SNS COLLEGE OF ENGINEERING

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Accredited by NAAC-UGC with 'A' Grade
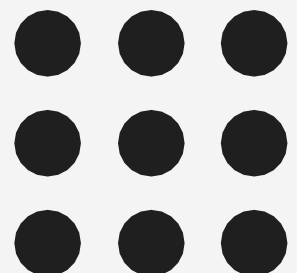**Approved by AICTE, Recognized by UGC & Affiliated to Anna University, Chennai**

Department of Information Technology

Course Name – CS8791 Cloud Computing

IV Year / VII Semester

Unit 3 – Cloud Architecture, Services and Storage

## Topic 5 – Infrastructure as a Service

IaaS

- Offering virtualized resources on demand
  - computation,
  - storage, and
  - Communication

  - users to use virtualized IT resources for computing, storage, and networking.

  - the service is performed by rented cloud infrastructure.

  - The user can deploy and run his applications over his chosen OS environment.
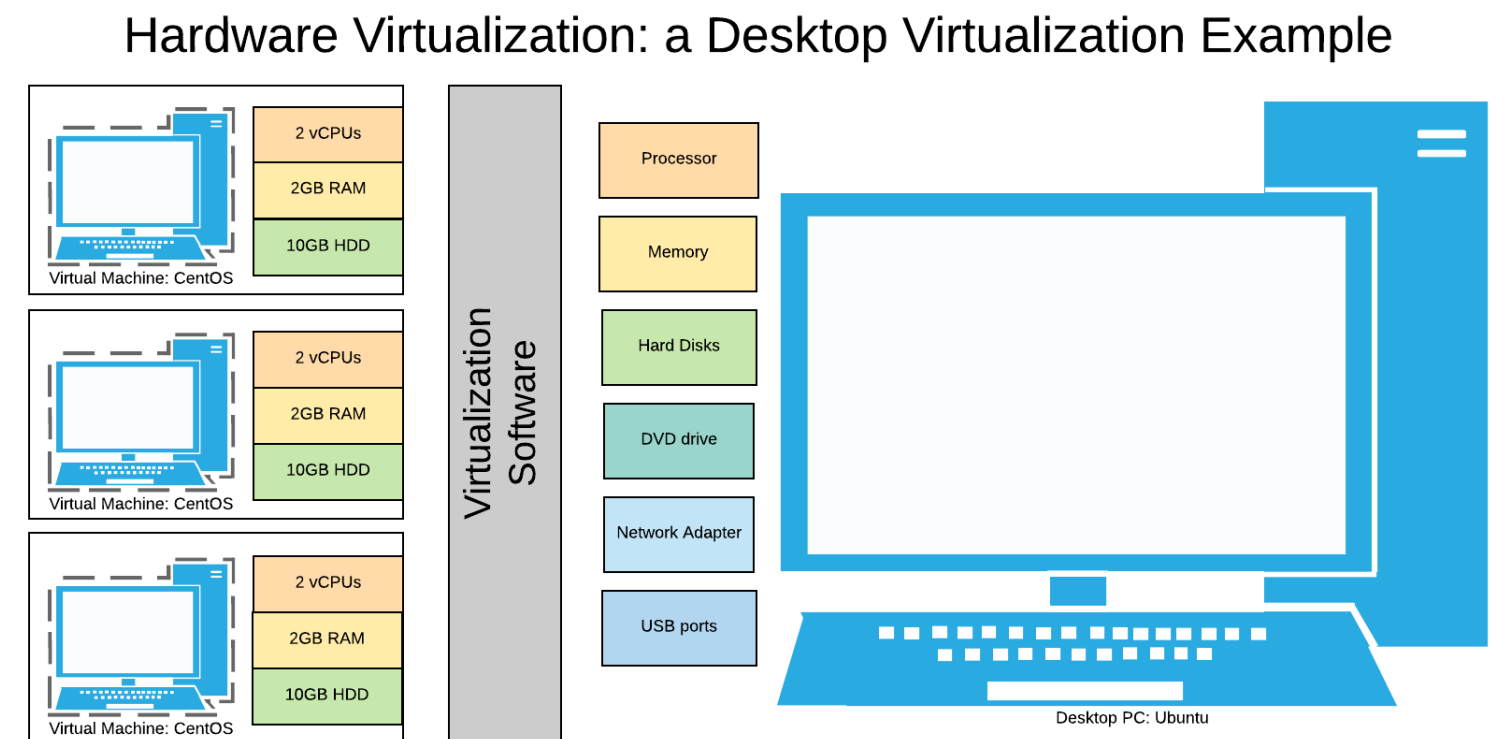

