



CASE STUDY

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# Retrofit Success at a Major U.S. Data Center





## INTRODUCTION

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A major U.S. data center in Virginia was facing rising operational costs, inefficient cooling systems, and frequent downtime. To address these challenges and align with their sustainability goals, they turned to Infinitem for a turnkey retrofit solution designed to enhance energy efficiency, improve serviceability, lower emissions, and optimize their PUE (Power Usage Effectiveness).



## THE CHALLENGE

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### **Inefficient Cooling Systems:**

Legacy fan and motor infrastructure consumed excessive energy, driving up operational costs and worsening PUE.

### **Frequent Downtime and Maintenance:**

Aging systems required constant attention, limiting serviceability and resulting in costly unscheduled downtime.

### **Sustainability Pressures:**

Falling short of internal and external energy efficiency goals, the data center lacked a clear path to meet sustainability metrics.

## THE RETROFIT SOLUTION

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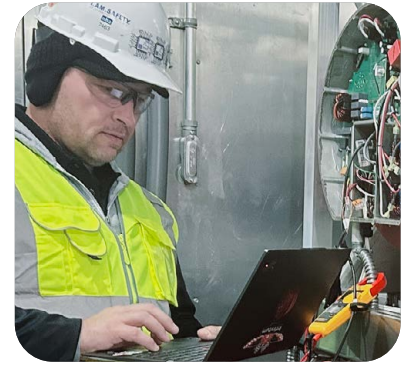
### **Aircore EC+ Motor Installation:**

Infinitem's high-efficiency Aircore EC+ motors replaced 500 outdated IE3 (NEMA Premium) AC induction motors + VFDs, improving PUE and reducing energy consumption.



### **Fan Assembly Upgrades:**

Upgraded fan assemblies enhanced cooling performance and system reliability while minimizing strain on operations.



### **Energy Optimization:**

Advanced control systems optimized energy usage and airflow without compromising cooling performance.

**The turnkey retrofit installation was completed in 4 months, ensuring minimal disruption to the data center's operations and improving overall serviceability.**

## RESULTS AND IMPACT

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**Improved PUE:** The project achieved a significant improvement in the data center's Power Usage Effectiveness.



**Energy & Cost Savings:** A 19% reduction in energy consumption, saving approximately \$150,000 on electricity bills annually.



**Increased Reliability & Serviceability:** The new systems eliminated unscheduled downtime and reduced maintenance time and costs.



**Reduction in Scope 2 Emissions:** 625 tons of CO<sub>2</sub> are avoided each year with this retrofit.



**Fast ROI:** The return on investment was achieved in just two years, driven by energy savings, reduced downtime, and lower maintenance labor costs, with ongoing benefits anticipated throughout the system's lifespan.



**The turnkey retrofit solution has exceeded our expectations. Not only have we improved our PUE, but the increased serviceability and reliability have eliminated operational headaches. Infinitem delivered immediate energy savings, and our systems are now future-proofed for sustainability goals.**

— **Facilities Manager, Major U.S. Data Center**  
*(Name Withheld for Privacy)*

## CONCLUSION

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**By partnering with Infinitem for a turnkey retrofit, this major U.S. data center transformed its operations, achieving improved PUE, enhanced serviceability, lowered emissions and significant cost savings while meeting their sustainability goals.**

**If your data center is facing similar challenges, contact Infinitem today to explore how our turnkey retrofit services can optimize your operations for better performance, energy efficiency, and reliability.**

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**Schedule a 15-minute consultation with our experts today to learn how we can enhance your data center's performance, lower costs, and improve sustainability.**

**GET STARTED**