

DATA CENTER SOLUTIONS

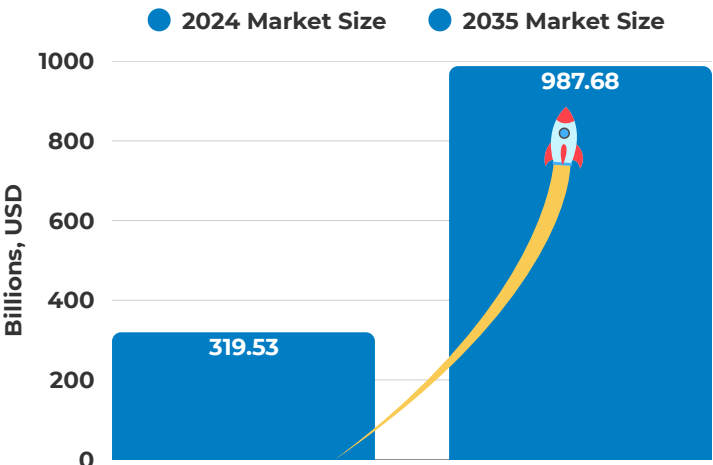
Data centers are the backbone of our digital world. As data traffic and global ICT spending rise, the demand for more efficient data centers grows. With global data center capacity projected to grow by 15% per year till 2027(JLL, 2025), operators still face significant challenges in energy use, regulation, and sustainability.

Using GT-SUITE’s simulation capabilities, engineers can model thermal management, power flows, and energy optimization strategies in data centers, helping to improve efficiency, reduce costs, and support sustainable operations.

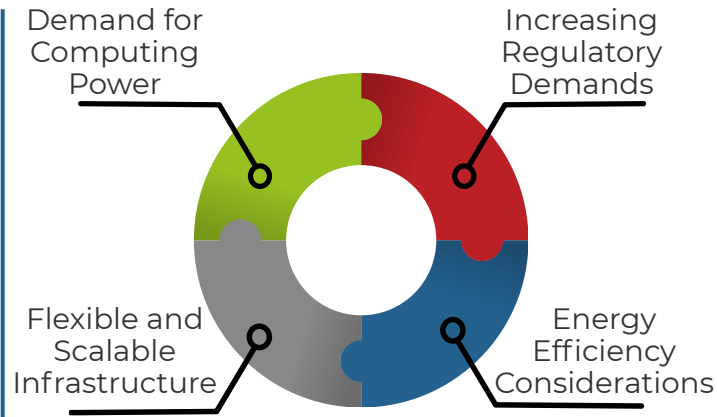


DATA CENTER MARKET OVERVIEW

Global Data Center market growth

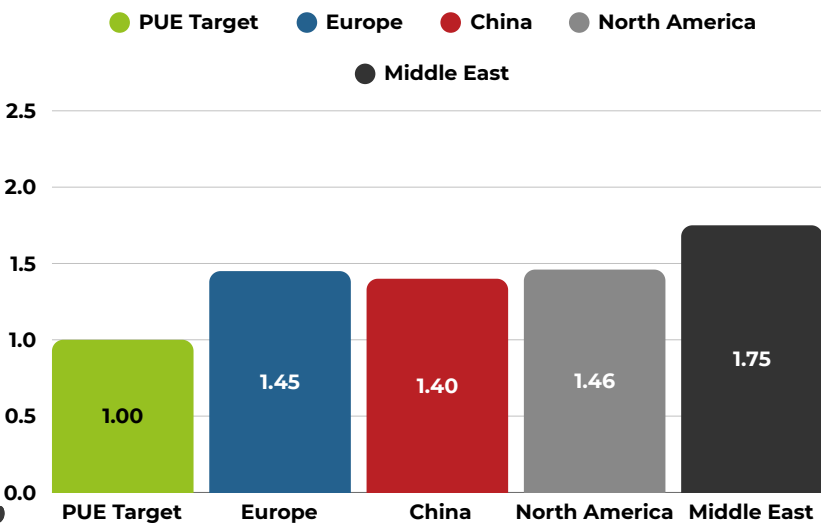


What drives the sector’s growth and development?

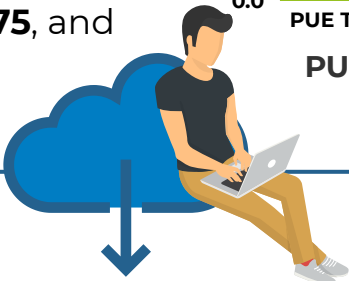


DATA CENTER REGULATIONS

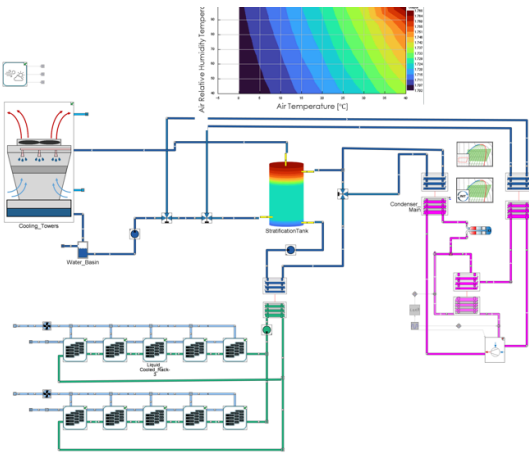
Data centers' energy use has raised concerns about their environmental impact and energy supply. In response, governments are introducing regulations. In the EU, the **PUE (Power Usage Effectiveness)** index was introduced with an **ideal target of 1.0**. Currently, EU data centers have an average **PUE of 1.45**. Other regions are also improving efficiency, with **China at 1.4**, the **Middle East at 1.75**, and **North America at 1.46**.



Source: Uptime Institute Global Data Center Survey, 2024



GT DATA CENTER SOLUTIONS



Cooling Solutions:

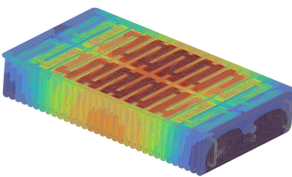
GT-SUITE offers energy-efficient cooling technologies to keep data center temperatures stable and reduce energy consumption, including:

- **Liquid Cooling (single and two-phase)**
- **Dry and evaporating technologies**
- **Vapor Compression Systems**
- **Immersion and Hybrid Cooling strategies**



Flexible Load Simulation:

GT-SUITE simulates varying load conditions to optimize energy use, helping data centers adjust to fluctuating demands and improve overall energy efficiency.



System-Level Energy Management:

GT-SUITE optimizes microgrids within data centers, improving energy efficiency, system stability, and reducing dependency on the main grid, while enhancing overall power management.

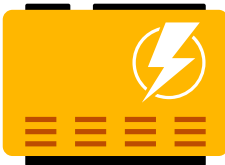


Battery Management:

GT-SUITE efficiently manages backup power systems to ensure reliable performance during power outages, optimizing battery charge and discharge cycles.

Backup Power:

GT-SUITE offers reliable models for backup power systems, including batteries, generators, and fuel cells, ensuring continuous operation during power interruptions and preventing downtime.



Want to learn more about Gamma Technologies Data Center Solutions?

Contact us: www.gtisoft.com

