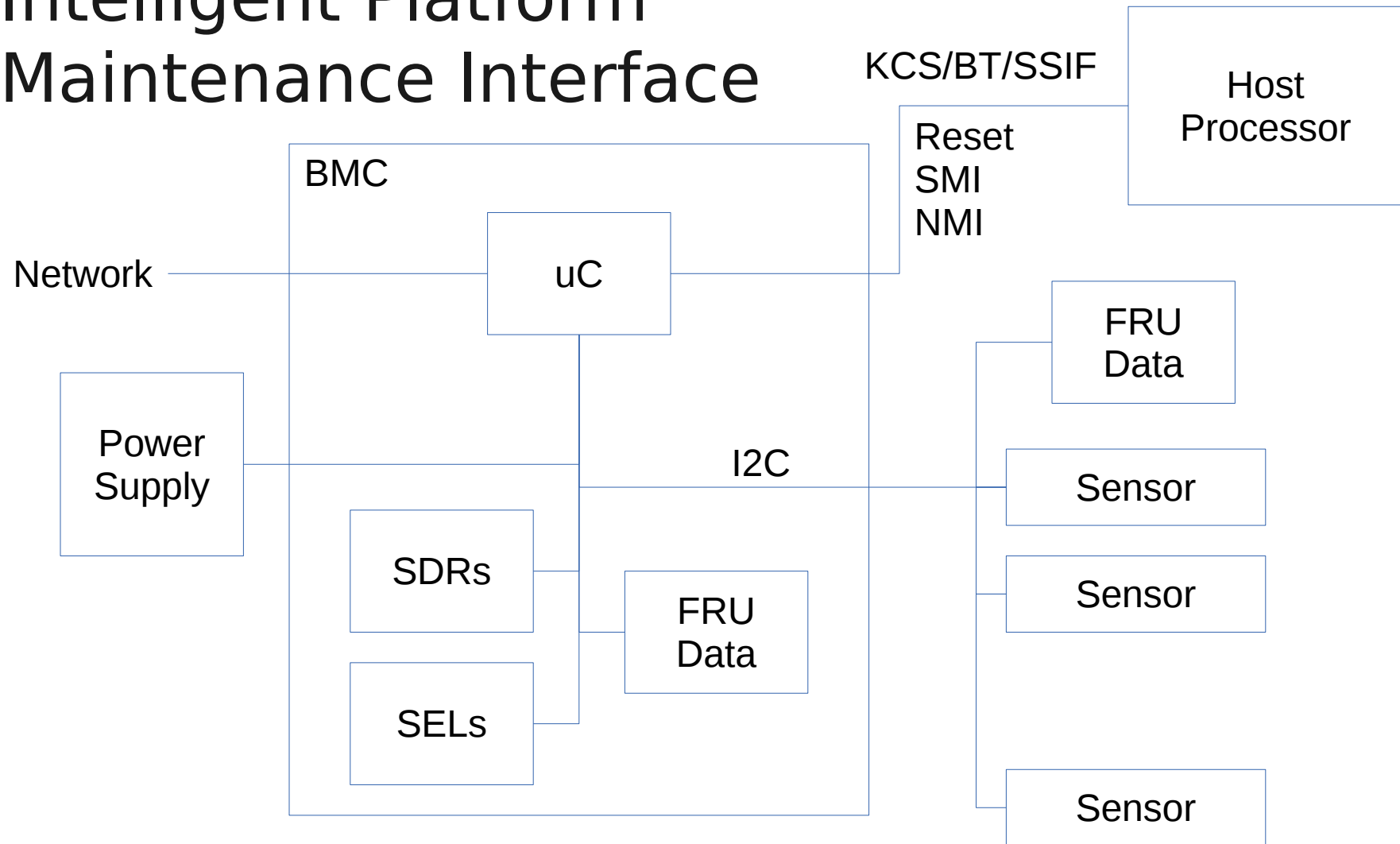# QEMU and IPMI
# KVM Forum 2015

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