Innopolis University | Distributed Systems | Fall 2016

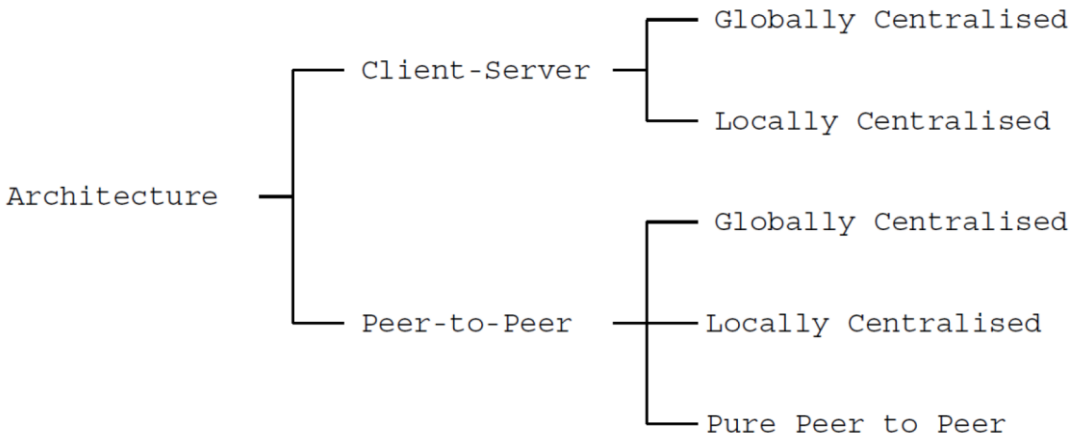
Reading Questions 2 | Due: Oct 28, 2016

Readings:

- **[DS]** Chapter 1. Distributed systems: principles and paradigms, Andrew S. Tanenbaum, Maarten Van Steen
- **[TAX]** Section 3.2 “Storage Architecture”; A Taxonomy of Distributed Storage Systems, Martin Placek and Rajkumar Buyya

Questions:

1. According to **[DS]**, there are three types of system architectures: centralized, decentralized and hybrid. And according to **[TAX]** there are five of them:



   How do you think to which type of architecture by **[DS]** should we correspond the types that were proposed in the **[TAX]** and why?
2. What is the difference between a process and a thread?
3. What is an asynchronous (non-blocking) I/O operation?
4. Does it make sense to use threads on a single-core CPU?
5. VM images such as AMIs can be quite big. How does this impact cloud providers that have many customers creating many different virtual machines all the time?
6. Are Web servers stateless or stateful?
7. What is the difference in request dispatching for local-area and wide-area clusters? At what point will we need a redirection policy?
8. Wide-area redirection requires a method for measuring the distance between two IP addresses. Think of two different methods and discuss pros and cons.

9. What problems will you need to solve to allow live migration of virtual machines between different wide-area clusters?
10. According to Fuggetta (Note 3.9) there are three segments in a process. Which segment do you think is typically more difficult to migrate?