Cloud Computing Exam

Set-D

Sayam Kumar
S20180010158
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Q-1 (a) Private Cloud

Private cloud are the cloud services ~~exe~~ exclusively used, managed, and operated within an organization. All the servers usually reside in organization premises.

Advantages

1. Full security
2. Most functionality into the hands of organization
3. It can be customized to any extent.

Limitations

1. Involves more costs
2. Organizations need experts to maintain and build private clouds
3. Limited interaction with other cloud/time consuming.

Ans (b) Selection criteria for private cloud deployment

1. When organizations have sufficient funds
2. When dealing with sensitive data and security is important
3. There are few resources required.
4. ~~Sel~~ Need to support only few users.
   Eg: some special service for their premium users.

Q-2 (a) Intercloud is the mesh or group clouds that interacts with each other on open standard protocols. It is an idea to seamlessly connect data-centers and meet demand of services

Benefits

1. It is highly scalable to support wide variety of services
2. There is interoperability i.e. information can be easily shared and pooled.
3. It is more geographically available
4. Better collaboration and mutual sharing of resources.

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(4) Federated and Multicloud

Federated → These are a group of cloud providers willingly interconnect with each others to share resources

1. It is all voluntary contribution
2. It is best suited for collaboration in govt and private clouds
3. Where there are similar organizational requirements

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Multi Cloud → It is a platform/service where multiple independent clouds are grouped together.

1. It is not voluntarily maintained (as in federated)
2. Useful for utilizing many services and have sufficient funds
3. Ability to choose best multi cloud providers. Many choices.

Q-3

Full Virtualization

1. It is a type of CPU virtualization that uses binary translation and is run in isolation by virtualization layer
2. It is simulated hardware created by the host
3. It is less secure (as guest is unaware of host)
4. It has slower performance because guest and host run independently.

Para Virtualization

1. No privileged instructions are run by the guest OS and host OS is aware of guest.
2. It adjusts the drivers accordingly to better serve the guest.
3. It is more secure and reliable
4. It has higher performance because it caches the result of binary translation

Sayam Kumar
S20180010158
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Full	Para
(5) Difficult to install new drivers	(6) Ease of building custom apps.
(6) Guest OS use hardware operations directly	(6) Guest OS communicate with hypervisor using recompiled drivers
(7) It is less secure as there is no distinction of priviledged and sensitive instructions.	(7) It is more <u>secure</u>
(8) Can Run multiple OS simultaneously.	(8) Can to form a better cohesive unit to better pool resources.
(9) Eg→ Microsoft and Parallel systems	(9) Eg→ VMware, VirtualBox and Xen.

Sayam Kumar
S20180010158

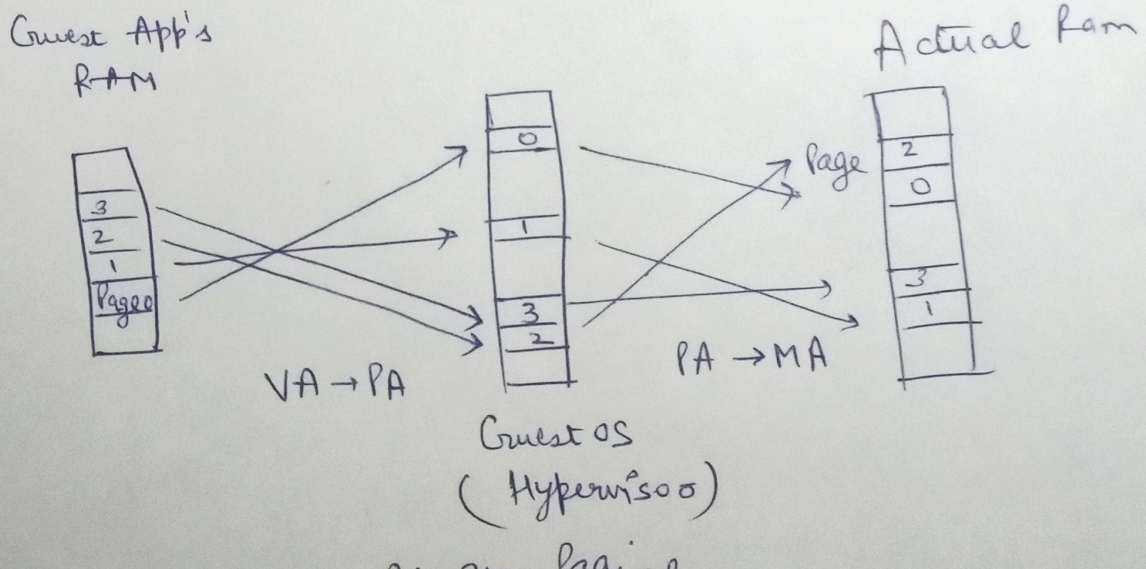
Q-4

Ans→ Requirement for two level indirection for memory virtualization

In order to serve multiple users with efficient sharing of resources and optimise virtual memory performance, we need a two level indirection. Guest OS has no idea about Machine Address (MA) so it only continues to build page tables for

Virtual Address ⟶ Physical Address mapping

Eg→ of a two level indirection



2 way Paging

Ans-4 Continued..

Legacy hardware cannot handle because Guest OS is only aware of VA → PA. It can lead to uneven distribution of RAM to users. Also legacy hardware cannot handle and not provide better performance and this will be lead to wastage of resources.

Thanks