



AMD CPUInfo

for Linux[®]

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Introduction

AMD CPUInfo displays processor and system information for computers using authentic AMD processors running Linux®.

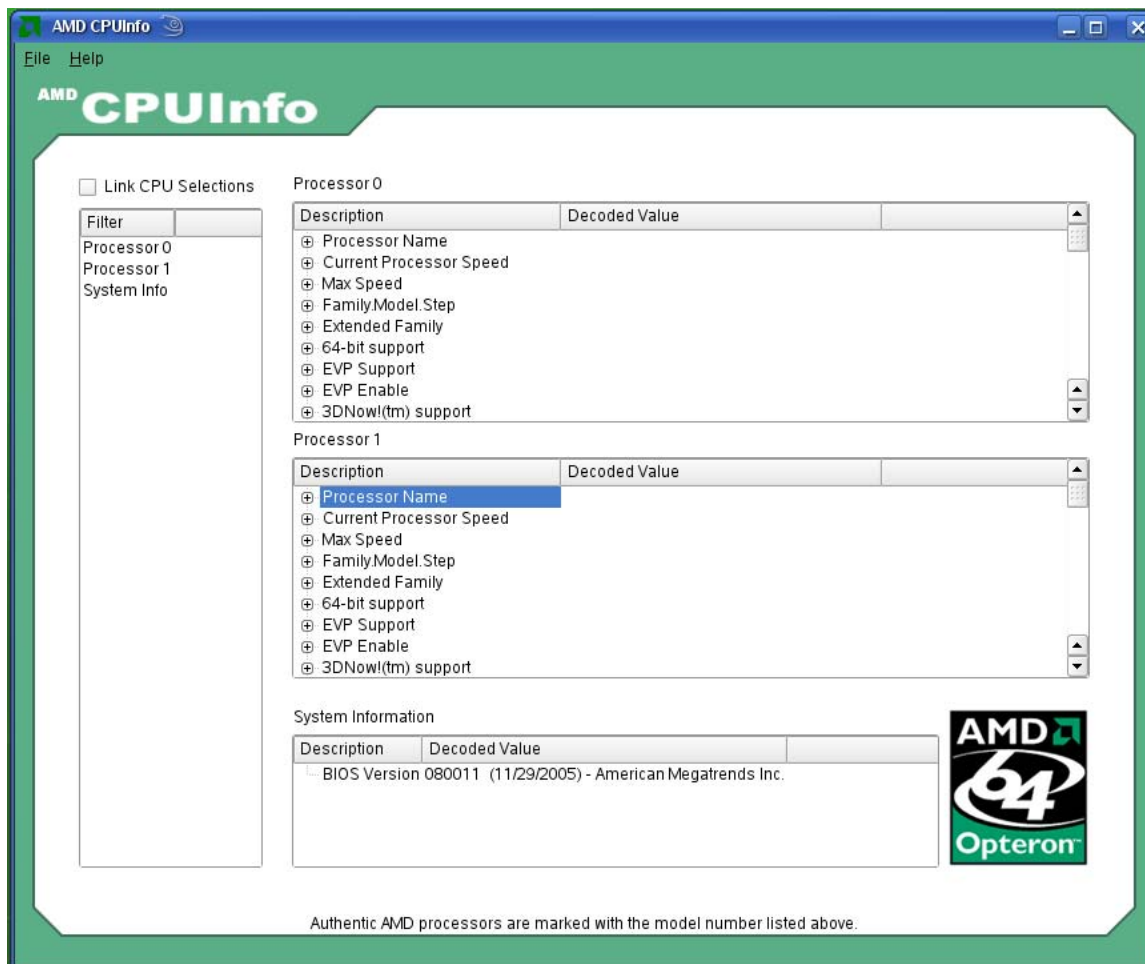
The utility displays information about the system and processor as shown in the following table.

