

Virtual gpio module for using together with ivshmem qemu

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maquefel removed gpiochip\_irqchip\_add usage for code cleanliness ...

on Sep 6, 2016

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[View code](#)

 README.md

## #DESCRIPTION

Virtual gpio with irq\_chip module for using together with ivshmem qemu

## #REQUIREMENTS

linux kernel 4.6 (or just headers)

qemu 2.5.1.1

## #COMPILATION

```
KDIR=${$PATH_TO_KERNEL_SOURCE_DIRECTORY} QEMU_DIR=
{$$PATH_TO_QEMU_SOURCES_DIRECTORY} make all
```

optional ARCH=\${\$ARCH} optional CROSS\_COMPILE=\${\$CROSSCOMPILER\_PREFIX}

## #USAGE

##WITHOUT INTERRUPTS

```
$ qemu-system-{$ARCH} (...) -device ivshmem,shm=ivshmem,size=1
```

guest machine:

```
# insmod virtual_gpio_basic.ko
```

```
# ls /sys/class/gpio/  
export          gpiochip248  unexport
```

```
# cat /sys/class/gpio/gpiochip248/label  
0000:00:0d.0
```

```
# cat /sys/class/gpio/gpiochip248/base  
248
```

```
# cat /sys/class/gpio/gpiochip248/ngpio  
32
```

```
# echo 248 > /sys/class/gpio/export  
# echo high > /sys/class/gpio/gpio248/direction
```

host machine:

```
$ xxd -b -l 2 -c 2 /dev/shm/ivshmem  
00000000: 00000001 00000001 ..
```

vg\_get\_set:

```
$ ./vg_get_set -r 0  
main:222:: read 0=1
```

```
$ ./vg_get_set -i 1  
main:239:: write 1=1
```

guest machine:

```
# cat gpio1/value  
1
```

## ##WITH INTERRUPTS

host machine:

```
$ ivshmem-server -F -v -l 1M -n 1  
$ qemu-system-{$ARCH} (...) -chardev socket,path=/tmp/ivshmem_socket,id=ivshmemid -d
```

guest machine:

```
# insmod virtual_gpio_basic.ko
```

```
# echo 248 > /sys/class/gpio/export
```

```
# echo 249 > /sys/class/gpio/export
# echo 250 > /sys/class/gpio/export
# echo rising > /sys/class/gpio/gpio248/edge
# echo rising > /sys/class/gpio/gpio249/edge
# echo rising > /sys/class/gpio/gpio250/edge

# ./vg_guest_client 248
gpio_chip:
    base: 248
    ngpio: 32
Added gpio 248 to watchlist.
Added gpio 249 to watchlist.
Added gpio 250 to watchlist.
Entering loop with 3 gpios.

host machine:
$ ./vg_get_set -p 6 -i 0 # get -p (peer id) from ivshmem-client
main:346:: write 0=1
main:349:: interrupt was enabled for 0
main:353:: interrupt was raised for 0
main:357:: rising edge interrupt was enabled for 0 and new value is high 1

guest:

VGPI0: interrupt (status = 0x0001, pending = 1)
VGPI0: interrupt (status = 0x0001)
VGPI0: interrupt (status = 0x0001)
gpio number=248 interrupt caught
```

## #COPYRIGHT

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### Releases 4

 v5.14-rc7 Latest

on Sep 20, 2021

[+ 3 releases](#)

### Packages

No packages published

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## Languages

● C 97.4%   ● Makefile 2.6%