Cool ‘n’ Quiet™ Technology Installation Guide for AMD Athlon™ 64 Processor Based Systems

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Contents

Revision History 4

About This Document 5

AMD Cool n' Quiet Technology Overview 6

You Will Need 7

Enabling Cool 'n' Quiet™ Technology 9

Checking for Functionality 11

Revision History

Date	Rev	Description
December 2003	0.2	Initial release.
December 2003	0.3	Minor editing corrections. New screenshot in Checking for Functionality
June 2004	0.4	Minor editing corrections.

About This Document

This document is intended for use by those who are interested in enabling Cool 'n' Quiet™ technology functionality on an AMD Athlon™ 64 processor based system.

Included in this document is a step-by-step guide indicating the correct components to be used, as well as instructions on obtaining and installing the correct driver software.

AMD Cool n' Quiet Technology Overview

In the past, increased processor performance has often meant increased power consumption and increased noise levels. AMD Cool 'n' Quiet™ technology is an innovative solution available on AMD Athlon™ 64 processor-based systems that can effectively lower the power consumption and enable a quieter-running system while delivering performance on demand, for the ultimate computing experience.

The premise behind AMD Cool 'n' Quiet technology is a very simple one. Some applications require less processing power than others. Word processing, for example, consumes relatively few processor cycles, but if you run games, video editing or other multimedia applications on the same system, more processor cycles will be required for responsive performance.
AMD Cool 'n' Quiet™ technology controls your system's level of processor performance automatically, dynamically adjusting the operating frequency and voltage up to 30 times per second, according to the task at hand. When an application does not require full performance, significant amounts of power can be saved. However, the processor can respond to increased workloads, allowing the system to deliver a responsive and rewarding computing experience. The only difference the user will observe with most applications is that the system will run cooler and quieter. Performance is designed to still be responsive, with maximum processor performance being delivered when required, and automatic power savings when possible.

You Will Need

To have an AMD Athlon 64 processor-based system with Cool 'n' Quiet enabled, you will need the following:

1. AMD Athlon 64 processor.

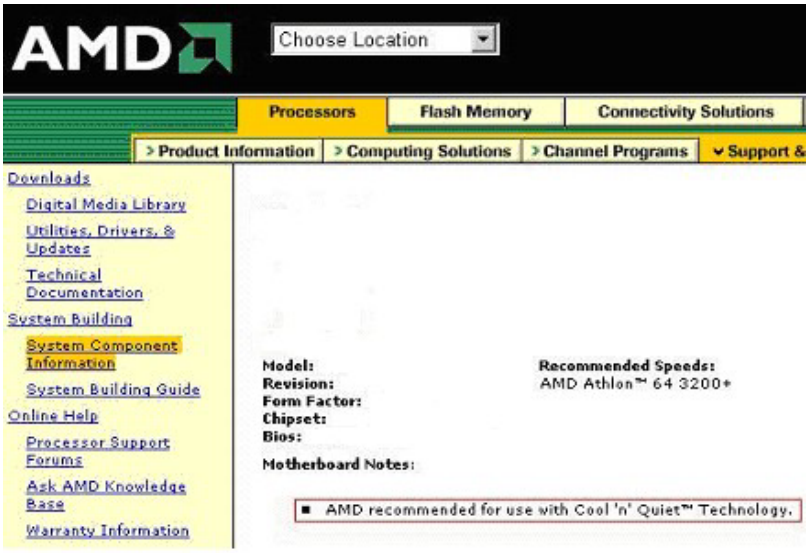
The ONLY Windows®-Compatible 64-bit PC Processor

2. Motherboard with BIOS recommended by AMD for Cool 'n' Quiet.

List of recommended motherboards and their respective BIOS for Cool 'n' Quiet are regularly updated on *www.amd.com*. Click on *AMD Athlon 64 Recommended Motherboards* on the *www.amd.com* front page, under the listing Technical & Support Resources. On some motherboards, Cool 'n' Quiet must be turned on in the BIOS Setup Options.

Choose your processor from this list here:

If your mainboard is in the list of 'AMD Athlon™ 64 Recommended Motherboards', you can click on the part number to find out more about it's Cool 'n' Quiet™ support.



3. Processor Driver / Cool 'n' Quiet software

Downloadable from *www.amd.com*. On the front page under Technical & Support Resources, click on *Utilities, Updates, & Chipset Drivers*. Next click on *AMD Athlon 64 Processor Utilities & Updates* in the right column under AMD Athlon 64 Processor.

