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To: Mark 5 Development Group

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Subject: Voltage and Temperature Monitoring on Intel S5000 Boards

The S5000 Intel main boards in newer Mark 5 systems have an Intelligent Platform Management Interface, which lets you observe a whole host of hardware parameters, such as voltages and temperature. These systems may also allow remote resets, and other remote diagnostics.

With the Debian Etch operating system, this software is easy to install. On an Intel S5000 Mark 5, running Debian Etch with the 2.6.18 stock Etch kernel, as root:

```
# aptitude install ipmitool [Ignore errors.]
# /usr/share/ipmitool/ipmi.init.basic
[Ignore errors. See below for Debian Lenny.]
# ipmitool sdr | egrep "Temp|\+5V|12V"
BB +5V          | 5.15 Volts          | ok
BB +12V AUX     | 12.03 Volts        | ok
Baseboard Temp  | 42 degrees C       | ok
```

If the `ipmitool` command works, and produces useful output, all you need do it make it work after the next reboot is to add the `/usr/share/ipmitool/ipmi.init.basic` command to `/etc/rc.local`.

Note that you need to be root to use the `ipmitool` command, because it can do dangerous things, such as turn off the power.

You can also adjust the thresholds, for early warning of temperature and voltage issues:

```
# ipmitool -I open sensor thresh "BB +5V" lnc 4.75
Setting sensor "BB +5V" Lower Non-Critical threshold to 4.750
```

It is safe to try

```
ipmitool sensor [for detailed sensor information]
ipmitool sel [to display the System Event Log (SEL)]
ipmitool chassis status [to display the chassis status]
```

IPMI also has other features, such as watchdog checking for operating system crashes, but I have not tried any of them.

Debian Lenny has no `ipmi.init.basic` file.

Replace the `ipmi.init.basic` command above with these two commands:

```
modprobe ipmi_devintf
modprobe ipmi_si
```