Subject: *BUG+PATCH REPORTED* 2.6.20.12-ovz007.1 on AMD X2 AM2: cpufreq does not change freq
Posted by tobbi on Tue, 03 Jul 2007 13:03:26 GMT
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Hello,

here is what I did:

Hardware:
- Mainboard: Asus M2N-SLI Deluxe, chipset Nvidia nForce 570
- CPU: AMD Athlon64 X2 4600+ EE, socket AM2

Kernel:
- Fetched 2.6.20 vanilla from
  http://www.kernel.org/pub/linux/kernel/v2.6/linux-2.6.20.tar .bz2
- Applied patch-ovz007.1-combined from
  http://download.openvz.org/kernel/branches/2.6.20/2.6.20-ovz
007.1/patches//patch-ovz007.1-combined.gz
- Activated cpufreq with drivers powernow3d-k2 and ahci-p-states
- Activated CONFIG_ATA (new SATA/PATA framework), deactivated CONFIG_IDE (old
PATA/SATA framework)
- Deactivated modules (I compile everything in)
- Deactivated support for 32-bit binaries

- Booted from grub with root=/dev/sde2 vga=0x307
- Userland is Gentoo, pure 64-bit
- dmesg says that cpufreq found states for 2.4, 2.2, 2.0, 1.8 and 1.0 GHz
- disk i/o is fast (80 MB/sec for all sata drives)
- network performance is good (40..50 MB/sec on both gigabit interfaces)
- lm_sensors works, shows plausible temperatures and fan speeds
- CPU frequency is 2.4 GHz for both cores, as expected

Problem:
- Set cpufreq governor to "ondemand", both cores are 99.7..100% idle
- CPU frequency is still 2.4 GHz for both cores, but should be 1 GHz
- Set cpufreq governor to "userspace"
- Set frequency for both cores (cpu0 and cpu1) to 1 Ghz using scaling_setspeed
- CPU frequency is still 2.4 GHz for both cores, but should be 1 GHz

Questions:
- Doesn't ovz007.1 support cpufreq, or is it a bug, or did I overlook something?
- How can I get cpufreq to work?

I cannot use 2.6.18 because it's drivers don't support the nForce 570 SATA interfaces.
If needed, I can post /proc/config.gz and dmesg output tonight.
Thanks for help!

-- Tobbi

Subject: Re: 2.6.20.12-ovz007.1 on AMD X2 AM2: cpufreq does not change freq
Posted by ugo123 on Tue, 03 Jul 2007 13:19:27 GMT
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You may have the same problem that I have with my cheap motherboard and recent Linux kernels....

Check your dmesg if you have something like

powernow-k8: MP systems not supported by PSB BIOS structure
powernow-k8: MP systems not supported by PSB BIOS structure

That's my problem for about a year and I don't a real answer since then.....

Subject: Re: 2.6.20.12-ovz007.1 on AMD X2 AM2: cpufreq does not change freq
Posted by tobbi on Tue, 03 Jul 2007 14:01:47 GMT
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Thank you for your kind answer Ugo, but that's not it.

With vanilla 2.6.22 and a very similar kernel .config (difference only due to different kernel version and missing openvz), cpufreq runs fine on that machine.

Wait, now that I think about it, I should try 2.6.20.12 vanilla as well. But cpufreq and the powernow3d-k8 driver worked fine with 2.6.16 and 2.6.18 on an ECS Elite mainboard with AMD Athlon64 X2 4200+ on socket 939, which is not too far off. Hence I assume that vanilla kernels are all fine since 2.6.16 or earlier, and that my problem has something to do with the ovz007.1 patch.

Have a good time...

Subject: Re: 2.6.20.12-ovz007.1 on AMD X2 AM2: cpufreq does not change freq
Posted by ugo123 on Tue, 03 Jul 2007 14:09:04 GMT
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tobbi wrote on Tue, 03 July 2007 10:01Thank you for your kind answer Ugo, but that's not it.

With vanilla 2.6.22 and a very similar kernel .config (difference only due to different kernel version and missing openvz), cpufreq runs fine on that machine.

Wait, now that I think about it, I should try 2.6.20.12 vanilla as well. But cpufreq and the powernow3d-k8 driver worked fine with 2.6.16 and 2.6.18 on an ECS Elite mainboard with AMD

Athlon64 X2 4200+ on socket 939, which is not too far off. Hence I assume that vanilla kernels are all fine since 2.6.16 or earlier, and that my problem has something to do with the ovz007.1 patch.

Have a good time...

Ok, you're lucky then
For me it's since 2.6.13 or 2.6.14 (with vanilla kernels), I thought you had the same thing, but if it's working with vanilla 2.6.16 and 2.6.18, it's clearly not the same issue.

Subject: *BUG+PATCH REPORTED* 2.6.20.12-ovz007.1 on AMD X2 AM2: cpufreq does not change freq
Posted by tobbi on Thu, 12 Jul 2007 00:07:47 GMT
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With vanilla 2.6.20.12, cpufreq works perfectly on both machines:
- Asus mainboard with nForce 570 and socket AM2
- ECS mainboard with VIA K8T800 and socket 939
This proves that the problem is caused by patch-ovz007.1-combined.

I looked a little deeper, and came up with a hack for powernow-k8.c that makes the userspace governor work for me.

I filed the problem and my patch in bugzilla:
http://bugzilla.openvz.org/show_bug.cgi?id=643

Subject: Re: 2.6.20.12-ovz007.1 on AMD X2 AM2: cpufreq does not change freq
Posted by Vasily Tarasov on Thu, 12 Jul 2007 05:04:05 GMT
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Tobbi, thank you for the information, we will investigate the problem!

Vasily