Hey Alexis, thank you for your insight into distributed data centers and their working. I agree with you that a distributed database has many advantages and would be a good pick for larger organizations. One question is do you think that the pros outweigh the cons of utilizing a distributed database? While a distributed database has multiple access points, and localized database has one access point and therefore a centralized point of failure. If some type of data replication or redundancy system were not in place, an attack on a centralized data facility could be catastrophic.

I think your examples of various interactive application response times shed light on an area that I previously had not considered, namely vehicle response times. In the event of a collision, what should the vehicle response time be for airbags to deploy and safety measure to enact? Most car-to-car collisions last for 70 to 150 milliseconds (Kodsi, 2021). This is a shockingly fast amount of time, yet an airbag deploys within 55 milliseconds. For an interactive web application, what would be considered an acceptable response time? If productivity increases as response time decreases, what are a few ways to decrease response time?

When thinking of centralized data processing facilities, is it possible to have more than one computer connected to the servers? Would this also apply to localized data centers that can be accessed over the internet? In a virtual data center (VDC) topology, the virtual data center resides on top of the physical data layer (Bayless, et al., 2019). This topology utilizes virtual machines as the middleman for accessing centralized data. What a VDC allows the network to do is maintain security practices of only allowing certain authorized users or processes to access data, while also permitting multiple users to access data from decentralized locations.

You last point, bringing in Zhang’s research of removing redundancies is an interesting point of view. With the removal of redundancies, how can data integrity be maintained if a data center were to be disrupted for any reason? Would the sleep mode they recommend be for the redundant hardware (Zhang et al., 2018)? you do make a great point redundant servers take a great amount of electricity and cost. If the services are not required, there is no need for these extra systems. Would these redundant systems also have been located in the same centralized data center, or would it have been stored elsewhere? The latter would make more sense, but it would also negate the concept of a centralized data center.

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