Secure Storage Service for IaaS Cloud Users

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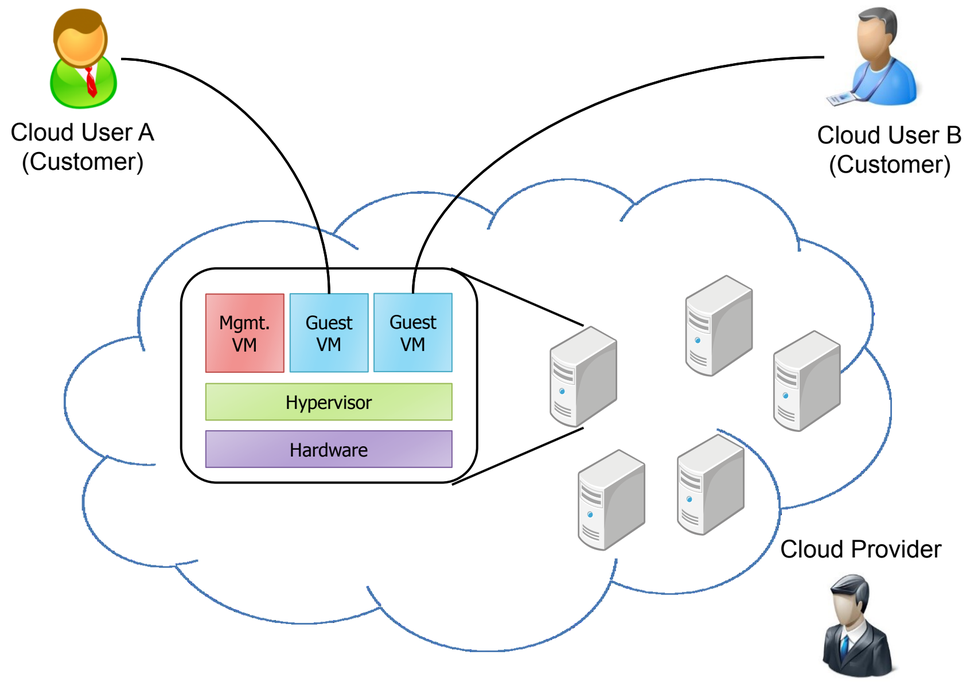
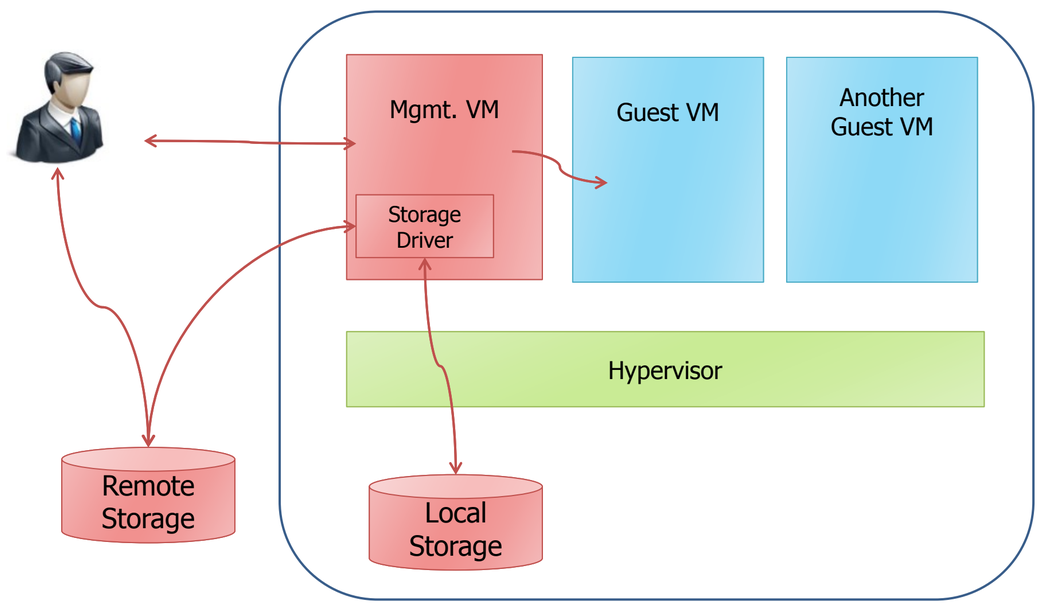
Background