If Windows® ME or Windows 2000 is used, the ***AMD Athlon 64 Cool'n'Quiet Software for Windows ME and Windows 2000, Version 1.0.1.7*** should be downloaded.

If Windows XP is used, the ***AMD Athlon 64 Processor Driver for Windows XP, Version (exe) 1.1.0.14*** should be downloaded.

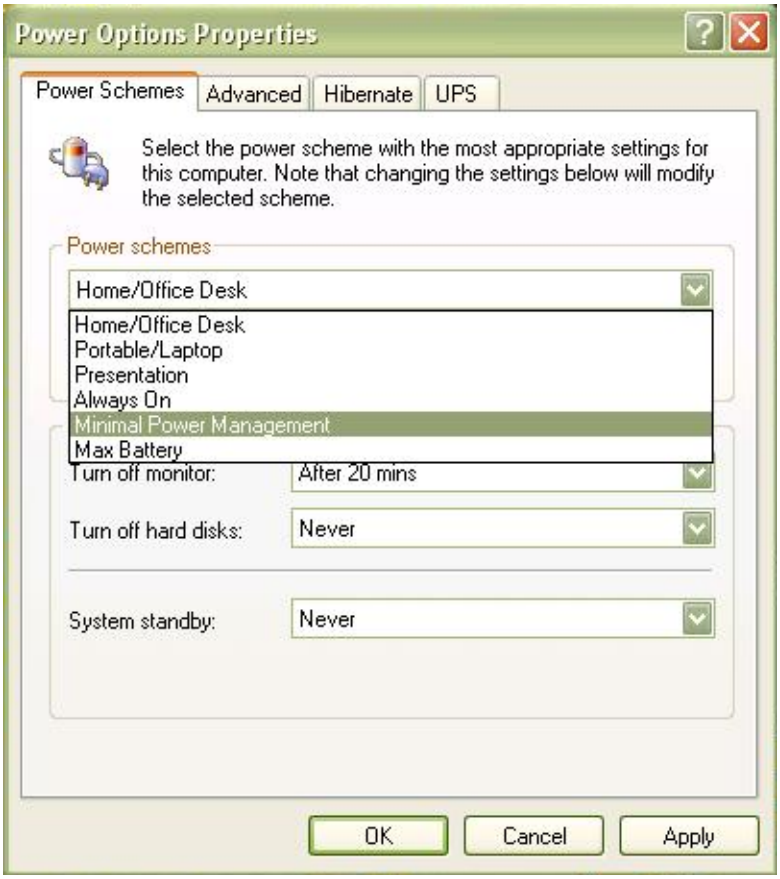
4. Required for noise reduction: Heatsink/fan capable of speed control

All AMD Athlon 64 Processor-In-A-Box packages include thermally controlled fans. A thermally controlled fan detects the current temperature of the processor using a thermistor, and when a lower temperature is detected the fan speed and noise is then reduced. Upon detection of a higher temperature the fan speed is resumed at full speed to appropriately cool the processor.

