
Top 40 Data Center KPIs
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Introduction

Modern data center managers are under constant pressure to do more with less while simultaneously being tasked with maximizing uptime and optimizing for efficiency and capacity utilization. In today's ever-changing data center environment, insights from data provide a critical competitive advantage to help tackle these challenges.

To gauge success and ensure business objectives are met, data center managers are increasingly turning to big data analytics to provide the necessary information, but with the massive volume and variety of data generated by data center devices, they don't always have the time or training to be able to collect that data, analyze it, and ultimately derive value from it. Plus, when using legacy tools like Excel and Visio, it's simply not possible to holistically see and analyze this data.

So how do you know where to begin, what to track, and what your goals should be? Based on our conversations with hundreds of customers in our global user groups for our Data Center Infrastructure Management (DCIM) solution, we've consolidated feedback on what data matters the most and compiled a list of the top 40 Key Performance Indicators (KPIs) that all data center managers should monitor to improve the overall health and efficiency of their data centers.

If the list seems overwhelming, know that measuring these KPIs is easy with DCIM software. In fact, with a modern DCIM solution, many of the KPIs come right out of the box in dashboard widgets and reports requiring zero configuration. Start monitoring the Top 40 Data Center KPIs in your environment and enjoy smarter, more data-driven decision-making across all facets of data center management from asset management to capacity planning to energy efficiency.

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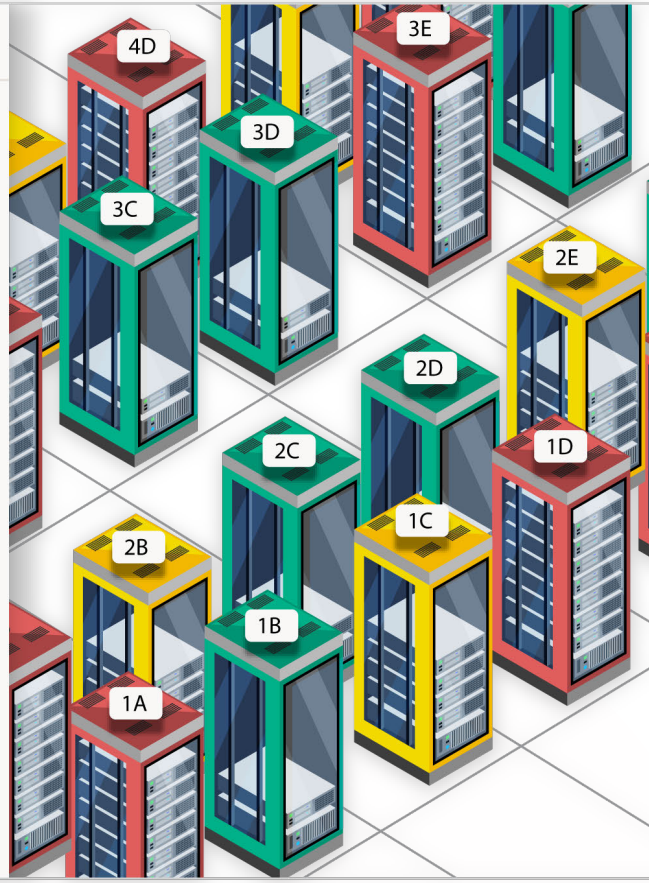
Capacity KPIs

1. Capacity by Key Data Center Resource (Space, Power, Cooling, and Data/Power Port Connections)

Having accurate, reliable, real-time information on the physical space, power, cooling, and network connectivity capacity in your data center is essential for making the most informed, data-driven decisions when you need to reserve space and deploy new IT equipment, use power resources more efficiently, save on operating expenses, or convince management you need more capacity. Being able to monitor real-time capacity at the site, floor, and cabinet levels greatly simplifies how you can find and reserve resources.