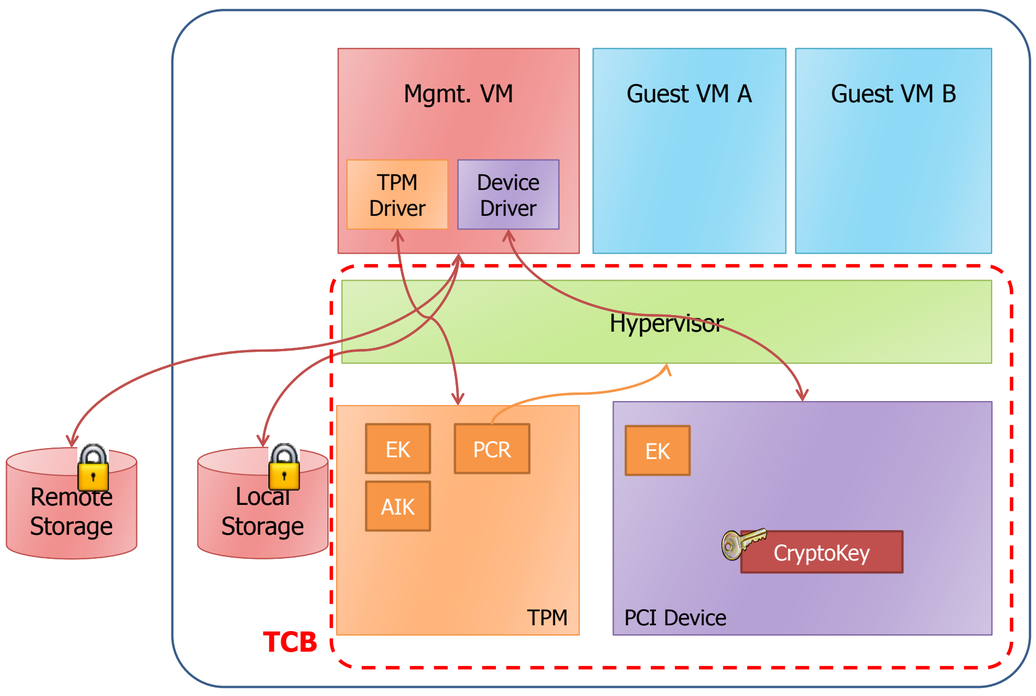
- IaaS
  - A type of cloud computing model, where cloud providers offer virtual machines including processing, network, and storage
- Challenging problems in IaaS cloud computing
  - Security concern
    - Attacks from the Internet
    - Attacks from the cloud environment

Threat Model

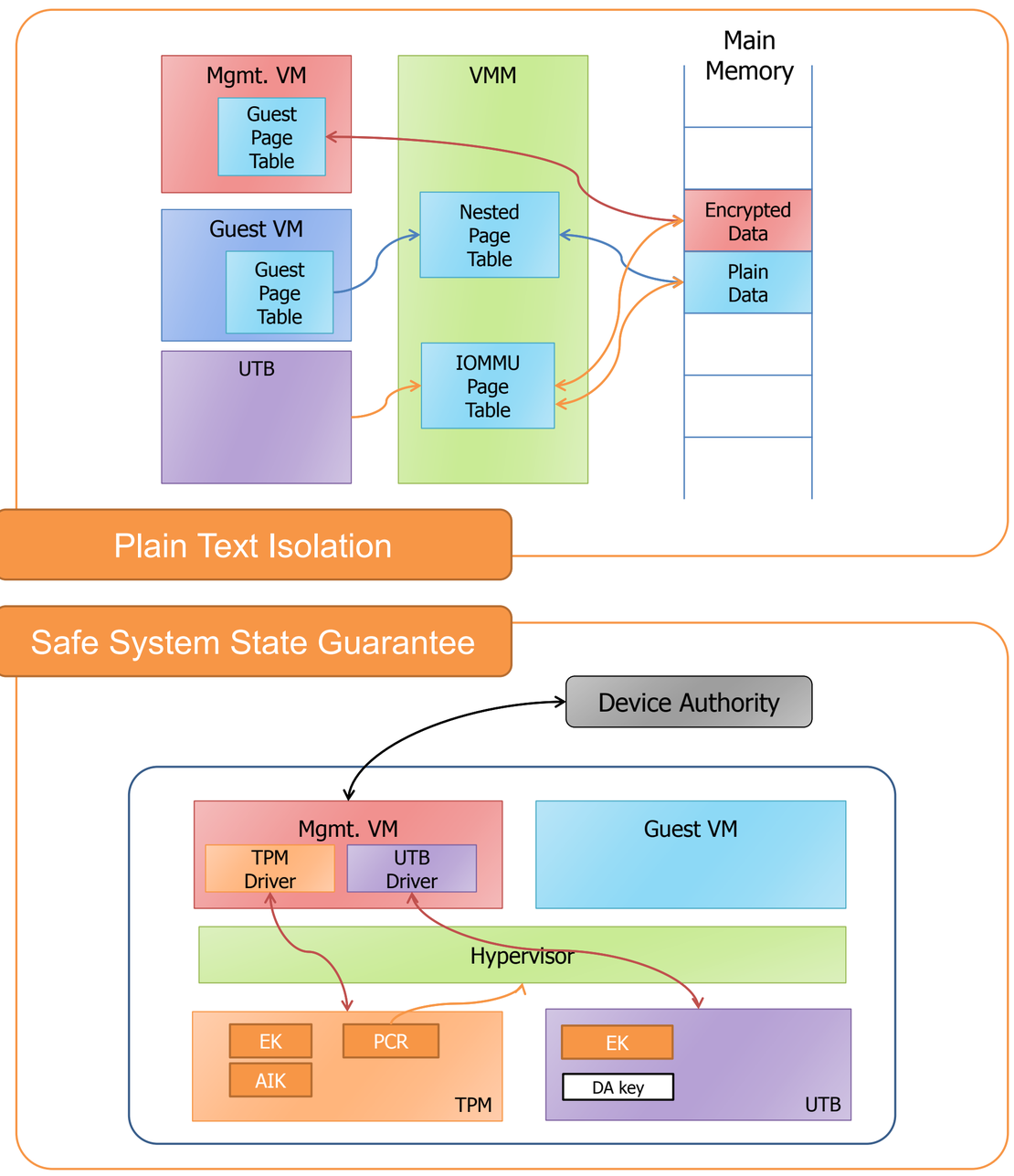


- Privileged access by a rogue administrator or a remote hacker
  - Illegal access to remote / local storages
  - Illegal access during cryptographic operations

Design Overview



- PCI typed crypto-processor
  - Cryptographic key storage
  - Isolated cryptographic operations
- Challenges
  - Plain text isolation
    - Plain text should not be loaded in mgmt. domain memory
  - Safe system state guarantee
    - Attempt to decrypt with illegal SW



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