



Linux Ubuntu 26.04 Manual Pages on command 'cpupower-idle-info.1'

\$ man cpupower-idle-info.1

CPUPOWER-IDLE-INFO(1)

cpupower Manual

CPUPOWER-IDLE-INFO(1)

NAME

cpupower-idle-info - Utility to retrieve cpu idle kernel information

SYNTAX

cpupower [-c cpulist] idle-info [options]

DESCRIPTION

A tool which prints out per cpu idle information helpful to developers and interested users.

OPTIONS

-f --silent

Only print a summary of all available C-states in the system.

-e --proc

deprecated. Prints out idle information in old /proc/acpi/processor/*/power format.

This interface has been removed from the kernel for quite some time, do not let fur?

ther code depend on this option, best do not use it.

IDLE-INFO DESCRIPTIONS

CPU sleep state statistics and descriptions are retrieved from sysfs files, exported by the cpuidle kernel subsystem. The kernel only updates these statistics when it enters or leaves an idle state, therefore on a very idle or a very busy system, these statistics may not be accurate. They still provide a good overview about the usage and availability of processor sleep states on the platform.

Be aware that the sleep states as exported by the hardware or BIOS and used by the Linux kernel may not exactly reflect the capabilities of the processor. This often is the case on the X86 architecture when the acpi_idle driver is used. It is also possible that the hard?

ware overrules the kernel requests, due to internal activity monitors or other reasons. On recent X86 platforms it is often possible to read out hardware registers which monitor the duration of sleep states the processor resided in. The cpupower monitor tool (cpupower-monitor(1)) can be used to show real sleep state residencies. Please refer to the architecture specific description section below.

IDLE-INFO ARCHITECTURE SPECIFIC DESCRIPTIONS

X86

POLL idle state

If cpuidle is active, X86 platforms have one special idle state. The POLL idle state is not a real idle state, it does not save any power. Instead, a busy-loop is executed doing nothing for a short period of time. This state is used if the kernel knows that work has to be processed very soon and entering any real hardware idle state may result in a slight performance penalty.

There exist two different cpuidle drivers on the X86 architecture platform:

"acpi_idle" cpuidle driver

The acpi_idle cpuidle driver retrieves available sleep states (C-states) from the ACPI BIOS tables (from the _CST ACPI function on recent platforms or from the FADT BIOS table on older ones). The C1 state is not retrieved from ACPI tables. If the C1 state is entered, the kernel will call the hlt instruction (or mwait on Intel).

"intel_idle" cpuidle driver

In kernel 2.6.36 the intel_idle driver was introduced. It only serves recent Intel CPUs (Nehalem, Westmere, Sandybridge, Atoms or newer). On older Intel CPUs the acpi_idle driver is still used (if the BIOS provides C-state ACPI tables). The intel_idle driver knows the sleep state capabilities of the processor and ignores ACPI BIOS exported processor sleep states tables.

REMARKS

By default only values of core zero are displayed. How to display settings of other cores is described in the cpupower(1) manpage in the --cpu option section.

REFERENCES

<https://uefi.org/specifications>

FILES

/sys/devices/system/cpu/cpu*/cpuidle/state*

/sys/devices/system/cpu/cpuidle/*

AUTHORS

Thomas Renninger <trenn@suse.de>

SEE ALSO

cpupower(1), cpupower-monitor(1), cpupower-info(1), cpupower-set(1), cpupower-idle-set(1)

0.1

CPUPOWER-IDLE-INFO(1)