Many of our servers are running underutilized. Server consolidation is a potential solution. It is the practice of using multiple virtualized systems on one physical system. With the application of server consolidation, we can optimize performance up to an additional 10% and save money in several ways.

There are both strong points and weak points to virtualizing. Using Uptime from source 1 as an example, each machine costs around $2500 just in running cost. Due to how consolidation works, there will be fewer real machines requiring maintenance and upkeep. Consolidation can reach ratios of 15:1, source 2, and greatly enhance the amount of storage utilization. Maintenance will be both simplified and streamlined. Fewer server administrators will be needed and maintenance can be done virtually instead of on site. Older machines can be used for longer and server backups are easier. With appropriate usage of virtualization, our servers can be made to never go down. However, this process will increase system overhead. This won’t matter much on our low-use systems, but we should avoid applying this to already well utilized systems. Consolidation has little effect on improving processor performance and causes the virtual machines running on it to be further limited by the hardware itself. Sharing this resource can cause errors and performance problems in certain situations. Lastly, consolidation software sellers may have poor support for our usage of their product.

Most of these issues can be avoided with proper consideration on our part. Furthermore, the potential money saved is significant. Despite the potential problems of virtualization, I believe it is in our best interests to pursue it.

Source 1

<https://www.energystar.gov/products/low_carbon_it_campaign/12_ways_save_energy_data_center/consolidation_lightly_utilized_servers#:~:text=Savings%20and%20Costs&text=According%20to%20the%20Uptime%20Institute,$1,500%20in%20hardware%20maintenance%20costs.&text=Consolidation%20makes%20existing%20servers%20far%20more%20productive>.

Source 2

<https://www.intel.com/content/dam/www/public/us/en/documents/white-papers/intel-it-virtualization-best-practices-paper.pdf>