |                       |                                  |                                    |
| 0x25              | N/A           | N/A         | Field       | EAX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x25              | N/A           | N/A         | Field       | EBX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x25              | N/A           | N/A         | Field       | ECX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x25              | N/A           | N/A         | Field       | EDX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| <b>0x26</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x26</b>                  |                       |                                  |                                    |
| 0x26              | N/A           | N/A         | Field       | EAX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x26              | N/A           | N/A         | Field       | EBX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x26              | N/A           | N/A         | Field       | ECX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x26              | N/A           | N/A         | Field       | EDX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| <b>0x27</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x27</b>                  |                       |                                  |                                    |
| 0x27              | N/A           | N/A         | Field       | EAX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x27              | N/A           | N/A         | Field       | EBX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x27              | N/A           | N/A         | Field       | ECX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x27              | N/A           | N/A         | Field       | EDX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| <b>0x28</b>       | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x28</b>                  |                       |                                  |                                    |
| 0x28              | N/A           | N/A         | Field       | EAX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x28              | N/A           | N/A         | Field       | EBX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x28              | N/A           | N/A         | Field       | ECX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x28              | N/A           | N/A         | Field       | EDX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| <b>0x29</b>       | <b>0x0</b>    | <b>0x0</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x29</b>                  |                       |                                  |                                    |
| 0x29              | 0x0           | 0x0         | Field       | EAX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x29              | 0x0           | 0x0         | Field       | EBX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x29              | 0x0           | 0x0         | Field       | ECX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x29              | 0x0           | 0x0         | Field       | EDX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| <b>0x80000000</b> | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x80000000</b>            |                       |                                  |                                    |
| 0x80000000        | N/A           | N/A         | Field       | EAX  | 31  | 0   | 32         | MaxIndex                          |                       | Fixed                            | 0x80000008                         |
| 0x80000000        | N/A           | N/A         | Field       | EBX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000000        | N/A           | N/A         | Field       | ECX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000000        | N/A           | N/A         | Field       | EDX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| <b>0x80000001</b> | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x80000001</b>            |                       |                                  |                                    |
| 0x80000001        | N/A           | N/A         | Field       | EAX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000001        | N/A           | N/A         | Field       | EBX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000001        | N/A           | N/A         | Field       | ECX  | 0   | 0   | 1          | LAHF/SAHF in 64-bit Mode          |                       | Fixed                            | 0x1                                |
| 0x80000001        | N/A           | N/A         | Field       | ECX  | 4   | 1   | 4          | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000001        | N/A           | N/A         | Field       | ECX  | 5   | 5   | 1          | LZCNT                             |                       | Fixed                            | 0x1                                |
| 0x80000001        | N/A           | N/A         | Field       | ECX  | 7   | 6   | 2          | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000001        | N/A           | N/A         | Field       | ECX  | 8   | 8   | 1          | PREFETCHW                         |                       | Fixed                            | 0x1                                |
| 0x80000001        | N/A           | N/A         | Field       | ECX  | 31  | 9   | 23         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000001        | N/A           | N/A         | Field       | EDX  | 10  | 0   | 11         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000001        | N/A           | N/A         | Field       | EDX  | 11  | 11  | 1          | SYSCALL/SYSRET in 64-bit Mode     |                       | Calculated                       | 1 in 64-bit mode, 0 in other modes |
