



Mohamed Mubarak
San Jose, CA 95053
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Dear Mohamed,

As you know, we are makers of ultra-efficient servers for data center and enterprise customers. I wanted to send you some information regarding typical use cases for our servers with respect to data center power usage and comparative information versus conventional servers.

Our servers typically consume ½ to ¼ the power of conventional server offerings. The savings possibilities for a data center are truly exciting. For example, for less than it would cost to implement a 1 megawatt data center using conventional servers and storage products, a 1 megawatt facility can be implemented utilizing Lopoco products, but it will have more than twice the computational power and digital storage capacity as the conventional data center. The reason why it will cost less to construct a facility with the same power consumption is that our servers consume so little power, that most models can be put 40 servers into a rack with a 4.2 kilowatt power budget (208V20A), with power budget to spare for a couple of network switches. Conventional servers would need an 8.4 kilowatt rack for 20 to 30 servers at best, but more likely a 12.5 kilowatt rack would be required.

A typical data center would be designed initially with 50% of their racks 12.5 kilowatts, and 50% of them at 8.4 kilowatts. A Lopoco data center would be 30% - 8.4 kilowatt and 70% - 4.2 kilowatt. The following table illustrates the numbers. This is for a 1 megawatt data center with a PUE of 1.4, which is a good target for the typical climate of Northeastern Africa.

	Number of 12.5 kilowatt racks	Number of 8.4 kilowatt racks	Number of 4.2 kilowatt racks	Total servers
Lopoco	Unnecessary	21	101	4880
Conventional	24	36	0	1968

As you can see from the table, a 1 megawatt data center utilizing Lopoco servers can house more than twice the number of servers.

Along with this letter, I've prepared a sample quote featuring two of our most popular Lopoco servers. While we have many different models, I feel that, for example purposes, they are the most appropriate models to include here.

One of these is our cloud workhorse model, the LP-6240. With 12 logical CPU cores, this unit is perfect for cloud applications of all types, and is ideal for virtualization, heavy duty database and large scale web applications. I've configured that model with 6TB of a very new disk technology called hybrid disks, which have some SSD type storage in front of conventional rotating hard disk. The result

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is a very good performing disk, roughly equivalent to half the performance of a typical SSD, but at a price point that is roughly 80% less per GB than an SSD. The power consumption v. performance v. price of these disks is extremely good, hence we use them quite often when quoting configurations to customers.

The other model is our LP-4250, which has a very high CPU turbo clock speed, making it excellent for single threaded applications that often require a lot of CPU to get the job done. Even with such tremendous computational power, these servers are so efficient that 40 of them will comfortably installed in a 4.2 kilowatt rack with power left over for a couple of network switches. These machines excel at hadoop, email, and web serving of all types. I've configured them with 3TB of raw SSD storage capacity for very high performance. These will be the speed demons of the data center.

For a general purpose data center such as we are describing here, I would typically expect to see a certain amount of our storage servers provisioned. Adding them to the mix, however, would clutter up the picture quite a bit, but without any real difference in the overall outcome. Because a commesurate amount of conventional storage would be also included, the value proposition would work out to be the same as I have illustrated here already.

Sincerely,

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