Cabinet	Available RUs
1B	34
2C	32
2D	31
2F	31
3C	31
3D	30
1C	26
2B	25
2E	24
4C	20
4E	18
1A	16
1D	15
1E	13
3B	10
3E	8
4E	3

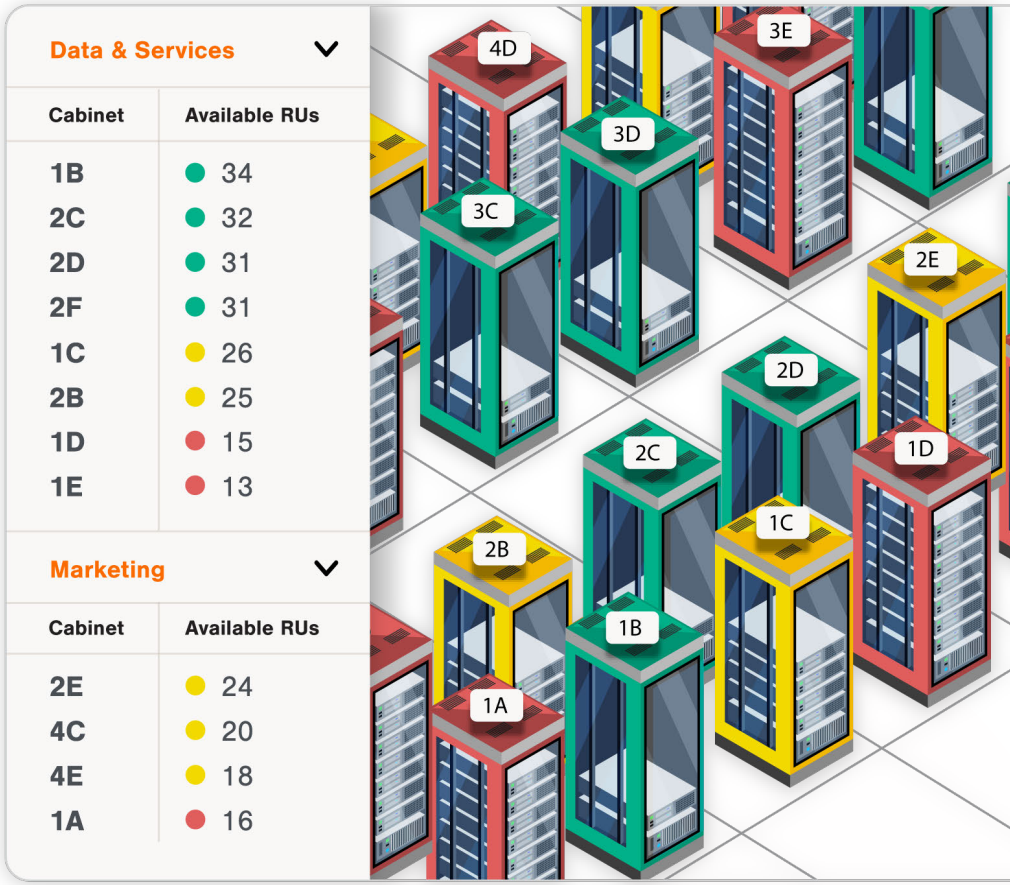


Did you know?

In a survey by EMA, 57% of IT executives reported that their top priority is reclaiming and/or re-purposing hardware and software that is underutilized.

2. Capacity by Logical Groups (Space, Power, Cooling, and Data/Power Connections by Function, Department, etc.)

For an extra level of granularity, plan and manage your capacity not only by data center resource, but by logical groups such as function, department, business unit, and customer. Data center projects are often assigned according to these logical groups; therefore, you should monitor each group's capacity utilization to properly allocate resources.



Did you know?

Traditional spreadsheets and CAD drawing programs make the intricacies of data center capacity management unnecessarily difficult, inefficient, and unreliable. To simplify and accelerate capacity demand planning, many organizations are turning to data center business intelligence, dashboards, and analytics.

