SEV TIO

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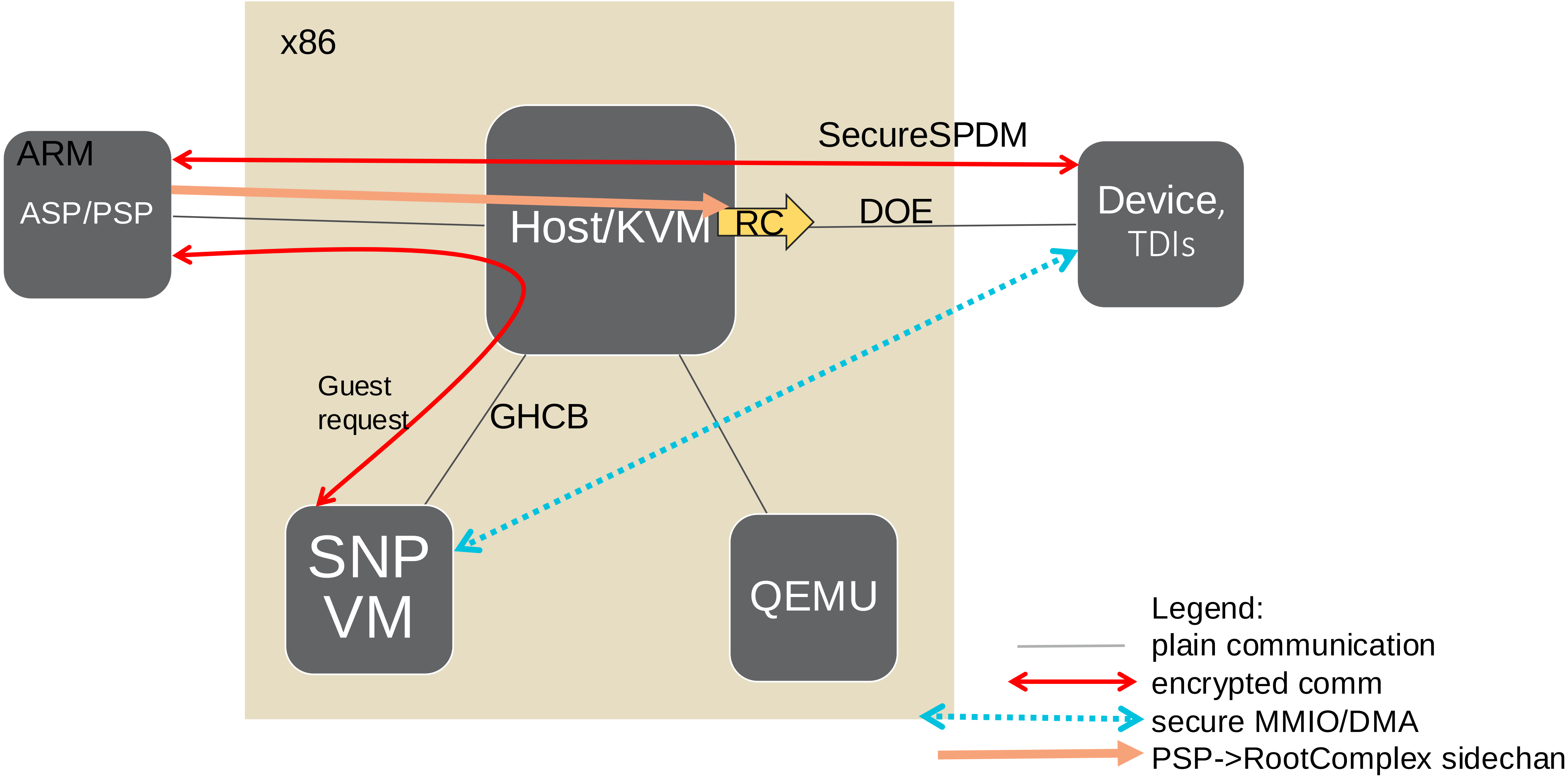
