

Virtual Machines -Advantages

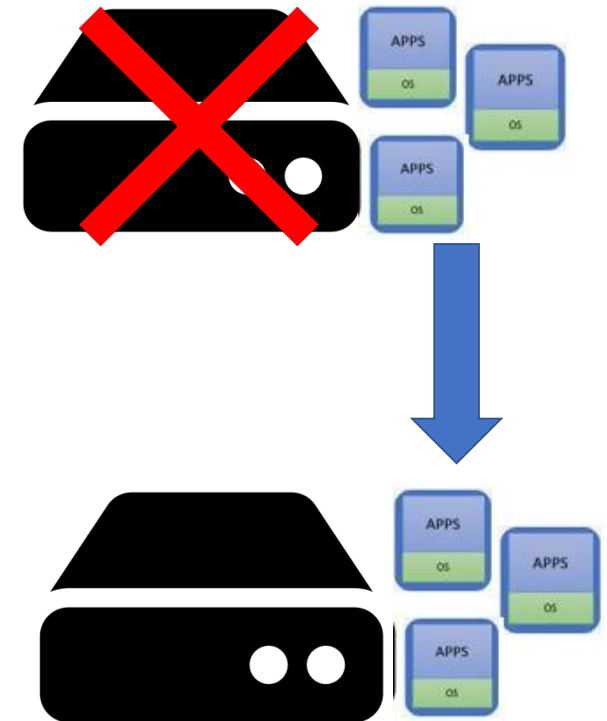
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Advantages: Optimise resources

- Use the resources you need, no more no less(e.g. memory, no. of processors, hard drive size).
- Can configure some Hypervisors to dynamically optimise a Virtual Machine automatically
 - e.g. allocate more memory if needed or remove memory if not needed
- Using Hypervisor, can easily scale up/scale down resources allocated to VM
 - e.g. commercial web sites will have increased traffic at certain times such as Christmas.

Advantages: Portability/Increased availability

- What if a host machine is having problems and needs to be taken offline...
- Virtualisation enables Live Migration:
 - You can move all the running Virtual machines on a host to a different host
- End user should not notice
- Advanced feature – not all hypervisors do this
 - Usually requires planning



Advantages: Disaster Recovery

- Most Hypervisors allow you to save the state of a virtual machine
 - Often known as a "snap shot"
- Can use the snap shot to return the VM to that state.
- Take snap shot before doing something big (e.g. install service pack, new drivers etc.)
- Can always revert/roll back to snapshot if it's a disaster.
- Snap shots are a copy of the virtual hard drive
 - Takes a lot of space – get rid if not needed



Advantages: Energy

- Running less hardware usually means less power consumption
 - Virtualisation, by its nature, does this
- Hypervisors, through optimisation, can save energy
 - e.g. slow down processor if not required.
- Some hypervisors monitor and report energy use
 - Can be used for data center analysis and optimisation