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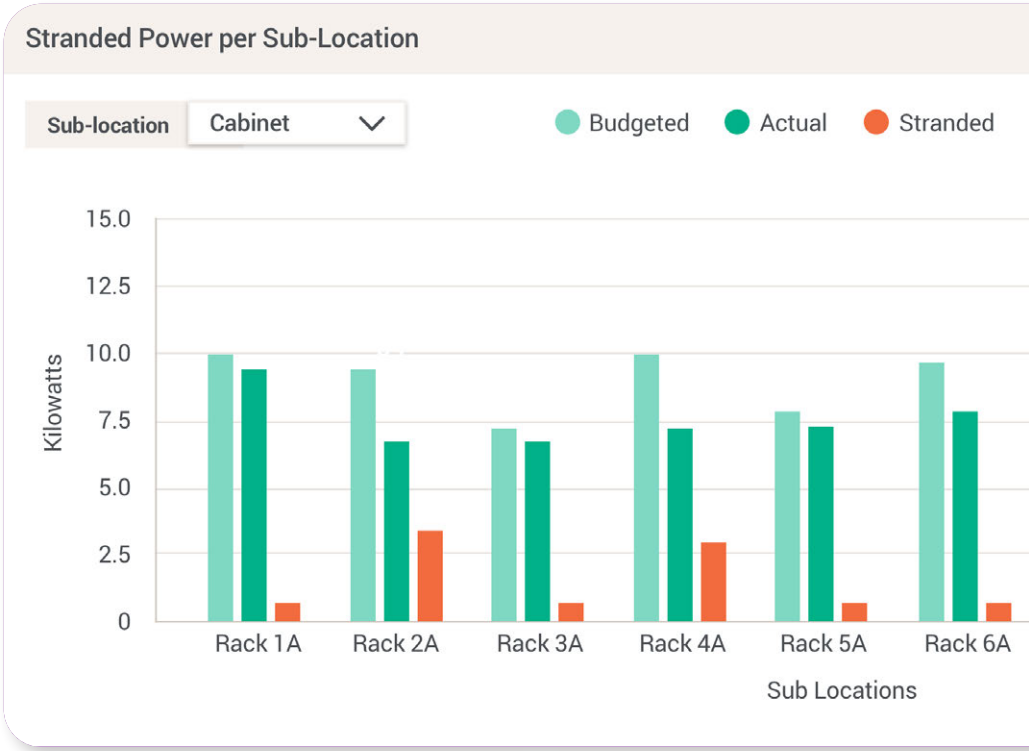
3. Stranded Power Capacity Per Rack

Data center managers will often allocate more power to each rack than is actually demanded by the IT equipment. This causes stranded power that can be deployed elsewhere in the data center to save costs. For a single rack, a few kilowatts of stranded power may seem unremarkable, but when you factor in hundreds or thousands of racks, stranded power could account for as much as 50 percent of all available power. Monitor power consumption in your data center to identify stranded capacity. Then, deploy that power with confidence and delay spending millions to build your next data center.



Did you know?

Through tests in its own data center, Raritan determined that even at peak power consumption, 83% of their servers were using 60% or less of their nameplate rating.

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4. What-If Analysis

What-if analysis charts for space and power capacity can help you understand the potential net impact of changes in your data center—particularly additions and decommissions—without impacting equipment in use. Conducting what-if analysis on a per-project basis gives you the flexibility to add the same equipment in different combinations and locations to multiple projects so you can better determine when you will run out of capacity and how long you can delay capital expenditures.

Did you know?

What-if analysis allows you to quickly and accurately predict the future state of your data center and ascertain if you can postpone adding additional resources or if you need to purchase more.