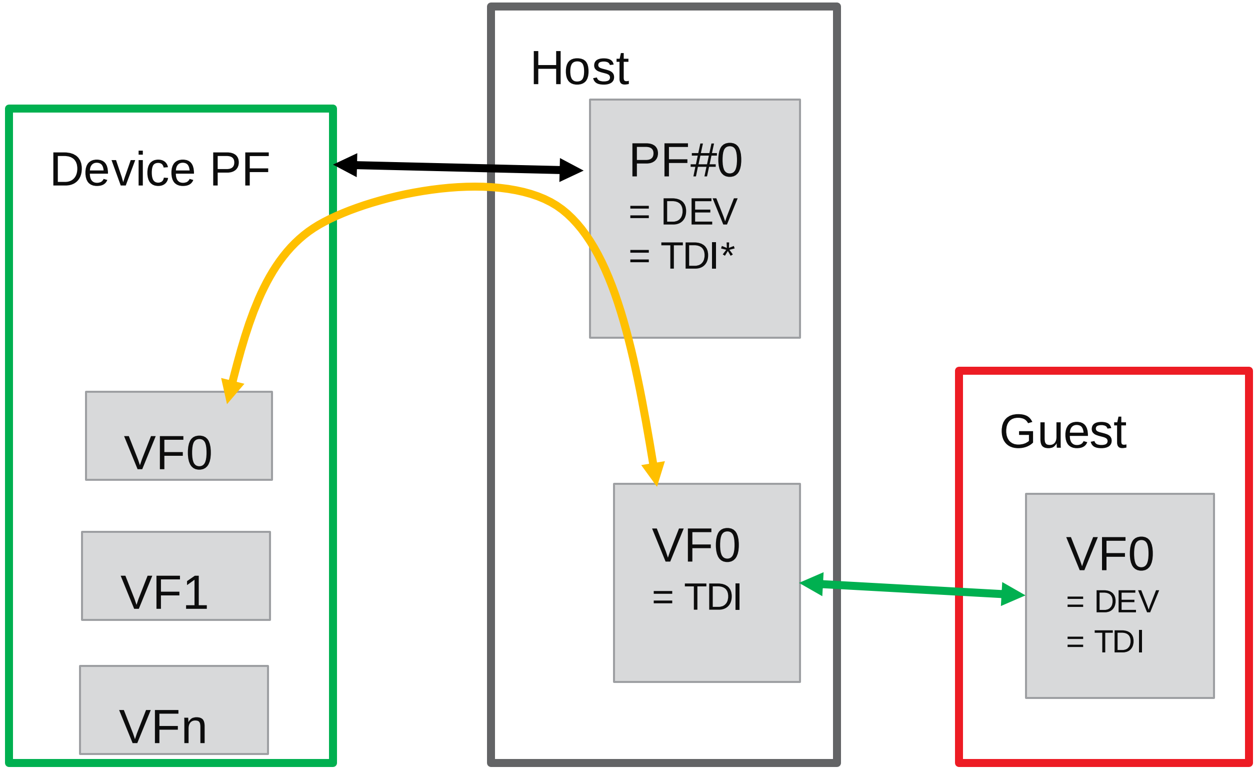
Configuring IDE/TDISP on AMD SEV SNP



