

Controlling the IPm Status LED

Abstract:

This technical note describes the means by which the 'Status' LED on the face of an IPm controller may be turned on, off, or blinked with a user-defined on and off period.

Required Firmware

The feature is available in IPm firmware 1.9 and later.

Controlling the LED

The status LED is controlled by a file in the /proc file system. The /proc file system is a 'virtual' file system. Its files act almost like normal files, but are not stored as normal files would be. The files provide information and/or control for system features such networking, processes, memory and, in this case, the status LED.

Writing '1' (the ASCII character) to /proc/status_led turns the LED on, writing '0' turns it off. The /proc/status_led file may be read to determine the current setting for the LED.

A blink pattern can be specified using a number between 10000 and 99999999. The value is the off time in milliseconds times 10000 plus the on time in milliseconds. Each time can be up to 9999 milliseconds. For example, the value 3000700 will blink the LED off for 0.3 seconds (300 milliseconds) and on for 0.7 seconds (700 milliseconds).

The value is written to /proc/status_led as a character string. It is interpreted as it would be interpreted in a C program, so there should be no leading zeroes. "3000700" gives the 0.3/0.7 second blink mentioned above.

"03000700" is interpreted as an octal number, giving 786880 decimal. This is 0.078 seconds off and 6.88 seconds on, not at all the same thing!

The current blink pattern is available for reading (always as a decimal number) from /proc/status_led.

Sample Code

To turn the LED on with a shell command (from telnet, or with the ISaGRAF sxlaunch function block) use:

```
echo 1 >/proc/status_led
```

To turn the LED off use:

```
echo 0 >/proc/status_led
```

To set the LED to blink repeatedly with the pattern off for 0.5 seconds and on for 1.5 seconds use:

```
echo 5001500 >/proc/status_led
```

Application Example:

The 'sxbackup' sample ISaGRAF program, supplied by SIXNET for management of redundant controllers, uses this feature to indicate which controller is actively controlling the process.