# What is IPMI?
# Intelligent Platform
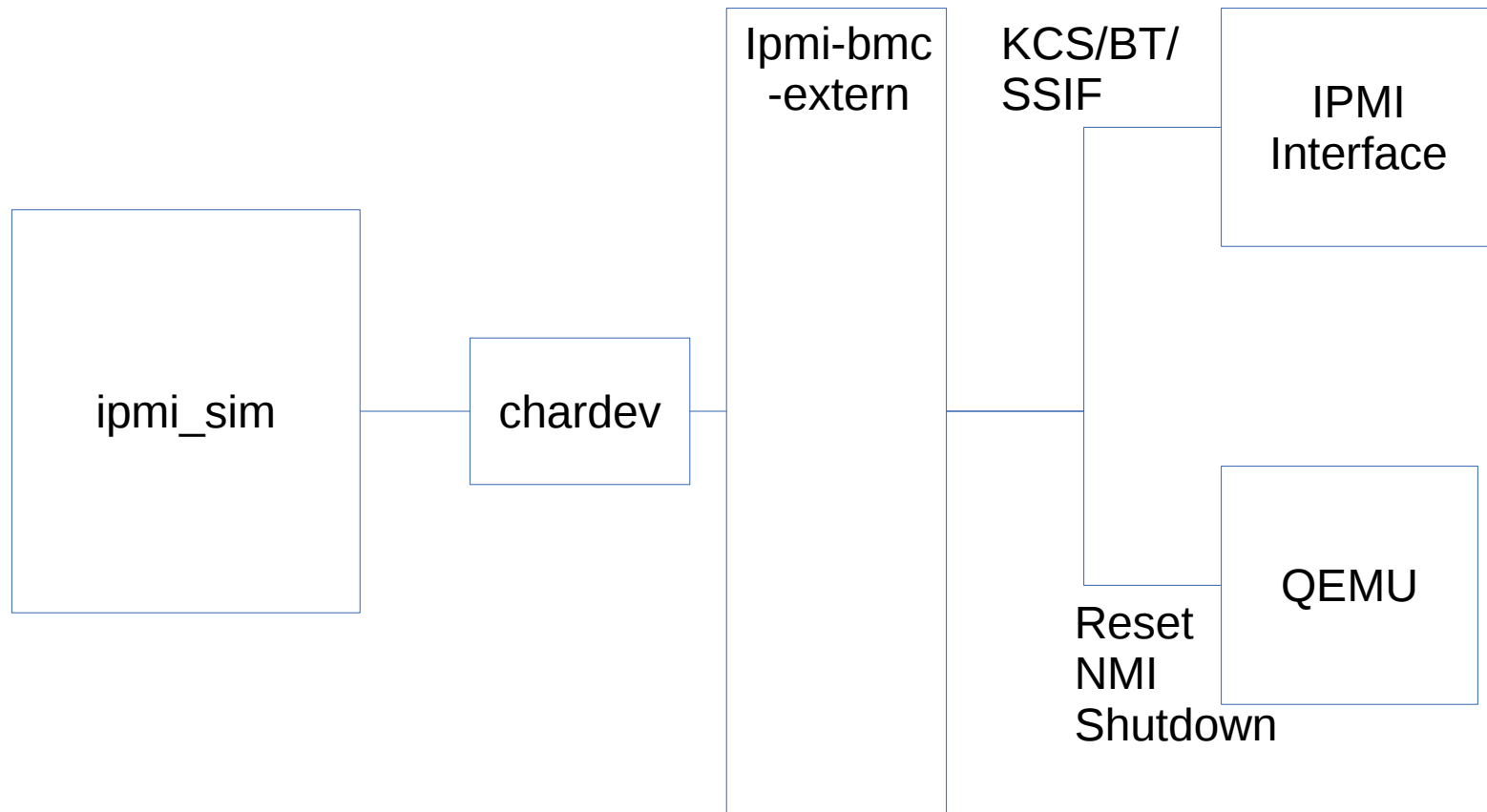# Maintenance Interface