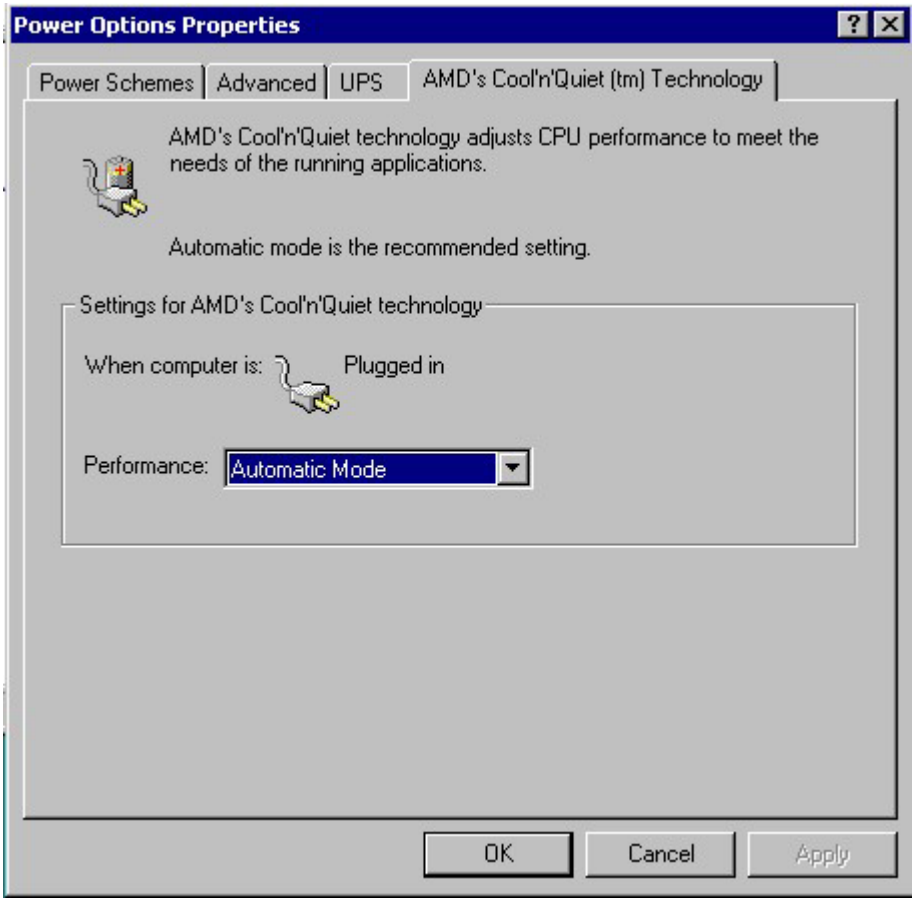
If an AMD Athlon 64 Processor-In-A-Box package is not used, an appropriate 3rd party heatsink with a thermally controlled fan must be used.

Enabling Cool 'n' Quiet™ Technology

To enable the Cool 'n' Quiet feature on a Windows XP system, you have to change the power scheme. Open the 'Power Options' from the Control Panel. Choose the power scheme 'Minimal Power Management' and click 'OK' to enable Cool 'n' Quiet.



On a Windows 2000 or Windows ME system, an AMD Cool 'n' Quiet tab will appear under Power Options when the Cool 'n' Quiet software for Windows 2000 and Windows ME is installed. This must be set to "Automatic Mode" for Cool 'n' Quiet to be enabled.



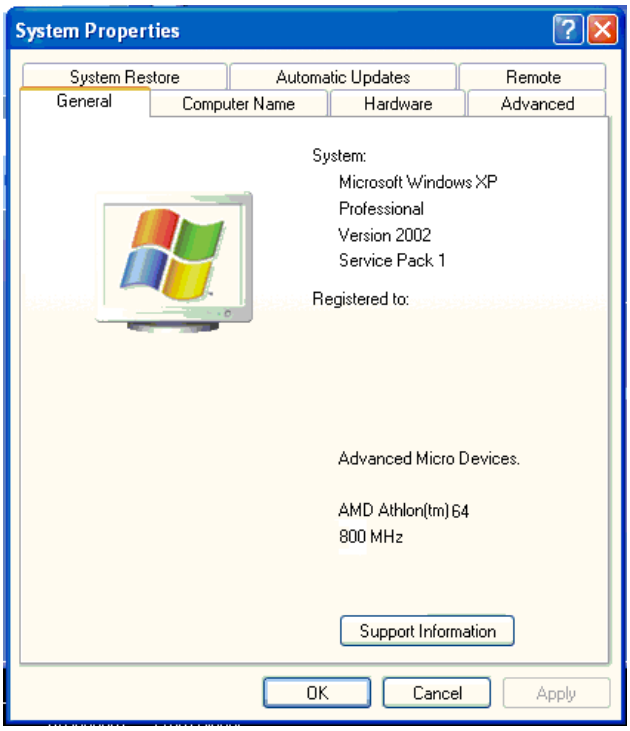
The process of enabling Cool 'n' Quiet technology is now finished.

Checking for Functionality

To check Cool 'n' Quiet functionality, a third party application that measures the current processor clock speed of the computer, such as WCPUCLK, can be used. Under Windows XP only, a built-in indicator of current processor frequency is included.

Checking for Cool 'n' Quiet functionality:

1. With no programs running with Windows at idle, start WCPUCLK or similar program.
2. If the displayed clock frequency is approximately 800 MHz, Cool 'n' Quiet is enabled and functioning correctly.

Checking for Cool 'n' Quiet functionality (Windows XP only):

1. Click on Start, and open up the Control Panel. Click on Performance and Maintenance, and then click System.
2. Under General, if the displayed clock frequency is approximately 800 MHz, Cool 'n' Quiet is enabled and functioning correctly.