

Empowering the Future

Edge Data Centers are Poised to Revolutionize Industries

In today's fast-paced digital world, speed and efficiency is everything and Edge Data Centers (EDCs) are the key to unlocking the full potential of our digital lives. By storing cache memory, cloud computing resources, and site cookies at the edge, these data centers can provide lightning-fast data processing, reduced latency, and enhanced network performance. So, let's delve deeper into the EDCs world and discover their capacity to unlock the future.



Data latency has been a big hassle for IT since inception and with increasing dependency on the Internet of things (IoT), connected devices and artificial intelligence (AI) it has become harder and harder. By Storing cache memory and cookies at the EDCs we can solve this latency problem and enhance the speed of the network. Cache memory refers to the temporary storage of frequently accessed data that is kept closer to the user to reduce the time it takes to access

it from the central server again and again. Cookies, on the other hand, are small files that are stored on a user's device and are used to remember preferences, login and other information. When cache memory and cookies are stored at the Edge Network, it means that this piece of data is stored closer to the end user. This results that data needing to travel less distance to reach the destination therefore requires less time to access it, resulting in faster load times and reduced latency.

For example, a user in Mumbai wants to access a website hosted on a London server. Without caching, every time the user visits the website, the browser needs to request all the data from the server each time, which can take a significant amount of time due to the distance between the user and the server. However,

if the website's cache is stored at an Edge data center within a few kilometres, the user's browser can quickly access the cached data from the edge data center instead of requesting it repeatedly from the server in London. This results in faster access and reduced latency with less bandwidth.

Similarly, cookies stored at Edge network can also enhance the user experience by reducing the time it takes to authenticate the user or retrieve their preferences. For example, if a user frequently visits a website that requires them to authenticate identity, storing their information as a cookie file at an edge data center can automate this process, resulting in reduced time it takes to access the website and improving the overall user experience.



EDCs can potentially revolutionize many industries, including healthcare, retail, and transportation. By bringing data processing and storage closer to the end users and storing cache memory and site cookies, EDCs can reduce latency, increase processing speed, save bandwidth, and improve overall network performance.

In healthcare, EDCs can make patient care effective and prompt by enabling faster and more efficient data processing. For example, real-time monitoring of patient's vitals can be done more precisely with the help of EDCs. Data collected from wearable medical devices like blood sugar, BP, or heartbeat monitors can be quickly processed and analyzed at the edge, allowing healthcare professionals to make fast and accurate decisions. EDCs will make remote surgeries possible too.

In retail, EDCs can help improve the customer experience by enabling faster and more personalized services. For example, EDCs can store the cache memory of frequently accessed products and services, making it faster for customers to access them. EDCs can also help retailers better manage their inventory and supply chain by enabling real-time monitoring of stock levels and delivery schedules.



In transportation, EDCs can help reduce network congestion and enhance the driving experience of users. For example, Self-driving vehicles can leverage the nearest EDCs to receive real-time traffic information and emergency warnings, while connected with centralized servers for application updates and maintenance scheduling.

Several industries could benefit enormously from EDCs, leading to a new era of innovation and efficiency. Furthermore, EDCs play a crucial role in supporting the Internet of Things (IoT) and the development of smart cities. To remain competitive in an industry that is rapidly evolving, organizations need to embrace and adapt the transformative potential of EDCs.

Challenges of implementing and managing Edge Data Centers



Edge computing is transforming how we manage and analyze information within an era where data rules and rapid utilization of it are the norms. As edge computing evolves, there will be new challenges to overcome to enable the optimal functioning of Edge Data Centres (EDCs), including cooling and power issues as well as security concerns.

The demand for immediate data processing and minimal latency applications is driving demand for EDCs to provide localized computation and storage.

Data centers are becoming more prevalent, but concerns have been raised about implementing and managing energy consumption and cooling to reduce their impact on the environment and people's lives.

When it comes to energy consumption, EDCs have an advantage over hyper-scale data centers. This is because they are designed to handle smaller workloads and serve a smaller user base, which means less energy consumption than hyper-scale data centers.

EDCs are more energy-efficient than hyper-scale data centers:



Proximity to Users

EDCs are located closer to the end users, which means the data has to travel shorter distances, reducing latency and energy consumption. In contrast, hyper-scale data centers are located in remote areas, requiring data to be transmitted over long distances, consuming more energy.



Scalability

EDCs are scalable and modular, which means they can be easily upgraded or downsized based on demand. This reduces the amount of energy consumed by idle servers and equipment. Hyperscale data centers, on the other hand, are less flexible and often have a higher number of idle resources, which consume energy.



Cooling

EDCs use local cooling solutions, such as air conditioning and fans, to cool the equipment, which consume less energy compared to the cooling solutions used in hyperscale data centers, which require more sophisticated cooling systems to manage the high density of equipment.

Reusing Despised Heat from Edge Data Centres in Novel Ways

Edge data centers are a critical component of modern digital infrastructure, but they also generate a significant amount of heat. Fortunately, there are many innovative ways to use this excess heat, which can reduce energy consumption and carbon emissions while creating new opportunities for sustainable economic development.

Manufacturing Wood Pellets

One potential use for the excess heat produced by edge data centers is the manufacture of wood pellets. Wood pellets can be used for heating homes and businesses. By using excess heat from data centers to produce wood pellets, we can create a closed-loop system that reduces energy consumption and greenhouse gas emissions.