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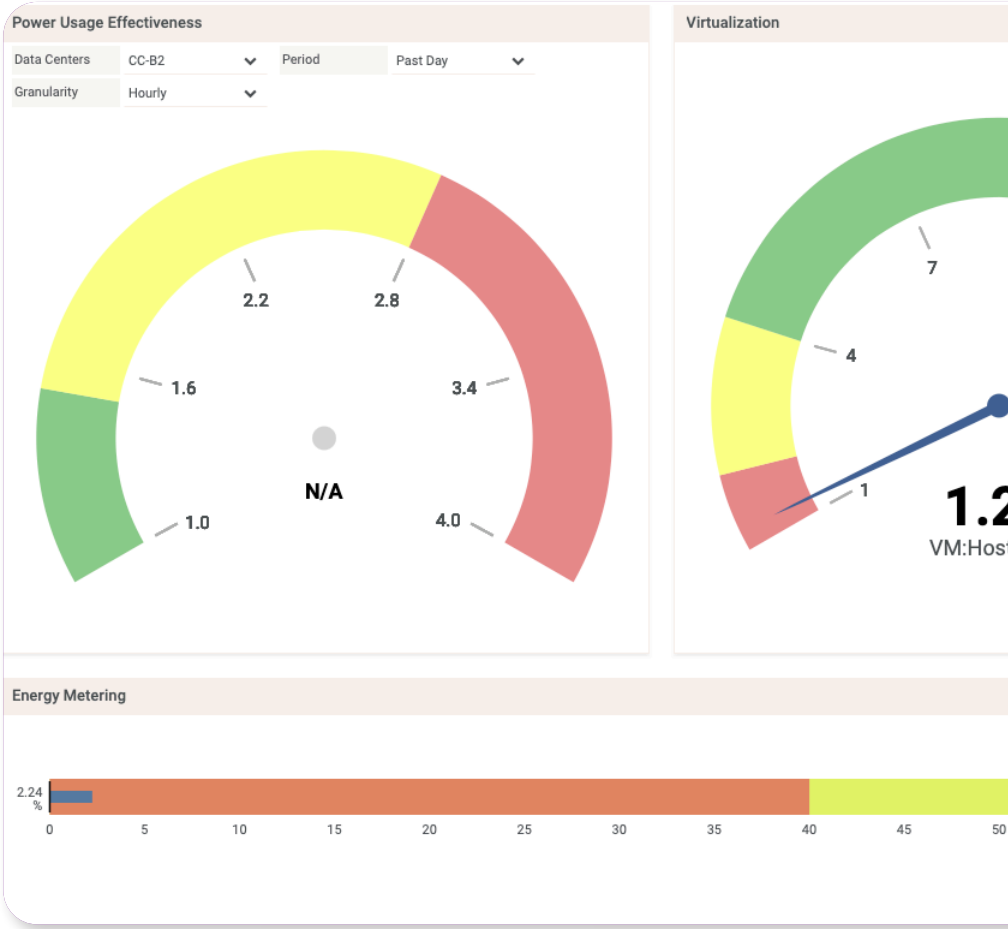
5. DCOI Compliance

The US government created the Data Center Optimization Initiative (DCOI) mandate to address the inefficiencies of its federal agencies' data center infrastructure. To comply with the DCOI, agencies are required to have 100% of data center infrastructure located in data centers that have power metering, have a PUE of less than or equal to 1.5 (or 1.4 for new data centers), have at least a 4:1 ratio of operating systems that are fully virtualized, utilize servers at least 65% of the time, and have at least 80% of the total floor area actively utilized for racks contain at least one physical server.



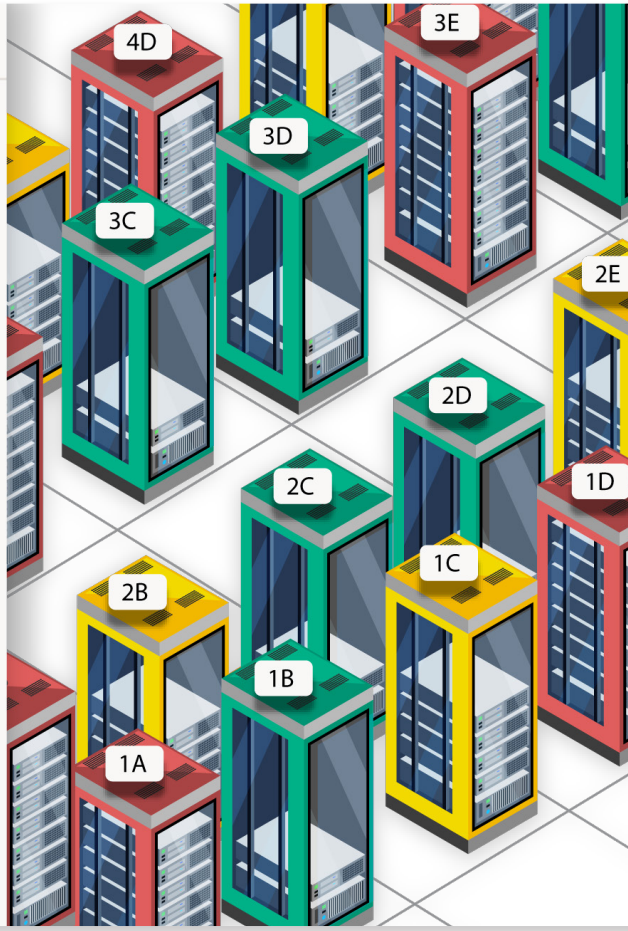
Did you know?