| 0x80000001        | N/A           | N/A         | Field       | EDX  | 19  | 12  | 8          | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000001        | N/A           | N/A         | Field       | EDX  | 20  | 20  | 1          | Execute Disable Bit               |                       | Fixed                            | 0x1                                |
| 0x80000001        | N/A           | N/A         | Field       | EDX  | 25  | 21  | 5          | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000001        | N/A           | N/A         | Field       | EDX  | 26  | 26  | 1          | 1GB Pages                         |                       | Fixed                            | 0x1                                |
| 0x80000001        | N/A           | N/A         | Field       | EDX  | 27  | 27  | 1          | RDTSCP and IA32_TSC_AUX           |                       | Fixed                            | 0x1                                |
| 0x80000001        | N/A           | N/A         | Field       | EDX  | 28  | 28  | 1          | Reserved_28                       |                       | Fixed                            | 0x0                                |
| 0x80000001        | N/A           | N/A         | Field       | EDX  | 29  | 29  | 1          | Intel 64                          |                       | Fixed                            | 0x1                                |
| 0x80000001        | N/A           | N/A         | Field       | EDX  | 31  | 30  | 2          | Reserved_31_30                    |                       | Fixed                            | 0x0                                |
| <b>0x80000002</b> | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x80000002</b>            |                       |                                  |                                    |
| 0x80000002        | N/A           | N/A         | Field       | EAX  | 31  | 0   | 32         | Brand String Bytes 0 to 3: "Inte" |                       | Fixed                            | 0x65746e49                         |
| 0x80000002        | N/A           | N/A         | Field       | EBX  | 31  | 0   | 32         | Brand String Bytes 4 to 7: "l TD" |                       | Fixed                            | 0x4454206c                         |
| 0x80000002        | N/A           | N/A         | Field       | ECX  | 31  | 0   | 32         | Brand String Bytes 8 to 11: "X "  |                       | Fixed                            | 0x20202058                         |
| 0x80000002        | N/A           | N/A         | Field       | EDX  | 31  | 0   | 32         | Brand String Bytes 12 to 15: 0    |                       | Fixed                            | 0x00000000                         |
| <b>0x80000003</b> | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x80000003</b>            |                       |                                  |                                    |
| 0x80000003        | N/A           | N/A         | Field       | EAX  | 31  | 0   | 32         | Brand String Bytes 16 to 19: 0    |                       | Fixed                            | 0x0                                |
| 0x80000003        | N/A           | N/A         | Field       | EBX  | 31  | 0   | 32         | Brand String Bytes 20 to 23: 0    |                       | Fixed                            | 0x0                                |
| 0x80000003        | N/A           | N/A         | Field       | ECX  | 31  | 0   | 32         | Brand String Bytes 24 to 27: 0    |                       | Fixed                            | 0x0                                |
| 0x80000003        | N/A           | N/A         | Field       | EDX  | 31  | 0   | 32         | Brand String Bytes 28 to 31: 0    |                       | Fixed                            | 0x0                                |
| <b>0x80000004</b> | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x80000004</b>            |                       |                                  |                                    |
| 0x80000004        | N/A           | N/A         | Field       | EAX  | 31  | 24  | 8          | Brand String Bytes 32 to 35: 0    |                       | Fixed                            | 0x0                                |
| 0x80000004        | N/A           | N/A         | Field       | EBX  | 31  | 24  | 8          | Brand String Bytes 36 to 39: 0    |                       | Fixed                            | 0x0                                |
| 0x80000004        | N/A           | N/A         | Field       | ECX  | 31  | 24  | 8          | Brand String Bytes 40 to 43: 0    |                       | Fixed                            | 0x0                                |
| 0x80000004        | N/A           | N/A         | Field       | EDX  | 31  | 24  | 8          | Brand String Bytes 44 to 47: 0    |                       | Fixed                            | 0x0                                |
| <b>0x80000005</b> | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x80000005</b>            |                       |                                  |                                    |
| 0x80000005        | N/A           | N/A         | Field       | EAX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000005        | N/A           | N/A         | Field       | EBX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000005        | N/A           | N/A         | Field       | ECX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| 0x80000005        | N/A           | N/A         | Field       | EDX  | 31  | 0   | 32         | Reserved                          |                       | Fixed                            | 0x0                                |
