

Grid & Cloud Computing Introduction

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- **Common Definitions**
- **Terms/Factors**
- **Difference between Grid and Cloud**

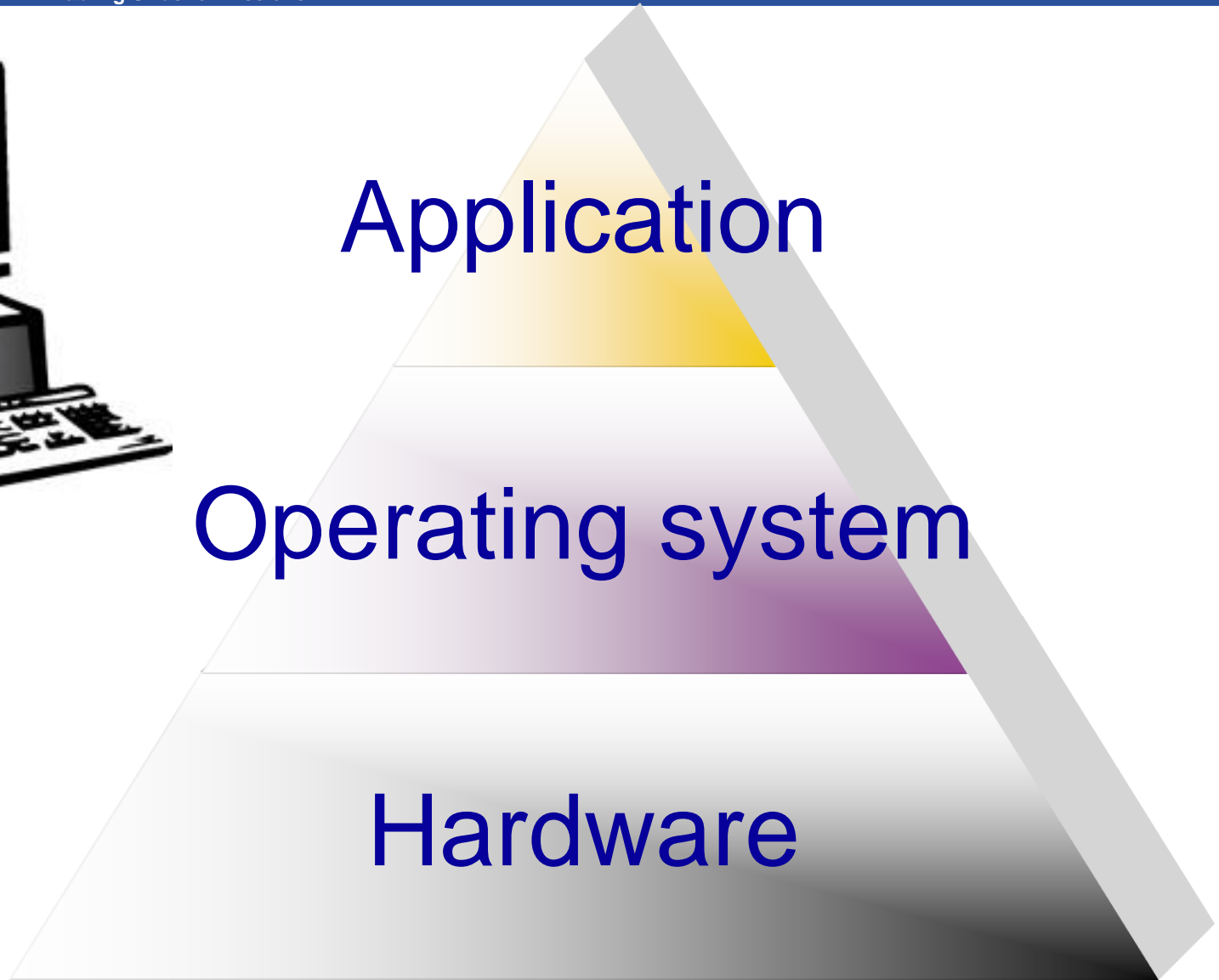
Stand alone computer

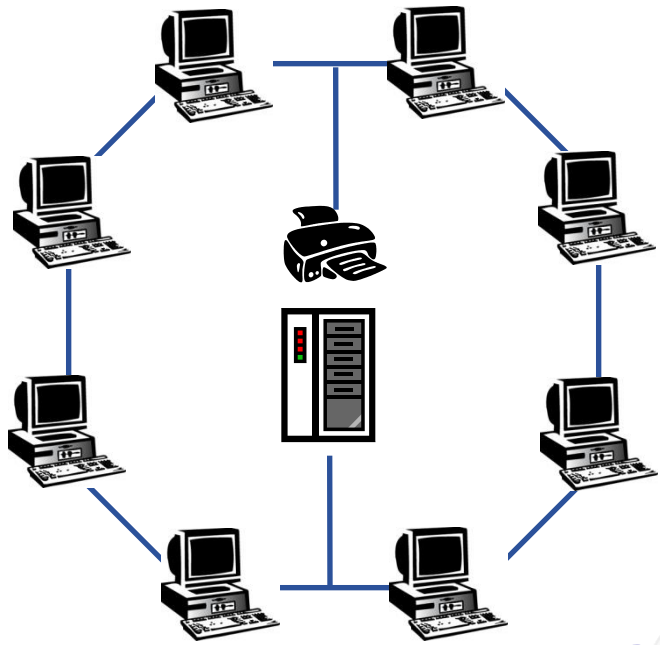


Application

Operating system

Hardware





Application

Network stack

Operating system

Hardware

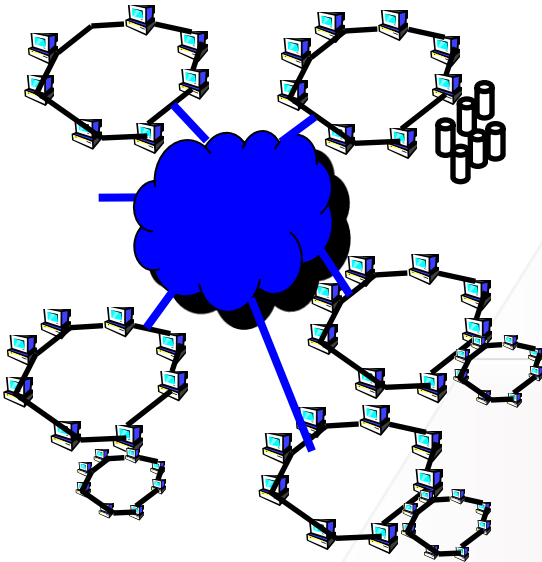
Application

Grid/Cloud Middleware

Network stack

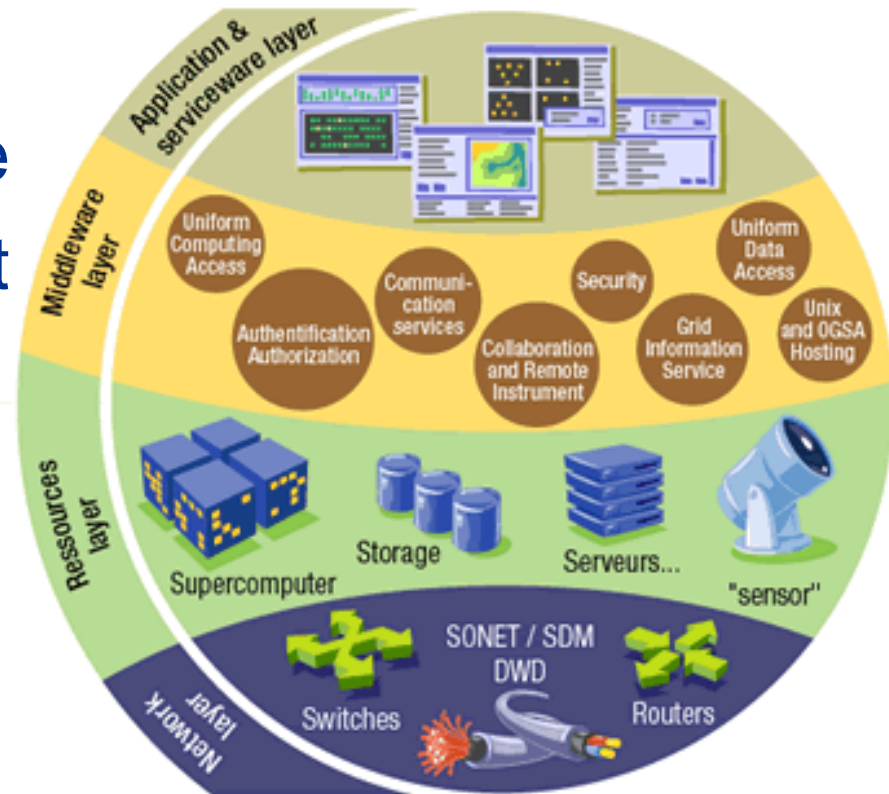
Operating system

Hardware



- **Middleware**, is an interfaces between resources and the applications

- User/Program Interface
- Resource management
- Connectivity
- Information services
- Collaboration



When you look at grid/Cloud solutions you look at the following terms/attributes:

- **Virtualization**
- **Resource Provisioning/Allocation**
- **Quality of service**
- **Scalability**
- **Security Concerns**

Am I running on a real hardware or I have a layer of virtualization that separates me from the hardware

Examples:

- **Sun Box**
- **VMWare**
- **...**

How Do I allocate resources when I need more:

- **More computers**
- **More Storage**
- **What happens when work load changes ?**
- **How long can they hold a resource ?**
- **How Do I handle priorities?**

What QOS I get from the Cloud/Grid

- Is The service up 24/7
- What happens when there is not enough resources?
- Can I get any number of computers?
- How Do I handle priorities?

How do I grow my resource on cloud/grid ?

How do I increase the resources for cloud/grid system

How Do I enter the system ?

Who has access to the data and application I am running ?

What are the default security settings on the Cloud/Grid

Can I read other users data?

How do they track what I am doing – non repudiation....

Grid:

- **Batch System to run tasks on large scale computing / distributed systems.**
- **Common Example: EGEE**

Cloud:

- **An Environment that gives you a virtual computer somewhere**
- **Common Example: Amazon EC2**

TBD....