Since 2016, the US government has saved almost $2 billion due to the DCOI mandate.

6. Weight Capacity of Raised Floor

Raised floors allow for underfloor air distribution, chilled water piping, cable management, and water/flood protection. For standard access floors, panel load ratings typically range between 1,000 and 2,000 pounds. Know the weight load capacity of the raised floor system in your data center and monitor the total weight of your cabinets and equipment to ensure that you are not exceeding the capacity and that you have the weight capacity to deploy new equipment.

Cabinet	Available RUs
1B	12%
2C	15%
2D	20%
2F	20%
3C	21%
3D	25%
1C	33%
2B	35%
2E	42%
4C	47%
4E	51%
1A	66%
1D	67%
1E	67%
3B	73%
3E	80%
4E	80%



Did you know?

Properly using a raised floor can potentially reduce the cooling load by as much as 40%.

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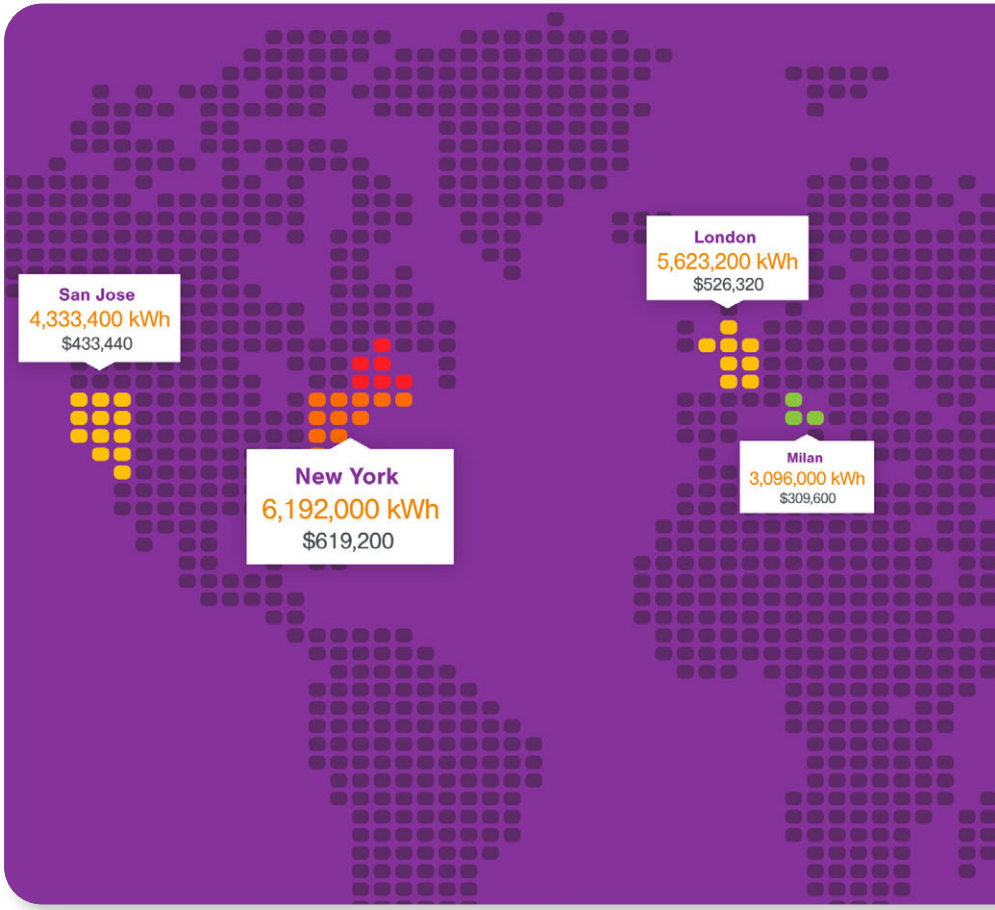
Cost KPIs

