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Fallacies of Distributed Computing.

These are set of assertions made by L Peter Deutres and others at Sun Microsystems describing false assumptions now to distributed applications invariably make (Wikipedia)

They are:

1. The network is reliable! Network can be said to be more reliable these days but things can happen; Hardware and software can fail, people can also sabotage physical equipment
2. Latency is Zero! Although latency may not be an issue in LANs, when you move to WLANs or the internet you'll notice the delay. Calls over a network are not instant
3. Bandwidth is limited! Bandwidth is the capacity of a network to send data over a period of time. Bandwidth is not infinite, although you might not notice the bandwidth limitation often so thinking about the data you transfer is important
4. The network is secure! The only secure system is one that is powered off, not connected to any network (and ideally cast in a block of concrete). Security is hard and expensive: A business needs to balance the risk and probability of an attack with the cost of implementing

prevention mechanism

5. Topology doesn't change: Network topology changes all the time. Sometimes for accidental reasons like when the server goes down and it needs to be replaced. Many times it's deliberate for adding new processes or a new user.
6. There is one administrator: There is no one person who knows everything but when something goes wrong and you need to fix it, it may be difficult because so many people touched it and the one who knows how to fix the problem might not be there.
7. Transport cost is not zero: It is not zero, transporting data over the network has a price, in both time and resources. It is necessary to be mindful of transport cost and optimize it if there is a need for it.
8. The network is homogeneous: A homogeneous network is a network of computers using similar configurations and the same communication protocol. Having computers with similar configurations is a headache to achieve that is why it's important to focus on standard protocols.