Hypervisor and relation with cloud

- Hypervisor is a software which creates virtual machine by virtualizing hardware resources.
- Hypervisors are of two types
    - Type I Hypervisor:
        - This we directly install on Phyiscal server (HOST) and then create virtual machines (Guest) in it
        - This acts as operating system on Physical server
        - Example: VmWare Esxi
- Type II Hypervisor:
    - This will be installed on the Existing operating system of Physical server
    - This software on OS will create guest vms.
    - Example:
        - Vmware Workstation
        - Virtual Box
        - Hyper V

Which Hypervisor does

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- Azure Use?
    - Hyper-V
- AWS Use?
    - Xen
- GCP Use?
    - kvm

Cloud uses hypervisors to create virtualizations and it also has orchestration mechanisms, multi user modules, billing modules to support pay as you go.

- AWS training
- Cloud will not always give direct access to guest vms, you might be getting indirect access.
- Public Cloud:
    - This is hosted by an organization (CSP) so that any organization or individual can create cloud account and use the hardware indirectly with the help of services
    - Multi-tenant model
    - Example:

        - Qualitythought uses AWS to run test applications
        - LearningThoughts uses Azure to run its application workloads
- Private Cloud:
    - This is hosted by an organization for the other teams in the seams organization can use cloud services
    - Example:
        - Openstack
- Hybrid Cloud:
    - Combination of Public + On-premise

Public Cloud

- We have 3 major players
    - AWS
    - Azure
    - GCP
- We need to understand pricing model
    - OnDemand:
        - No commitments
        - hourly billing
        - billing for virtual machine only if it is running
    - Reservations
        - long term commitments (1 year or 3 years)
        - get upto 72% discount
        - billing for virtual machine whether it is running or shutdown
    - Spot discounts
        - upto 90% discounts
        - but when demand increases for on-demand or reservations we will pull virtual machines from customers.
        - billing continues until you delete the virtual machine