| <b>0x80000006</b> | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x80000006</b>            |                       |                                  |                                    |

| Leaf and Sub-Leaf |               |             | CPUID Field |      |     |     |            | Virtualization                        |                        |                                  |  |
|-------------------|---------------|-------------|-------------|------|-----|-----|------------|---------------------------------------|------------------------|----------------------------------|--|
| Leaf              | Sub-Leaf From | Sub-Leaf To | Header      | Reg. | MSB | LSB | Field Size | Field Name                            | Configuration Details  | Bit or Field Virtualization Type | Virtualization Details                     |
| 0x80000006        | N/A           | N/A         | Field       | EAX  | 31  | 0   | 32         | Reserved                              |                        | Fixed                            | 0x0  |
| 0x80000006        | N/A           | N/A         | Field       | EBX  | 31  | 0   | 32         | Reserved                              |                        | Fixed                            | 0x0  |
| 0x80000006        | N/A           | N/A         | Field       | ECX  | 7   | 0   | 8          | Cache Line Size in Bytes              |                        | Fixed                            | 0x40                                       |
| 0x80000006        | N/A           | N/A         | Field       | ECX  | 11  | 8   | 4          | Reserved_11_8                         |                        | Fixed                            | 0x0  |
| 0x80000006        | N/A           | N/A         | Field       | ECX  | 15  | 12  | 4          | L2 Associativity                      |                        | Fixed                            | 0x7  |
| 0x80000006        | N/A           | N/A         | Field       | ECX  | 31  | 16  | 16         | Cache Size (1kB Units)                |                        | Native @ TD Init                 |  |
| 0x80000006        | N/A           | N/A         | Field       | EDX  | 31  | 0   | 32         | Reserved                              |                        | Fixed                            | 0x0  |
| <b>0x80000007</b> | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x80000007</b>                |                        |                                  |  |
| 0x80000007        | N/A           | N/A         | Field       | EAX  | 31  | 0   | 32         | Reserved                              |                        | Fixed                            | 0x0  |
| 0x80000007        | N/A           | N/A         | Field       | EBX  | 31  | 0   | 32         | Reserved                              |                        | Fixed                            | 0x0  |
| 0x80000007        | N/A           | N/A         | Field       | ECX  | 31  | 0   | 32         | Reserved                              |                        | Fixed                            | 0x0  |
| 0x80000007        | N/A           | N/A         | Field       | EDX  | 7   | 0   | 8          | Reserved_7_0                          |                        | Fixed                            | 0x0  |
| 0x80000007        | N/A           | N/A         | Field       | EDX  | 8   | 8   | 1          | Invariant TSC                         |                        | Fixed                            | 0x1  |
| 0x80000007        | N/A           | N/A         | Field       | EDX  | 31  | 9   | 23         | Reserved_31_9                         |                        | Fixed                            | 0x0  |
| <b>0x80000008</b> | <b>N/A</b>    | <b>N/A</b>  | <b>Leaf</b> |      |     |     |            | <b>Leaf 0x80000008</b>                |                        |                                  |  |
| 0x80000008        | N/A           | N/A         | Field       | EAX  | 7   | 0   | 8          | Number of Physical Address Bits       | TD_PARAMS.CPUID_CONFIG | Special                          | Based on config and native values and GPAW |
| 0x80000008        | N/A           | N/A         | Field       | EAX  | 15  | 8   | 8          | Number of Linear Address Bits         |                        | Special                          | Based on virt. CPUID(7, 0).ECX[16]         |
| 0x80000008        | N/A           | N/A         | Field       | EAX  | 31  | 16  | 16         | Number of Guest Physical Address Bits | TD_PARAMS.CONFIG_FLAGS | Configured                       |  |
| 0x80000008        | N/A           | N/A         | Field       | EBX  | 8   | 0   | 9          | Reserved_8_0                          |                        | Fixed                            | 0x0  |
| 0x80000008        | N/A           | N/A         | Field       | EBX  | 9   | 9   | 1          | WBNOINVD support                      | TD_PARAMS.CPUID_CONFIG | Configured & Native              |  |
| 0x80000008        | N/A           | N/A         | Field       | EBX  | 31  | 10  | 22         | Reserved_31_10                        |                        | Fixed                            | 0x0  |
| 0x80000008        | N/A           | N/A         | Field       | ECX  | 31  | 0   | 32         | Reserved                              |                        | Fixed                            | 0x0  |
| 0x80000008        | N/A           | N/A         | Field       | EDX  | 31  | 0   | 32         | Reserved                              |                        | Fixed                            | 0x0  |