Field Name	Description
BIOS version	The system's BIOS revision.
Processor name	The processor name string as interpreted by the BIOS.
Current Processor Speed	The current operating speed of the processor in MHz.
Max. speed	The maximum speed of the processor in MHz.
Family.Model.Step	AMD processors are represented by families (i.e., AMD Opteron™ and AMD Athlon™ processors), and within families by model numbers. In addition, each processor has a revision number or stepping number.
Extended Family	The upper eight bits of the CPUID that identifies the processor extended family.
64-bit support	Indicates if 64-bit is supported.
EVP Support	Indicates if EVP (Enhanced Virus Protection) is supported.
EVP Enable	Indicates if EVP is enabled.
3DNow!™ support	Indicates if 3DNow!™ technology for enhanced 3D graphics is supported.
3DNow!™ extensions support	Indicates if extensions to 3DNow! technology are supported.
MMX™ support	Indicates if MMX™ is supported.
MMX™ extensions support	Indicates if MMX extensions are supported.
SSE support	Indicates if streaming SIMD (Single Instruction Multiple Data) extensions are supported.
SSE2 support	Indicates if streaming SIMD extensions 2 are supported.
SSE3 support	Indicates if streaming SIMD extensions 3 are supported.
SSE4 support	Indicates if streaming SIMD extensions 4 are supported.
THERMTRIP support	Indicates if THERMTRIP is supported.
TSC Invariant	Indicates if the TSC is invariant
CMPXCHG16B support	Indicates if the CMPXCHG16B instruction is supported.
RDTSCP support	Indicates is RDTSCP is supported.
Secure Virtual Mode support	Indicates if Secure Virtual Mode is supported.
Secure Virtual Mode Enable	Indicates if Secure Virtual Mode is enabled.
Nested Paging Support	Indicates if nested paging is supported.
Extended APIC Space	Indicates if extended APIC space is present.

LOCK MOV CR0	Indicates if the LOCK MOV CR0 instruction is supported.
L1 Data Cache Size	The size of the L1 data cache containing program data in Kbytes.
L1 Instruction Cache Size	The size of the L1 data cache containing program instructions in Kbytes.
L2 Cache Size	The size of the L2 cache which may contain program instructions and data in Kbytes.
AMD PowerNow!™ Capable	Indicates if AMD PowerNow! technology is supported.
DIMM ECC Enable	Indicates if DIMM Error Correction Code (ECC) is being used.
Memory Bus Speed	The speed of the bus going to the memory banks.
HTx Frequency	The frequency of the HyperTransport™ technology bus (in MHz) for each link.
HTx Width In	The width of the HyperTransport link (in bits) going to the processor.
HTx Width Out	The width of the HyperTransport link (in bits) coming from the processor.
HTx Link is Ganged	Indicates if the HyperTransport link is ganged.
TLB Workaround	Indicates if the TLB workaround has been enabled or disabled in BIOS for AMD family 10h revision B2 processors.

Using AMD CPUInfo

AMD CPUInfo displays system and processor information automatically when launched.



Displaying Information With the Filter List

The Filter list on the left side of the screen displays the number of processors detected and system information. For multiprocessor systems, each processor displays on a separate line (Processor 0, Processor 1, etc.).

Filter	
Processor 0	
Processor 1	
System Info	

Double-click a processor in the Filter list to show or hide details about the processor in the Processor area. Expand or collapse each section to view details.

Processor 1

Description	Decoded Value	
⊕ Processor Name		
⊕ Current Processor Speed		
⊕ Max Speed		
⊕ FamilyModel.Step		
⊕ Extended Family		
⊕ 64-bit support		
⊕ EVP Support		
⊕ EVP Enable		
⊕ 3DNow!(tm) support		
⊕ 3DNow!(tm) Extensions support		
⊕ MMX(tm) support		
⊕ MMX(tm) Extensions support		
⊕ SSE support		
⊕ SSE2 support		
⊕ SSE3 support		
⊕ SSE4A support		
⊕ THERMTRIP support		
⊕ TSC Invariant		
⊕ CMPXCHG16B support		
⊕ RDTSCP support		
⊕ Secure Virtual Mode support		

Double-click **System Info** in the Filter list to show or hide system details in the System Information area.