7. Data Center Energy Cost

IDC reports that energy consumption per server is growing by 9% per year globally as increases in performance drives energy demand. The cost of energy consumed can account for up to 50% total data center operating expenses, and as such, needs to be monitored and intelligently reduced. Track your energy consumption and costs by site, department, or applications/services, and set targets to reduce consumption, bill back users, meet corporate sustainability and green initiatives, and collect energy rebates and carbon credits.



Did you know?

If all the data centers of the world were a country, they would be the fifth-largest consumer of energy globally.

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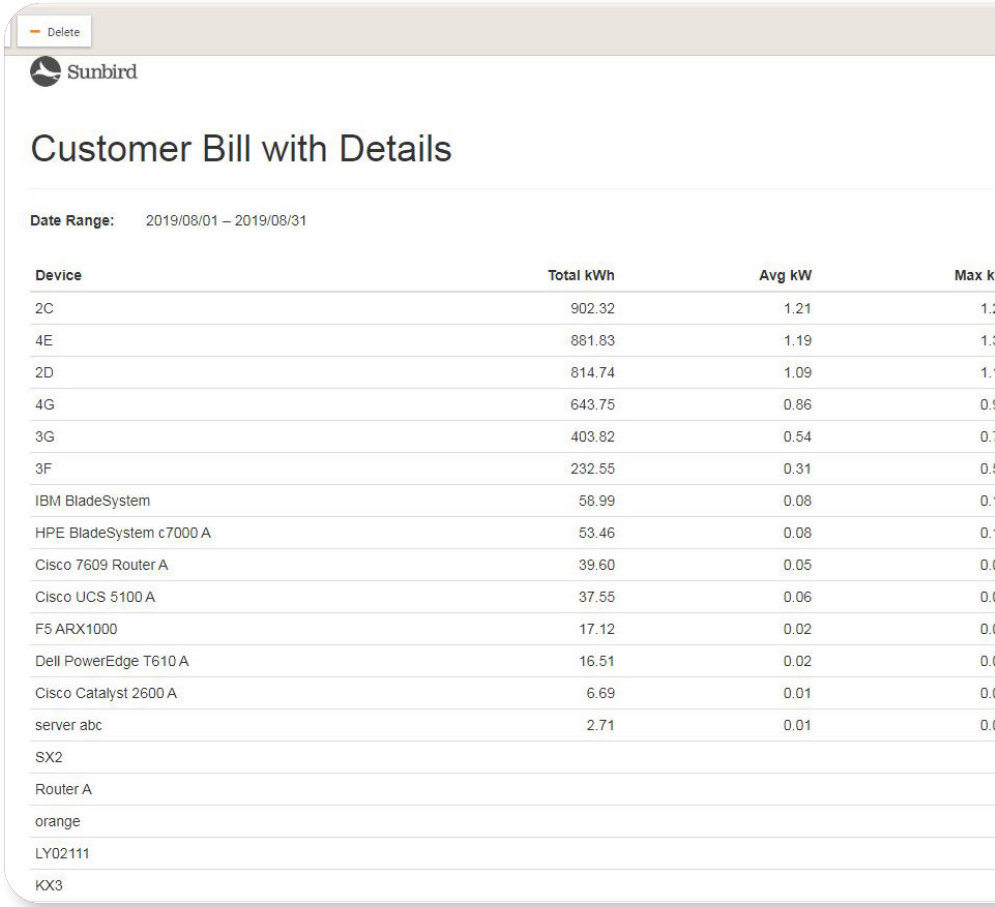
8. Cost Per Customer

Colocation data centers that lease power, space, cooling, and network resources to customers need to know what their costs are on a customer-by-customer basis in order to determine their prices. The amount of power needed for IT equipment and cooling, the cost of space per square foot, and internet and cross-connect charges should be monitored per customer to ensure prices are competitive while remaining profitable.