Infrastructure as a Service (IaaS)
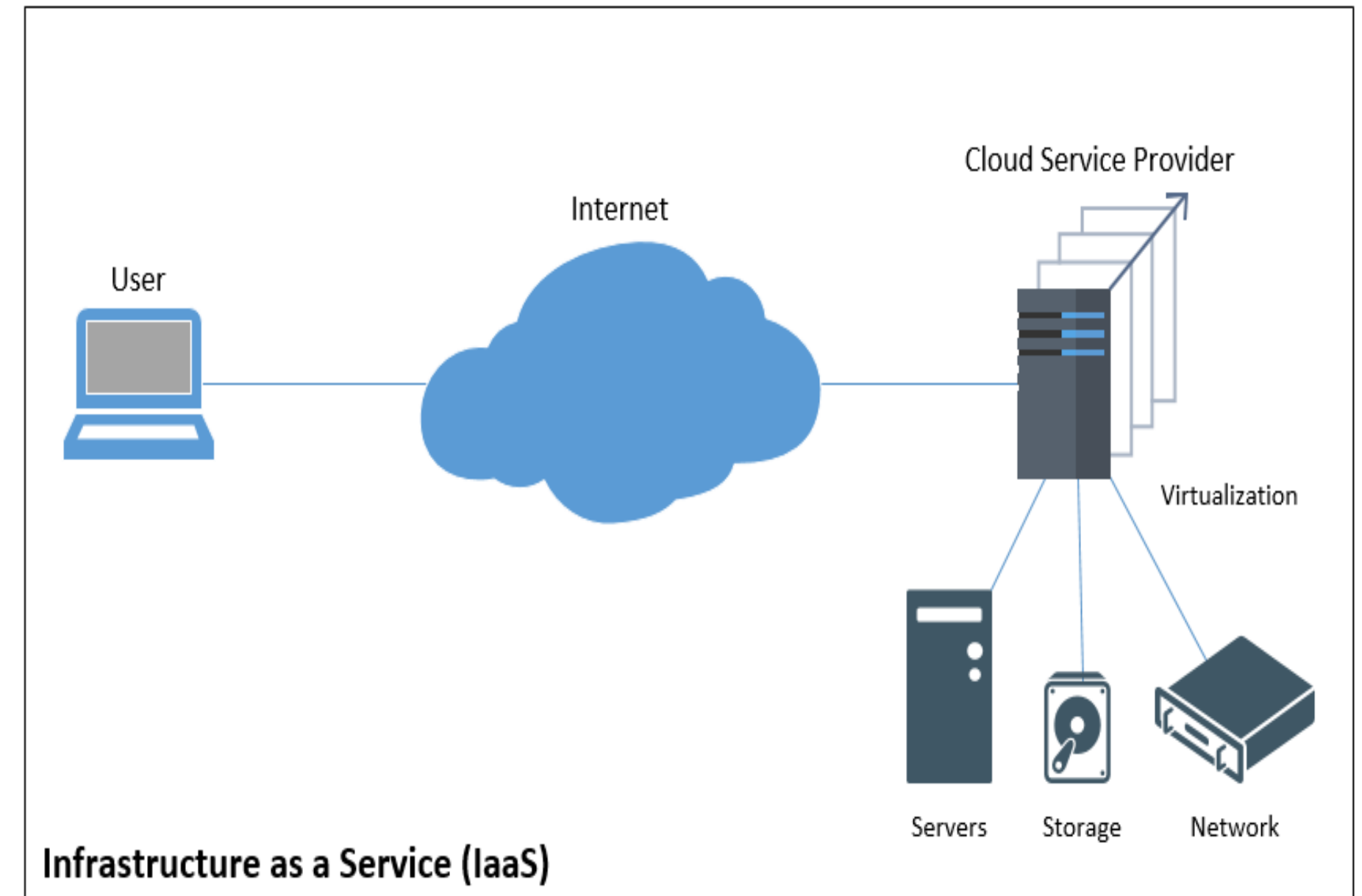
IaaS

Offering in IaaS

- computing infrastructure,

- Physical or (quite often) virtual machines and

- virtual-machine disk image library,

- block and file-based storage,

- firewalls,

- load balancers,

- IP addresses,

- Virtual local area networks etc.
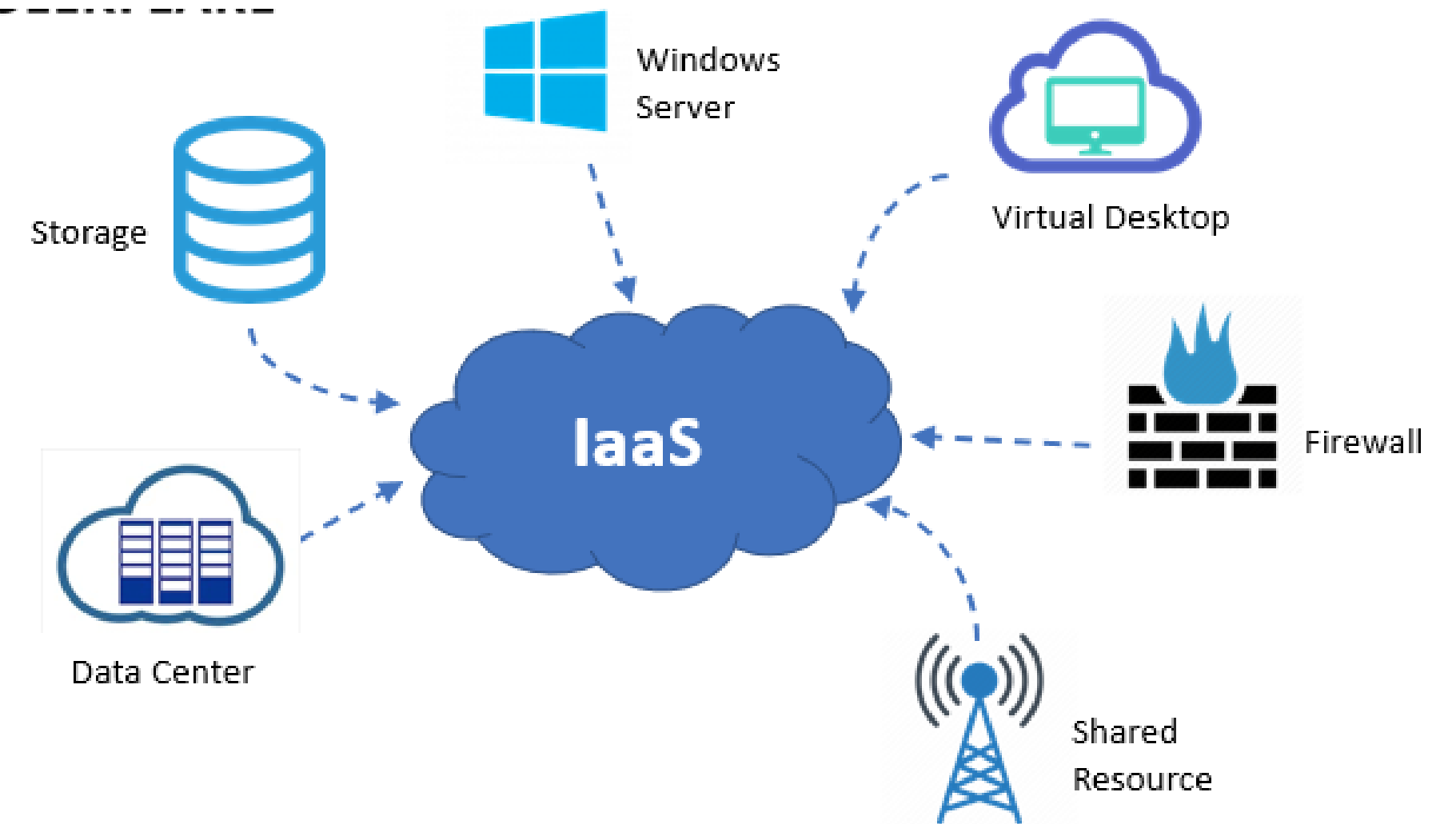
IaaS

- The main technology used to deliver and implement these solutions is hardware virtualization.

- IaaS/HaaS solutions bring all the benefits of hardware virtualization: workload partitioning, application isolation, sandboxing, and hardware tuning.

- From the perspective of the service provider, IaaS/HaaS allows better exploiting the IT infrastructure and provides a more secure environment where executing third party applications.

- From the perspective of the customer it reduces the administration and maintenance cost as well as the capital costs allocated to purchase hardware.