Maintaining Sea Bass Fish Farm

Another way to use excess heat from EDCs is to maintain a sea bass fish farm. Sea bass requires warm water to thrive, and the excess heat from data centers can be used to maintain the ideal water temperature. This approach not only helps to reduce energy consumption but also creates new economic opportunities in the form of sustainable aquaculture.

Green House Farming

The excess heat from data centers can also be used in green house farming. Such farming is popular and profitable that requires a warm and consistent environment. By using excess heat from data centers to maintain greenhouse temperatures, we can create a sustainable and profitable source of fresh produce.

Heat Buildings

In addition to agriculture, excess heat from EDCs can also be used to heat buildings. This can be particularly useful in colder climates, where heating costs can be a significant expense. By using excess heat from data centers to supplement or replace traditional heating systems, we can reduce energy consumption and greenhouse gas emissions while providing a reliable source of heat.

Heat Swimming Pools

Finally, excess heat from data centers can also be used to heat swimming pools. This can be particularly useful for commercial and public swimming pools, which require large amounts of energy to maintain a comfortable water temperature. By using excess heat from data centers to heat swimming pools, we can reduce energy consumption and operational costs while creating a more sustainable and enjoyable swimming experience.

By exploring these options, we can reduce energy consumption, greenhouse gas emissions, and operational costs while creating new opportunities for economic development and environmental stewardship.

Ways to reduce energy consumption by EDCs

Implement Energy-Efficient Hardware

One of the most effective ways to reduce energy consumption by EDCs is to use energy-efficient hardware. This includes servers, storage devices, and networking equipment that are designed to consume less power while still delivering high performance. By using energy-efficient hardware, EDCs can reduce their energy bills and carbon footprint.

Use Renewable Energy Sources

Another effective way to reduce energy consumption by EDCs is to use renewable energy sources such as solar, wind, and hydropower. By generating their own renewable energy, EDCs can reduce their reliance on the grid and significantly reduce their carbon footprint.

Implement Virtualization and Consolidation

Virtualization and consolidation are techniques that allow multiple applications to run on a single server, reducing the number of physical servers required. By consolidating their applications onto fewer servers, EDCs can reduce their energy consumption and save on operational costs.

Deploy EDCs in Cold Climates

EDCs require cooling to maintain optimal temperatures for their hardware. By deploying EDCs in colder climates, where outside air can be used for cooling, data centers can reduce their reliance on air conditioning and reduce their energy consumption.

Explore Innovative Cooling Techniques

Microsoft's Project Natick team proved the underwater data center concept was feasible during a 105-day deployment in the Pacific Ocean in 2015. Other innovative cooling techniques include using seawater for cooling, evaporative cooling, and liquid immersion cooling. By exploring these innovative cooling techniques, EDCs can significantly reduce their energy consumption and carbon footprint.

By implementing these strategies, EDCs can significantly reduce their energy consumption, save on operational costs, and contribute to a more sustainable and eco-friendly digital infrastructure.

The Linnunrata Invitational Golf Tournament Season 5 held in Delhi

The Linnunrata Invitational Golf Tournament Season 5 held on April 8, 2023, at the Delhi's Qutub Golf Club, was a resounding success. The tournament played on the double Peoria Stable ford format, brought together some of the best golfers from different walks of life, including diplomats, bureaucrats, businessmen, top officials of blue-chip companies, and trade organizations.



The event showcased high-level competition and was played in a stunning setting, with the Qutub Golf Club provides an immaculate course and perfect weather conditions.



The overall lady champion was Ms. Amita Jalta and the Winner of this running trophy male was presented to Mr. Mahavir Singhvi IFS. The winner in each fourball was Jaspreeth, Dibakar Sarkar, Rajiv Kumar Pandey IAS, Yuvraaj Singh Sodhi, Prithvi Raj Bijlani, Pavel Mehta, Gunjan Bijlani, Premjit Singh, Anjali Chawla, Prateek Bhardwaj, Waithaka Gachiri, Akhilesh Singh IFS, Ramesh

Jalta, Harvinder Sagoo, Faith. J. Bette, Aso Lori, Changyong Lee, Gp Captain Amarjeet Singh, R S Rawal IRS, Rabina Chadha, Jeongmoon Hong, Sanjay Duttta, Rajan Sehgal & Kunal Singh. The winner of the straightest drive was Dr. Sharmila Mishra. The winner of Nearest to the Pin was Ashish Chatterjee and the longest drive was won by Dr. Shrish Dutt Mishra.

On the occasion, Mr. Abhaydeep Singh Mutti, Director of Vuenow Group, said that the tournament aims to bring like-minded people together for a day of competition & fun and increase awareness of the emerging high-impact digitally powered opportunities for entrepreneurs, organizations and communities.



This is the running trophy and has already been played at Forest Hill Resorts in Chandigarh, followed by Naldehra Golf Club in Himachal Pradesh and then Royal Spring Golf Course, Srinagar and Panchkula Golf Club in Panchkula. The USP of this fun filled tournament is that every Fourball has one winner apart from the overall winner. The Nearest to the pin, longest drive, straightest drive was also part of the competition list. Mr. Munish Arora, Chief Innovation Strategist, VueNow Group, said that it was a gunshot tournament with 88 golfers teeing off at the same time for this running trophy.

Talking of the tournament the IGTA president, Mr. Rajan Sehgal said that “Such tournaments and events are integral part of the promotion of tourism to the world. They bring positive impact and are instrumental in showcasing any state as the destination for niche sports.”



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