**Managing Data Centers**

Discuss the failure scenarios in Data Centers:

* Component/Server level failure
  + Failure rates of rams/CPUs (hardware failures)
* Site/Power outages
  + Local outage, disaster outage
* Changes in software or any configuration or a Policy change

Estimations: How many wind turbines will it take to power a data center like google?

* 20 Data center available
* 50 Megawatts for one data center
* 1000 Megawatts of energy consumed
* 1 Wind Turbine -> One Kilowatt power generated
* 1000 \* 1000 = 1Million Wind turbines needed to power google data centers.