

CPU model design

User space (qemu)

S390 CPU classes - part of Qemu Object Model

CPU_S390_2064_GA1
CPU_S390_2064_GA2

...
CPU_S390_2828_GA1 host
CPU_S390_2828_GA2

command line option [**-cpu** { help | host | <model> }]

2064-ga1
2064-ga2
...
2828-ga2
host

during **s390-virtio** initialization

s390_set_cpu_model()

during **s390-virtio** initialization

s390x_prepare_cpu_classes()

Kernel space (KVM)

part of kvm state

```
struct kvm_arch {  
    ...  
    struct kvm_s390_cpu_model {  
        *sie_fac  
        cpu_id  
        facilities  
        ibc  
    }  
}
```

initialized by means of

1. get_cpu_id()
STFLE
sclp_get_ibc()

8. used to setup vcpu
kvm_arch_vcpu_setup()

kvm attribute interface:

```
struct kvm_s390_vm_cpu_processor {  
    __u64 fac_list[256];  
    __u64 cpuid;  
    __u16 ibc;  
};  
struct kvm_s390_vm_cpu_machine {  
    __u64 fac_mask[256];  
    __u64 hard_fac_list[256];  
    __u64 soft_fac_list[256];  
    __u64 cpuid;  
    __u32 ibc_range;
```

kvm_s390_fac_list_mask[]
kvm_s390_get_hard_fac_list()
kvm_s390_get_soft_fac_list()
get_cpu_id
sclp_get_ibc()

4.

5.

6.

2.

7.

8.