

Local process  
makes  
simulation  
request to  
kernel  
module

- Local process writes 'freeze' to `/sys/vt/VT7/mode`
- Sysfs calls registered module function `mode_store()`

Initiate  
distributed  
freeze routine

- Set GPIO pin 7 to output mode
- Send High signal on GPIO pin 7
- Hardware interrupt is triggered on rising edge

Freeze all  
virtual clocks

- Pause routine interfaces with virtual clocks
- Sends SIGSTOP to all processes

Synchronize  
with  
Simulator

- Coordinate with management server to resolve simulation request
- Place response in processes shared memory

Initiate  
distributed  
unfreeze routine

- Send Low signal on GPIO pin 7
- Hardware interrupt is triggered on falling edge

UnFreeze all  
virtual clocks

- Resume routine interfaces with virtual clocks
- Sends SIGCONT to all processes