System Information

Description	Decoded Value
BIOS Version 080011 (11/29/2005) - American Megatrends Inc.	

Link CPU Selections Check Box

If the system has multiple processors or cores, the program displays processor information in a separate scroll box for each processor or core.

Processor 0

Description	Decoded Value	
⊕ Processor Name		
⊕ Current Processor Speed		
⊕ Max Speed		
⊕ Family.Model.Step		
⊕ Extended Family		
⊕ 64-bit support		
⊕ EVP Support		
⊕ EVP Enable		
⊕ 3DNow!(tm) support		

Processor 1

Description	Decoded Value	
⊕ Processor Name		
⊕ Current Processor Speed		
⊕ Max Speed		
⊕ Family.Model.Step		
⊕ Extended Family		
⊕ 64-bit support		
⊕ EVP Support		
⊕ EVP Enable		
⊕ 3DNow!(tm) support		

Select the **Link CPU Selections** check box to replace the individual scroll boxes with one combined view. For dual core processors, each processor is listed by processor and core number.

Processor Information

Description	Decoded Value	
⊖ Processor Name		
Proc0 core 0:	Dual Core AMD Opteron(tm) Processor 290	
Proc0 core 1:	Dual Core AMD Opteron(tm) Processor 290	
Proc1 core 0:	Dual Core AMD Opteron(tm) Processor 290	
Proc1 core 1:	Dual Core AMD Opteron(tm) Processor 290	
⊖ Current Processor Speed		
Proc0 core0:	2800 MHz	
Proc0 core1:	2800 MHz	
Proc1 core0:	2800 MHz	
Proc1 core1:	2800 MHz	
⊖ Max Speed		
Proc0 core0:	2800 MHz	
Proc0 core1:	2800 MHz	
Proc1 core0:	2800 MHz	
Proc1 core1:	2800 MHz	
⊕ Family.Model.Step		
⊕ Extended Family		
⊕ 64-bit support		
⊕ EVP Support		
⊕ EVP Enable		
⊕ 3DNow!(tm) support		

AMD Logo

The AMD logo that corresponds to the detected processor(s) appears to the right of the system information.

System Information

Description	Decoded Value
BIOS Version 080011 (11/29/2005) - American Megatrends Inc.	



Command Line Options

The following table shows command line options for use in a command prompt window. Type ***cpuinfo*** followed by the command to return the string to the console.

Option	Description
-? -Option	Returns detailed syntax for the specified option. Two or more options may be specified.
-h -Option	Returns detailed syntax for the specified option. Two or more options may be specified.
-Help	Displays a list of options.
-All	Executes all options.
-b	Enables Brief format (excludes header information).
-3DNowExtSupp	3DNow!™ technology extensions support
-3DNowPrefetchSupp	3DNow! technology prefetch support
-3DNowSupp	3DNow! technology support
-CMPXCHG16BSupp	CMPXCHG16B support
-ExtFamily	Extended Family
-ExtendedAPICSpace	Extended APIC Space
-FMS	Family.Model.Step
-L1DataCacheSize	L1 Data Cache Size
-L1InstCacheSize	L1 Instruction Cache Size
-L2CacheSize	L2 Cache Size
-L3CacheSize	-L3CacheSize
-MMXExtSupp	MMX™ Extensions support
-MMXSupp	MMX Support
-MaxPhyAddWidth	Maximum Physical Address width
-MaxVirAddWidth	Maximum VirtualAddress width
-PowerNowCapable	AMD PowerNow!™ capable
-ProcName	Processor Name
-RDTSCPSupp	RDTSCP support
-SSE2Supp	SSE2 support
-SSE3Supp	SSE3 support
-SSE4Supp	SSE4 support
-SSESupp	SSE support
-THERMTRIPSupp	THERMTRIP support
-is64BitSupp	64-bit support
-isEVPEnable	EVP Support
-isEVPSupp	EVP Enable

