

# How Reliable PDUs Lead to Reliable Data Centers



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# Introduction

In modern society, data centers are the pulse of corporate intelligence and business operations. With an extremely high cost for construction and operation, being able to minimize outside disturbance, such as power outages and security breaches, are top priorities.

In this eBook, we will discuss the cost and security implications of maintaining a data center and the importance of having a reliable PDU to help you achieve continuous uptime.

**Let's first take a look at a few major concerns.**

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# The Importance of Data Security

IDC predicts that the total amount of digital data created worldwide by 2020 will top 44 zettabytes and anticipates by 2025, the total will hit a staggering 180 zettabytes! This newly created digital data has put immense pressure on data centers, creating a shift to focus more on security and data protection.

In addition, the number of cyberattacks is on the rise. The 2015 Cyberthreat Defense Report stated over 70% of organizations report having been compromised by a successful cyberattack in the past 12 months.

Every piece of infrastructure on your network needs to have the utmost security as carelessly configured devices can be susceptible.

Source: <https://www.firmex.com/thedealroom/the-10-most-expensive-data-breaches-in-corporate-history/>

## Cost of Data Center Breaches



**\$162 Million**

**SONY**

**\$271 Million**

**EPSILON<sup>®</sup>**

**\$4 Billion**

# The Risk of a Data Center Outage

With the eye-popping cost of building a data center and importance of securing data, you can't forget what happens when power outages occur. Power outages can transpire from numerous events, but the one thing that stands true is the sheer incurred cost.

In 2016, the average total cost per minute of an unplanned outage was \$8,851, up from \$5,617 in 2010. That's a 57% increase in 5 years!

- **The average data center power outage lasts 84 mins and typically occurs twice per year.**
- **The total cost of a power outage is roughly \$744,000; that's \$1.4 million annually.**

**Cost of Data  
Center Outage**

**\$8,851**  
**PER MINUTE**



# How can you improve uptime and security at the rack level?

## With intelligent power distribution.

PDUs are designed with components, features, and failsafes that ensure the most reliable and secure infrastructure possible.

- Latest network security protocols
- Diverse options for user authentication and management
- Best-in-class data encryption methods
- Precise metering accuracy
- Power sharing
- Advanced monitoring and alerting
- Failsafe design



# Security at the Rack

Security at the rack level can be easily overlooked, but it's important to know that it's just as susceptible as other parts of the data center, especially when more and more confidential data is being stored on servers at the rack. This is why we equipped our PDUs with the latest network security protocols and best in class data encryption methods to ensure the highest security.

## Features:

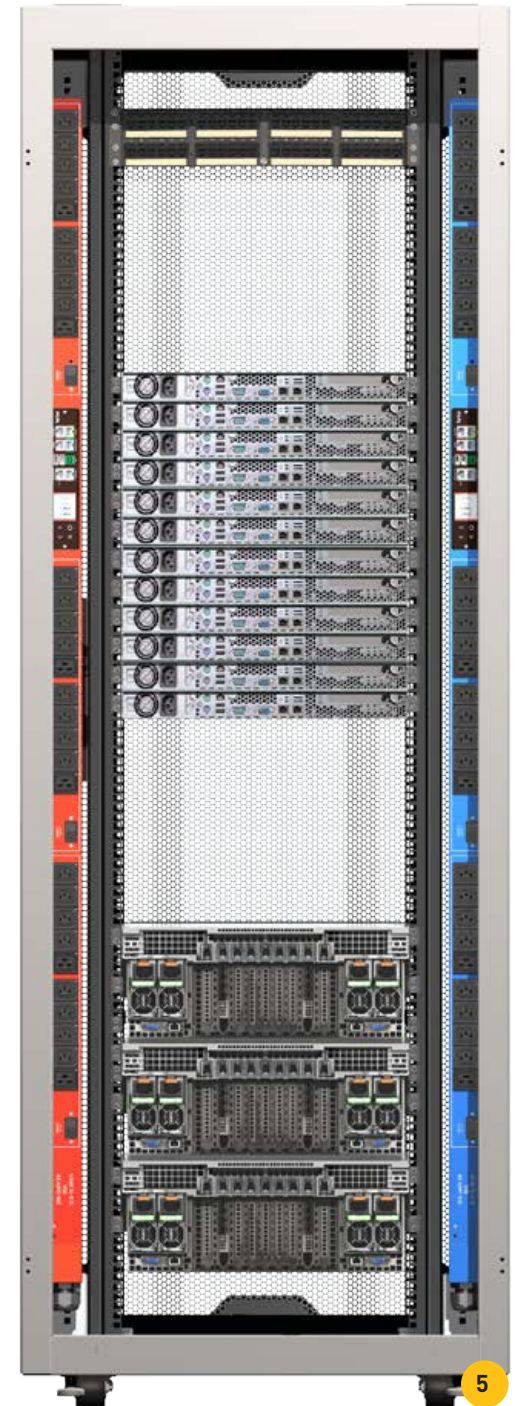
**Encryption:** All data sent or received by the PDUs is encrypted by HTTPS and SSH.