# Two basic QEMU IPMI emulations
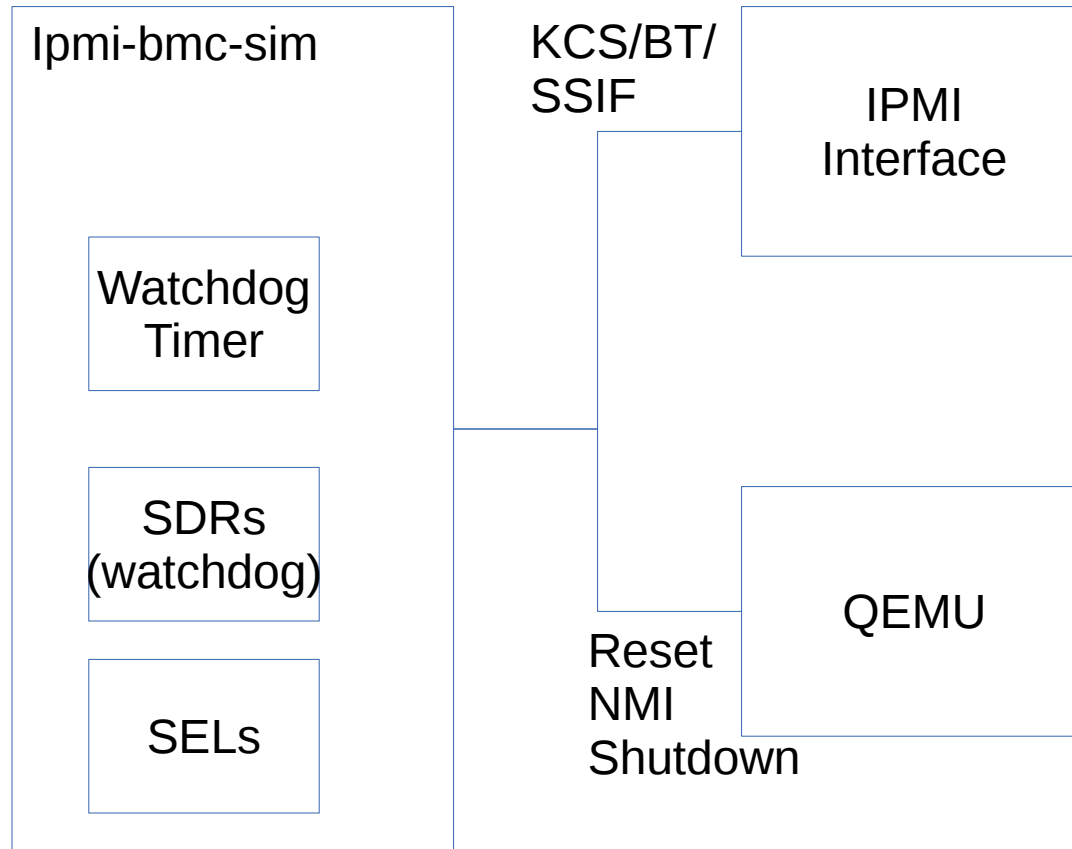
- ## Internal

  - Basic BMC inside QEMU

  - Supports very basic emulation and a watchdog timer

- ## External

  - Connects to an external BMC over a chardev

  - OpenIPMI ipmi_sim supports a fairly complete BMC emulation capability

# QEMU External BMC

# QEMU Internal BMC

Ipmi-bmc-sim

KCS/BT/
SSIF

IPMI
Interface

Watchdog
Timer

SDRs
(watchdog)

QEMU

SELs

Reset
NMI
Shutdown

# Why would I want to do this?

- Use existing management software to manage virtual systems.
- Simulate your system to cause events you could never reproduce in a real system.
- Allow the IPMI maintainer to reproduce bad hardware reported by others.
- Fool software that wants IPMI to be there
- Watchdog timer

# Starting a BMC in QEMU

- Create a BMC, normally done from ipmi_sim
    - -device ipmi-bmc-sim,id=bmc0

    - -chardev socket,id=ipmichr0,host=localhost,port=9002,reconnect=10
      -device ipmi-bmc-extern,chardev=ipmichr0,id=bmc0

- Attach the BMC to an interface
    - -device isa-ipmi-kcs,bmc=bmc0,irq=5

    - -device isa-ipmi-bt,bmc=bmc0,irq=0

# Demos

- Internal simulator with watchdog timer

- External simulator power management

- External simulator with watchdog timer

- External simulator setting sensor value

# What's left?

- Upstream the main code
- SSIF (later)
- Where to get it now?
  - https://github.com/cminyard/qemu
  - http://sourceforge.net/projects/openipmi

# Issues

- Security

- Users require extensive knowledge of IPMI to set up a BMC.  It takes a while to understand the IPMI spec.  (However, basic power management is pretty easy: http://apahim.livejournal.com/2395.html)