-isNestedPaging	Nested Paging Support
-isSVMEnable	Secure Virtual Mode Enable
-isSVMSupp	Secure Virtual Mode support
-isTSCInvariant	TSC Invariant
-isGuestMode	Running Virtualized environment
-tlbworkaround	Indicates the status of the TLB workaround in BIOS for AMD family 10h revision B2 processors. Returns <i>enabled</i> or <i>disabled</i> .

The following illustration shows an example of the console output using the **-All** switch. "Feature Not Supported" indicates that the feature is not implemented in the architecture. "No" indicates that the feature is not enabled. "Yes" indicates that the feature is enabled.

```

Session  Edit  View  Bookmarks  Settings  Help
SUSE-103:/usr/local/sbin # ./CPUInfo -all

=====
AMD CPUInfo Command Line Utility
Version 2.2.0, Copyright (C) 2004-2008
Advanced Micro Devices, Inc.
=====

3DNow!(tm) Extensions support      ->  Yes
3DNow!(tm) Support                 ->  Yes
CMPXCHG16B support                 ->  Feature Not Supported
Extended APIC Space                ->  Feature Not Supported
Extended Family                    ->  0x 0
Family.Model.Step                  ->  0x F.21.2
64 Bit Support                     ->  Yes
EVP Support                        ->  Yes
EVP Enable                         ->  Yes
Running Virtualized environment    ->  Feature Not Supported
Nested Paging Support               ->  Feature Not Supported
Secure Virtual Mode Enable          ->  Feature Not Supported
Secure Virtual Mode support         ->  Feature Not Supported
TSC Invariant                      ->  no
L1 Data Cache Size                  ->  64KBytes
L1 Instruction Cache Size           ->  64KBytes
L2 Cache Size                       ->  1MBytes
L3 Cache Size                       ->  Feature Not Supported
MMX(tm) Extensions Support          ->  Yes
MMX(tm)Support                     ->  Yes
AMD PowerNow!(tm) Capable           ->  Yes
Processor Name                      ->  Dual Core AMD Opteron(tm) Processor 290
RDTSCP support                     ->  Feature Not Supported
SSE2 support                        ->  Yes
SSE3 support                        ->  Yes
SSE4A support                       ->  Feature Not Supported
SSE support                         ->  Yes
THERMTRIP support                   ->  Yes
=====
SUSE-103:/usr/local/sbin # █

```

Two formats are available for viewing the console information. The Verbose format displays header information. The Brief format excludes the header information and is enabled by using the **-b** option.

Feedback

We're interested in any feedback you may have about the tool.

Problem Report

If you find a problem, we ask that you please e-mail the following information to debug.tools@amd.com:

- Describe the problem or issue.
- Describe why you believe this is a problem.
- Describe your proposed solution, change, or improvement.
- Briefly describe the steps or sequence of events that led to your observation.
- How frequently did the problem occur?
- What messages did the utility display?
- Which version of the utility are you using? This information is in the **Help > About** dialog box.
- What operating system and service pack are you using?
- How much free disk space do you have?
- Describe your system in regards to the following:
 - Processor type and speed
 - Motherboard make and model
 - System memory size
 - Video graphics card make and model
 - Video screen resolution (for example, 1024x768x16 bpp)
 - Other installed Input/Output cards (for example sound cards, other PCI cards)

Enhancement Request

Please e-mail the following information about a desired enhancement or change to debug.tools@amd.com:

- Which version of the utility are you using? This information is in the **Help > About** dialog box.
- Describe the desired enhancement or change.
- Indicate to us how important the enhancement or change is to you using a scale of 1 to 5, where 1 is most important and 5 least important.