TSM module (coordinating upstream, AMD view)

- Allocates per device data
  - DEV: DOE, SPDM, IDE, measurements, certs
  - TDI: TDISP, report, references DEV
- CMA + IDE
  - HostOS
    - DEV_CONNECT (sysfs)
    - DEV_DISCONNECT (sysfs)
- Pass through (VFIO)
  - HostOS
    - TDI_BIND (KVM) => LOCK, RUN, BIND PREPARE (?)
    - TDI_UNBIND (KVM ioctl)
    - TDI_GUEST_REQUEST (?)
  - GuestOS
    - Guest initiated TDI_LOCK, TDI_RUN (?)
    - TDI_VALIDATE (short for "pvalidate" instruction) (?)
- Common
  - TDI_STATUS (sysfs)
  - Certificates/measurements/report, share sysfs with CMA (?)



Legend:
(?): "do we need this"
VERB: verbs to implement
TDI*: meaningful only when not SRIOV

TEE: Trusted Execution Environment
TDISP: TEE Device Interface Security Protocol == "Secure VF"
IDE: Integrity and Data Encryption == "Encrypted PCIe link"
CMA: Component Measurement and Authentication == "Authenticated device"
SPDM: Security Protocol and Data Model == "Secure config space access"
DOE: Data Object Exchange == "PCIe config space blob"

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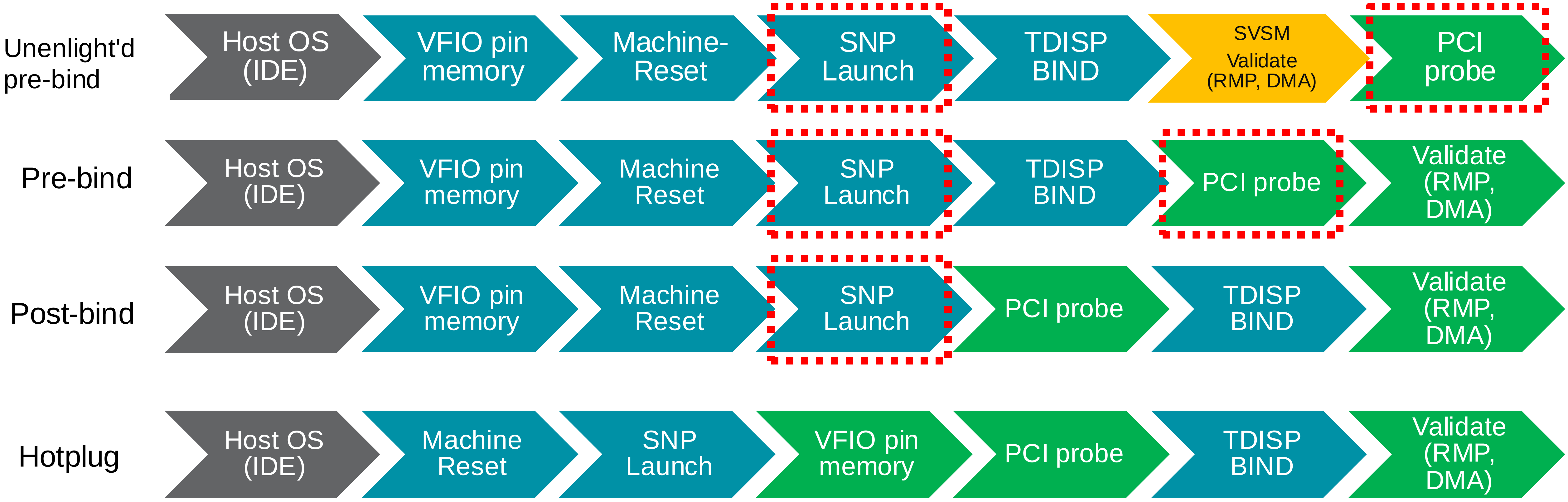
Enlightenment + pre/post/hotplug-bind



Unenlight'd pre-bind	Host OS (IDE)	VFIO pin memory	Machine-Reset	SNP Launch	TDISP BIND	SVSM Validate (RMP, DMA)	PCI probe
Pre-bind	Host OS (IDE)	VFIO pin memory	Machine Reset	SNP Launch	TDISP BIND	PCI probe	Validate (RMP, DMA)
Post-bind	Host OS (IDE)	VFIO pin memory	Machine Reset	SNP Launch	PCI probe	TDISP BIND	Validate (RMP, DMA)
Hotplug	Host OS (IDE)	Machine Reset	SNP Launch	VFIO pin memory	PCI probe	TDISP BIND	Validate (RMP, DMA)

Host/KVM QEMU SVSM GuestOS

IDE == PCIe link encryption
Validate (RMP, DMA) == tell PSP to enable secure MMIO + DMA

Questions:

1) How much of guest enlightenment
2) Sequencing

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