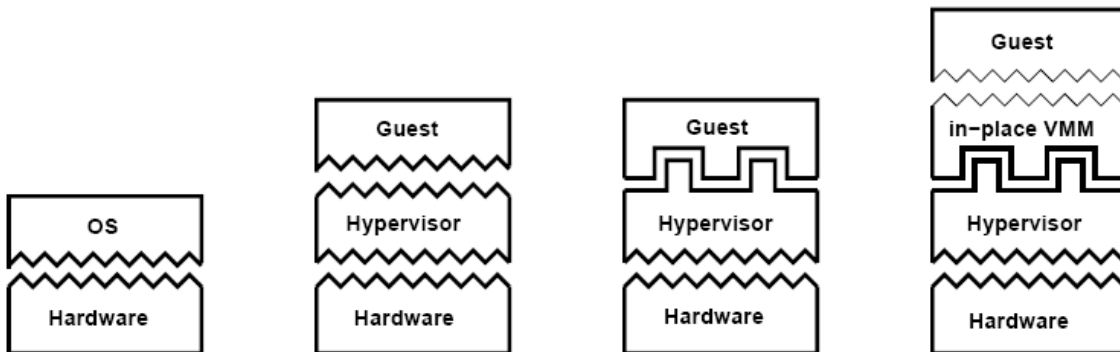


## Hardware based Virtualization

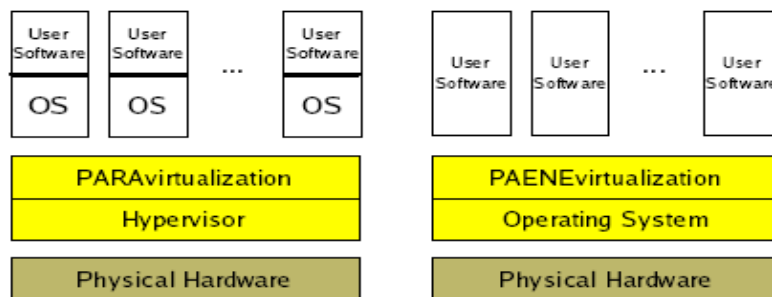
- Full Virtualization:  
No modification to Guest OS  
VMM (VM monitor) or Hypervisor provides H/W resources transparently  
(e.g., Oracle Open Source Virtual Box)
- Para Virtualization:  
Guest OS needs to be modified since VMM provides about 50% of H/W resources transparently
- Pre Virtualization:  
Guest OS does not need to be modified (transparency is provided by in-place VMM)



Performance debate between Full vs Para vs Pre Virtualizations in terms of consolidation, isolation, aggregation, and execution efficiency

## OS based virtualization

Paene virtualization is OS based virtualization with zone (or container) concept for resource isolation, name space isolation, security isolation, and fault isolation



Java Virtualization is language based virtualization