Hardware Virtualization: a Desktop Virtualization Example

IaaS

It is possible to distinguish three principal layers:

- the physical infrastructure,

- the software management infrastructure, and

- the user interface.
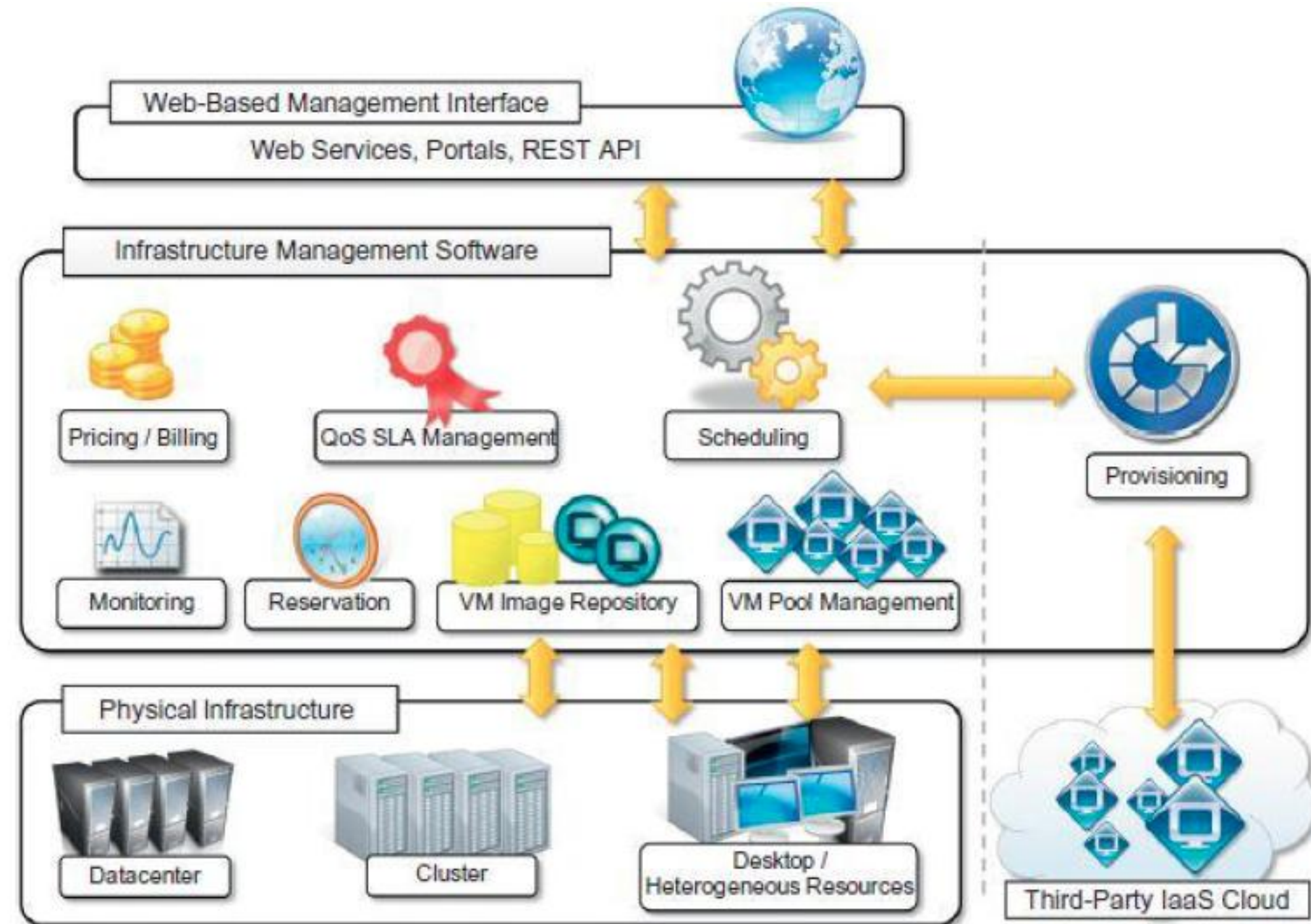
IaaS

User Interface
user interface provides access to the services exposed by the software management infrastructure.

Based on Web 2.0 technologies:

- Web services,

- RESTful APIs, and

- mash-ups.

IaaS

- The core features of an IaaS solution are implemented in the infrastructure management software layer

- In particular, management of the virtual machines is the most important function performed by this layer.

- A central role is played by the scheduler, which is in charge of allocating the execution of virtual machine instances.

- The bottom layer is composed of the physical infrastructure, on top of which the management layer operates.

IaaS

- In the case of complete IaaS solutions, all three levels are offered as service.

- This is generally the case with public clouds vendors such as

- Amazon,

- GoGrid,

- Joyent,

- Rightscale,

- Terremark,

- Rackspace,

- ElasticHosts, and

- Flexiscale

THANK YOU