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APPLICATION CASE

Application Case:
Large Indian Enterprise Reaps Plentiful Gains from Use of 3-Phase PDUs

Performance, power headroom, control and PUE all up, with lower transaction cost

Like many other countries, India uses a unique digital validation for identity authentication whenever a citizen or resident accesses public services, applies for a loan, etc. Every institute or organization has to collect KYC (know your customer) documents and validate these with government agencies through a verification process. An enterprise is responsible for performing such validation and verification. Given the very high issuance rate of the digital validation ID, the fact that the country has a population of 1.4 billion people, and that the median age is an Internet-savvy 28.4 years, this responsibility is a very onerous one. Accordingly the IT resources that drive the validation and verification process for ID must be up to the task and expandable.

The enterprise started its validation and verification process undertaking with just one data center. It added another as KYC requests expanded and verification volume grew. This arrangement proved to be adequate till a few years ago, when the enterprise began to have problems with power reliability and capacity in its DCs. At that time, both DCs were using an assortment of single-phase PDUs from various manufacturers. While they served their intended function in the initial years, they were strained by the ever increasing verification volume. In addition, the enterprise found itself facing shrinking power capacity headroom.

Moving up to HPC

At the same time, the enterprise had decided to move up to high performance computing (HPC), in which computing power is aggregated in a way that delivers much higher performance than could typically be obtained from workstations or servers in order to handle very large computing needs.

HPC requires more power than the single-phase PDUs then in use could provide, leaving the enterprise with two options:

1) add more floor space in the DCs to accommodate more racks, servers and PDUs, or
2) build new and bigger DCs.

The former choice would have been a challenge, with the need for further facility expansion a very real possibility in years to come, the latter would have needed even more time to construct and be more disruptive.

Neither of the two options was practical so the enterprise went about rethinking the power reliability and capacity problem. Eventually it determined that switching to three-phase PDUs made the most sense as it would not require additional floor space, let alone new DCs, while enabling the use of power-intensive HPC assets.

Three-phase PDUs the best choice

After looking at its current needs and factoring in headroom for future expansion, the enterprise decided replacing the single-phase PDUs with three-phase ones capable of providing up to 55KW of power per rack would best meet its requirements, besides being more economical than the two earlier options.

It evaluated solutions from several suppliers over a six-month period before choosing a 55KW Raritan PDU model for its higher quality and richness of features. Equally important to the enterprise was the availability of a complementary Raritan smart rack controller that other suppliers could not provide. A plug-and-play central connection point for environmental monitoring, asset location, physical access, and other monitoring and security sensors, the controller integrates seamlessly with BMS and DCIM software and collects and delivers real-time actionable data about DCs with minimum change to power distribution or IT infrastructure.

Clear, measurable benefits

Over a period of three months, Raritan installed and commissioned the three-phase PDUs, smart rack controllers, temperature, humidity and other sensors, firewalls and other equipment in a total of 120 racks, with work performed in parallel at the two DCs. The activities were very well planned, resulting in minimum downtime while shifting loads between sources, racks and DCs; the enterprise took the opportunity to switch to its new HPC assets when systems were on alternate shift.

With its new HPC assets, three-phase PDUs and other equipment, the enterprise now has more computing capacity than before – without adding a single square foot of DC space. Power capacity has increased by more than three times and there is now more headroom for future expansion. The identity verification production rate has risen threefold, control of power supply and power capacity has improved, and there are now far fewer underperforming IT assets. Moreover, overall cost per transaction has come down and PUE was brought down from 1.8 to 1.4, with further optimization ongoing.

Ready to find out more? Contact Raritan today.
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