Revolutionizing Data Center Power Management

1. **iGoS (Intelligent Grid Operating System)**: The system uses iGoS to manage energy demands, particularly those required by GPUs (Graphics Processing Units). iGoS is a smart energy management software or platform that optimizes power distribution and consumption.

2. **Battery Backup and Grid Separation**: The system's battery separates the grid from the load, isolating and powering devices during a power failure.

3. **Independent Power Supply**: The UPS provides up to two hours of power, ensuring continuous operation and protecting sensitive equipment during outages

4. **Secured Energy Quality**: The UPS ensures stable power, critical for high-demand technologies like GPUs requiring uninterrupted power

Overall, this system is a robust solution for managing the increasing energy demands of modern technology, providing both reliability and quality in power supply.

What is the value for the new generation data center?

The value of such advanced UPS systems, developed by Apparent Inc., for the new generation of data centers is significant in several key areas:

1. **Enhanced Reliability and Uptime**:

   o Our advanced UPS system with intelligent energy management ensures uninterrupted data center operations during power failures

2. **Improved Energy Efficiency**:

   o With iGoS enabled, these UPS systems can optimize power usage, reducing energy waste and lowering operational costs.

3. **Scalability and Flexibility**:

- A flexible UPS that adapts to growing power demands is crucial for next-generation data centers, managing increased loads without compromising performance

4. **Protection of Sensitive Equipment**:

- GPUs and high-performance computing require stable power. Apparent Inc.'s UPS system protects against surges, spikes, and electrical inconsistencies.

5. **Reduced Downtime Costs**:

- By ensuring a continuous power supply, the UPS minimizes the risk of costly downtime. For data centers that provide critical services, even a few seconds of downtime can result in significant financial losses.

6. **Sustainability & Meeting ESG Goals:**

- As energy regulations tighten, an efficient UPS helps data centers reduce their carbon footprint and meet sustainability goals.

7. **Support for High-Demand Workloads**:

- With rising power demands from AI and other intensive applications, a robust UPS ensures data centers support the latest technologies without power issues.

In summary, the value of this new generation of UPS systems lies in their ability to enhance reliability, improve energy efficiency, protect critical equipment, and support the evolving power demands of modern data centers, all while contributing to sustainability efforts.

The iGoS-operated UPS by Apparent Inc. provides advanced redundancy at a 55kW-1MW level, crucial for ensuring reliability and fault tolerance in data centers.

The Breakdown:

Deep Redundancy Options:

1. **2N Redundancy:**

- **Definition:** Fully redundant system where there are two independent UPS units, each capable of carrying the full load. If one fails, the other can take over without any interruption to power supply.

- **Value:** Provides the highest level of reliability, ensuring that even if one UPS system fails, the data center remains fully operational.

2. **N+1 Redundancy:**

   o **Definition:** In an N+1 configuration, there are ample UPS units to handle the load (N) plus one additional unit for redundancy. If one unit fails, the extra unit (the +1) ensures that the power supply remains uninterrupted.

   o **Value:** Balances cost and reliability by providing a backup unit without the need for a fully duplicated system.

3. **4 Makes 3 Configuration:**

   o **Definition:** This configuration uses four UPS units where only three are needed to meet the power demand. If one unit fails, the other three continue to support the load, maintaining system reliability.

   o **Value:** This provides a cost-effective redundancy option that ensures continued operation even with one unit offline.

Software Configuration Flexibility:

The flexibility provided through software configuration is a significant advantage. With the iGoS, the UPS can be configured to meet specific redundancy needs based on the data center's requirements:

- **Dynamic Adjustments:** Software controlled redundancy enables dynamic scaling and customization. Optimizing power management without physical infrastructure changes.

- **Cost Efficiency:** By configuring redundancy based on actual needs, data centers can avoid over-provisioning, reducing both capital and operational expenditures.

- **Scalability:** As data center power demands grow, software-configurable redundancy enables easy scaling with minimal downtown or hardware changes.

Overall Value:

- **Increased Reliability:** Multiple redundancy options ensure that the power supply is always secure, minimizing the risk of downtime.

- **Operational Flexibility:** Software-configurable redundancy offers the flexibility and adaptability crucial for data centers to quickly respond to changing demands

- **Cost Savings:** Redundancy configurations enable data centers to select cost-effective options that meet reliability needs, avoiding extra expenses.

Apparent Inc.'s UPS system, with its deep redundancy and iGoS flexibility, provides a robust and efficient solution for next-generation data centers' power needs.

The iGoS-operated UPS from Apparent Inc. enhances flexibility and redundancy in data center configurations with A, B, and generator backups.

Enhanced Capacity Utilization:

- **Combined A and B Feed Capacity:** In traditional data centers, capacity is limited by the smaller power feed or generator. However, the iGoS-operated UPS can use storage for up to two hours, allowing effective use of both A and B feeds and better infrastructure utilization.

Extended Redundancy and Decision-Making Time:

- **Independent Operation for Two Hours:** The UPS's two-hour independent power backup offers critical time for data center operators to assess, decide, and implement contingency plans without making immediate, potentially cost consuming decisions.

- **Redundancy with Flexibility:** The system allows the data center to continue operating for an extended period if a power feed or generator fails, crucial for restoring power or implementing solutions.

Operational Advantages:

- **Seamless Transition:** The UPS's ability to integrate A and B feeds with redundancy ensures uninterrupted data center operation during power failures, with even and efficient load distribution.

- **Strategic Decision-Making:** Extended backup time lets operators make strategic, informed decisions about load shedding, equipment shutdowns, or switching power sources, reducing error risks during outages.

Overall Impact:

- **Improved Reliability:** By combining the capacities of the A and B feeds while maintaining robust redundancy, the system ensures a more reliable power supply.

- **Increased Operational Efficiency:** The flexibility to operate on storage for an extended period optimizes the use of available resources and enhances overall data center efficiency.

- **Risk Mitigation:** The ability to maintain operations during power disruptions without immediate reliance on generators reduces the risk of downtime and associated costs.

This approach represents a significant evolution in how data centers manage power, offering a blend of flexibility, reliability, and efficiency that traditional configurations may struggle to achieve.