**Password Policies:** All intelligent PDUs are embedded with security features including strong password, force password change, and password expiration.

**Firewall:** The PDUs are equipped with IP-Based Access Control Lists (IP ACL) and Role-Based Access Control (RBAC) rules to protect from unauthorized access.

**Defense in Depth:** Protects against network breaches by blocking access after repeated failed logins, timing out inactive sessions, limiting multiple logins with the same information, and enforcing restricted service agreement warnings.

**Certificates:** The use of X.509 digital certificates ensures that both parties in a secure connection (TLS) are authorized users.



# Power Sharing Prevents Downtime

The innovative power sharing feature is an expansion port built into the PDU designed to provide redundant power to each connected PDU controller in the event that a power issue occurs.

Even if one power feed fails, both PDUs in the cabinet maintain network connectivity and continue monitoring and alerting.

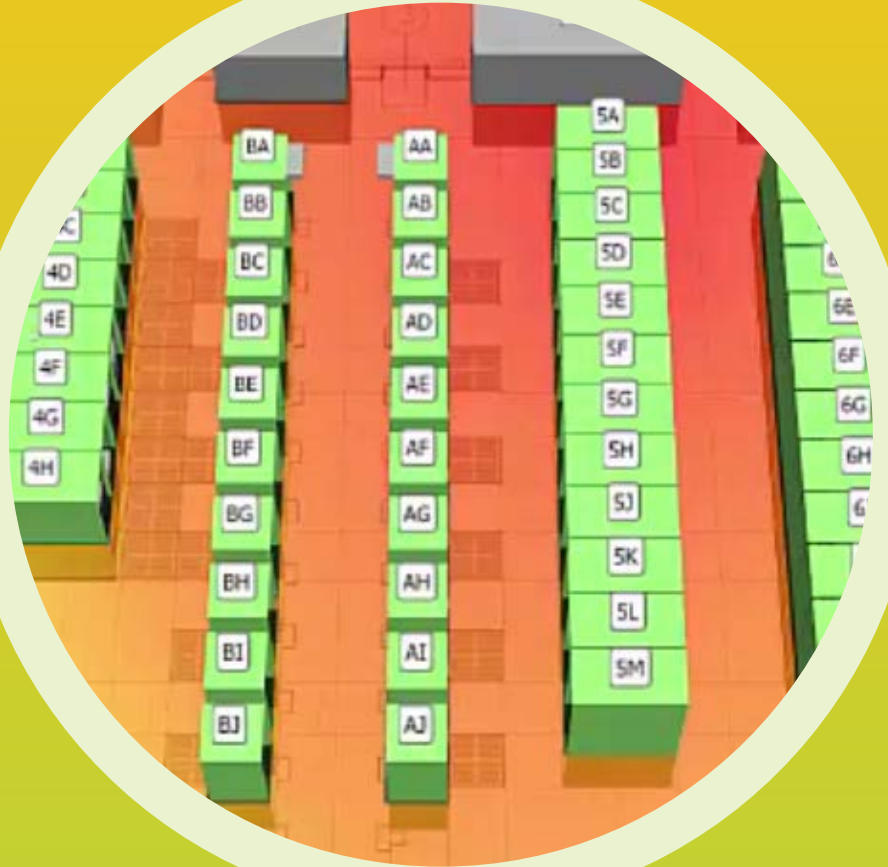


# Advanced Monitoring and Alerting Prevents Downtime

The +1/-1% billing-grade accurate monitoring of user-defined thresholds ensures that potential power failures are identified far in advance. When set thresholds are surpassed, timed alarms are sent to notify you of potential risk conditions in the power chain.

In addition, optional plug-and-play environmental sensors for temperature, humidity, airflow, differential air pressure, and leaks provide users precise monitoring of data center conditions.

By measuring temperature and humidity at the rack level, you can leverage sensors to clearly identify cooling inefficiencies, hot spots, or airflow recirculation in your IT equipment to identify potential risks.





# Smart Design and Build Improve Reliability

Every Raritan PDU is tested for safety and reliability through a stringent manufacturing process. Each individual PDU delivers a 35% shallower frame than comparable competitive products.

- **Flush-mount circuit breakers - shallow footprint; no “dog houses”**
- **Full color, powder-coated chassis**
- **Rugged input cord glands (no clamps) for more reliable cable strain relief**
- **Fully hot-swappable controller with no “loose” screws**
- **Phase markings printed on PDU chassis minimizes error**
- **No vent holes / air-tight assembly: prevent long-term internal short circuit risk**
- **Extruded aluminum chassis for premium build quality and heat dissipation**





# Reliable PDUs Lead to Reliable Data Centers

Data centers are the foundations on which businesses run on in a digital world. With data centers relying on continuous uptime and efficiency, having the right devices are imperative. At Raritan, with a history of innovations that spans over 3 decades and trusted in over 60,000 locations worldwide, we ensure that our intelligent PDUs are the ultimate power management solution for your data center.



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