

Porting of drivers/hwmon/scpi-hwmon.c

May 25, 2017

1 Introduction

The driver `drivers/hwmon/scpi-hwmon.c` was introduced in 2013 in the commit `ea98b29`. It adds support for SoC sensors exported by the System Control Processor (SCP) via the System Control and Power Interface (SCPI). This driver was accompanied by changes in Kconfig and a Makefile and a new documentation file. Gcc produces 1 warning.

2 `scpi_ops->sensor_get_value`, arg 2

Gcc reports that the field `FLD` of the structure `struct STR` is initialized to a value of the wrong type. We try the following patch query (`step1.cocci`):

```
// discard calls where the before and after arg lists are identical.
// can't require that the arg list size doesn't change, because it might go
// up and down, cf phy-exynos-mipi-video.c_069d2e2/step1.cocci

@bad depends on before || after@
expression list es;
@@

scpi_ops->sensor_get_value(es)

@depends on !bad && (before || after)@
expression e1,e2;
flexible expression list[1] es;
@@

scpi_ops->sensor_get_value(es,
- e1
+ e2
, ...)
```

This gives no results. Indeed, the patch query is badly constructed. `scpi_ops` should not be a concrete expression, but rather should be a metavariable of some type:

```
@bad depends on before || after@
struct scpi_ops *scpi_ops;
expression list es;
@@

scpi_ops->sensor_get_value(es)
```

```
@depends on !bad && (before || after)@
struct scpi_ops *scpi_ops;
expression e1,e2;
flexible expression list[1] es;
@@

scpi_ops->sensor_get_value(es,
- e1
+ e2
, ...)
```

This, however, still gives no result, not even for the current file.

Looking at the code, it seems that the argument that changes type, but the actual argument contents don't change.

=== failure for gcc-reduce and the approach