NTT DATA

India | Technology

PhonePe drives efficiencies with sustainability in focus

Client profile

A leading fintech company, PhonePe offers one of India's most highly subscribed UPI-based digital payments app, with over 365 million active users across the country. The company's vision is to build a large, scalable and open transaction ecosystem that creates the maximum positive impact for all stakeholders.

Built for Indians, by Indians, PhonePe was incorporated in 2016 and is headquartered in Bengaluru, India. The company has many achievements to its credit, with its eponymous app becoming the first digital payments platform to cross 1 billion monthly transactions on UPI in 2021. It is owned by Flipkart, one of India's foremost ecommerce players.

Which technologies?

- Liquid Immersion Cooling (LIC) and Direct Contact Liquid Cooling (DCLC)

Which services?

- Data Center Services

Which partners?

- Dell Technologies

PhonePe

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> NTT's customer-first approach made it possible for us to take a leap of faith to invest in Liquid Immersion Cooling.
>
> **Burzin Engineer,** Chief Reliability Officer, PhonePe

Summary

As a company that banks on the robustness and scalability of its technology landscape, PhonePe was looking to drive greater efficiency in its server operations. The company relied on a powerful network of servers that consumed massive amounts of electric power per core, leading to challenges in cooling. They needed to reduce their cooling costs while retaining uptime and improving the mean time between failures. By partnering with NTT to upgrade the cooling technology in use, they were able to continue consuming the latest and high-end servers while ensuring optimal cooling levels and reducing their environmental impact.

Business need

The pursuit of eco-friendly, efficient, and profitable cooling technologies

PhonePe addresses India's pressing need to bring the digital revolution to its tier-II and tier-III cities. With a rapidly expanding network that processes transactions of over USD 680 billion a year, scalability is a top priority. Overcoming technology barriers is therefore of paramount importance as they continue to expand and scale operations to service one-billion-plus users seamlessly, without disruptions.

Faster response time, regardless of peak or non-peak hours, is also extremely important to ensure a great user experience, especially in the case of digital payments. PhonePe endeavors to adhere to a response time of 3-4 seconds from the time a user asks for payment until the time they receive an app notification of transaction success.

To ensure continuity and security of operations, PhonePe relies on a large farm of DMZ machines that constitute their demilitarized subnetwork. These run a load balancer called Engine X, which handles close to 12,000 transactions per second at its peak. Most of their technology is built on the open-source framework, set up in-house. As a company that's all about maintaining the magnitude of scale, availability and accelerated growth, they've even developed and deployed their own private cloud and related technologies at our data centers.

PhonePe looked to upgrade to the next generation of servers to satisfy the demands of better response times and scaling capabilities. However, with the increasein processing power, these servers also tend to consume more electricity and require better cooling, something that traditional data centers aren't equipped to provide. Especially in a tropical setting, found in most of India, it became a necessity for them to partner with us to explore alternative cooling technologies that are both sustainable and profitable.

Solution

Accelerating growth with focus on innovation and sustainability

As their long-term strategic growth partner, PhonePe relies on our data center services to achieve their key objectives of customer success and hyper-growth underpinned by sustainability.

PhonePe worked with us to implement the Liquid Immersion Cooling (LIC) technology, which immerses servers in a dielectric synthetic oil that is non-conductive. LIC eliminates corrosion and jitter common to air-cooled technology and also makes the machines last longer. LIC is suitable for heat loads (20kW+ per rack) higher than contemporary technology (up to 15-20kW per rack).

Not only does LIC drive up the mean time between failures, it uses same standard servers that are used in air-cooled racks, which do not require any hardware changes. The only exception is that movable parts are avoided in LIC.

Outcomes

Increased server life, better power efficiencies, response times and scalability

LIC boosted PhonePe's sustainability efforts by simplifying and streamlining their data center operations and making them power-efficient.

- **Increased thermal efficiency:** Lower PUE (power usage effectiveness) levels
- **Economic set-up at scale:** Lower opex and capex through process optimization, better real estate utilization (by geography or layout), and support for large-scale server farms
- **Future-proof technology:** LIC is sustainable and helps PhonePe achieve their sustainability goals
- **Cost savings:** It's also a significant cost saver as compared to standard air-cooled racks, while not requiring major customizations in the standard IT gear

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When it comes to use of new technology, NTT has been always a step ahead of others, which enables us to naturally choose NTT as our partner in any expansion journey we decide to undertake.

Burzin Engineer, Chief Reliability Officer, PhonePe

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