Device	Total kWh	Avg kW	Max k
2C	902.32	1.21	1.2
4E	881.83	1.19	1.3
2D	814.74	1.09	1.1
4G	643.75	0.86	0.9
3G	403.82	0.54	0.7
3F	232.55	0.31	0.5
IBM BladeSystem	58.99	0.08	0.1
HPE BladeSystem c7000 A	53.46	0.08	0.1
Cisco 7609 Router A	39.60	0.05	0.0
Cisco UCS 5100 A	37.55	0.06	0.0
F5 ARX1000	17.12	0.02	0.0
Dell PowerEdge T610 A	16.51	0.02	0.0
Cisco Catalyst 2600 A	6.69	0.01	0.0
server abc	2.71	0.01	0.0
SX2			
Router A			
orange			
LY02111			
KX3			

Did you know?

Colocation customers who have DCIM software with an Auto Power Budget feature and intelligent metering infrastructure can know exactly what their power requirements are, ensuring they don't overspend on power.

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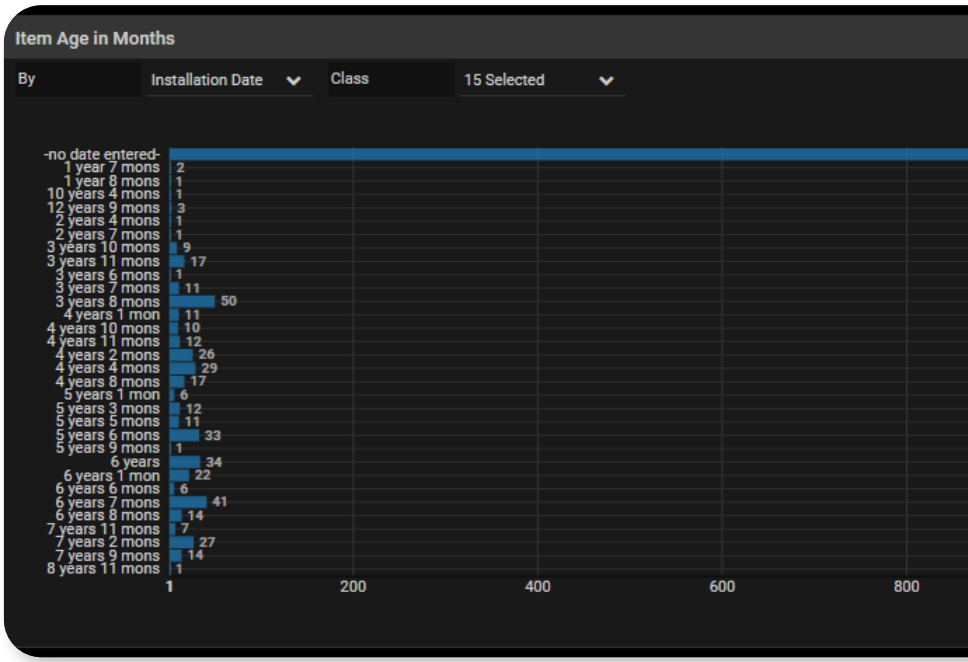
Asset KPIs

9. Asset Age in Months

Monitoring the age of all assets in your data helps you easily understand how old your hardware is and when you should look to begin your next refresh cycle. Filtering the data by equipment type such as cabinet, PDU, data panel, and device and by date-specific parameters such as purchase data, installation date, and contract start and end dates grants you full visibility into the lifecycle of all data center assets.



Did you know?

About one-third of the servers in a typical data center are more than 4 years old. These aging servers consume 65% of the overall energy while contributing only 4% of the data center's total performance capabilities.

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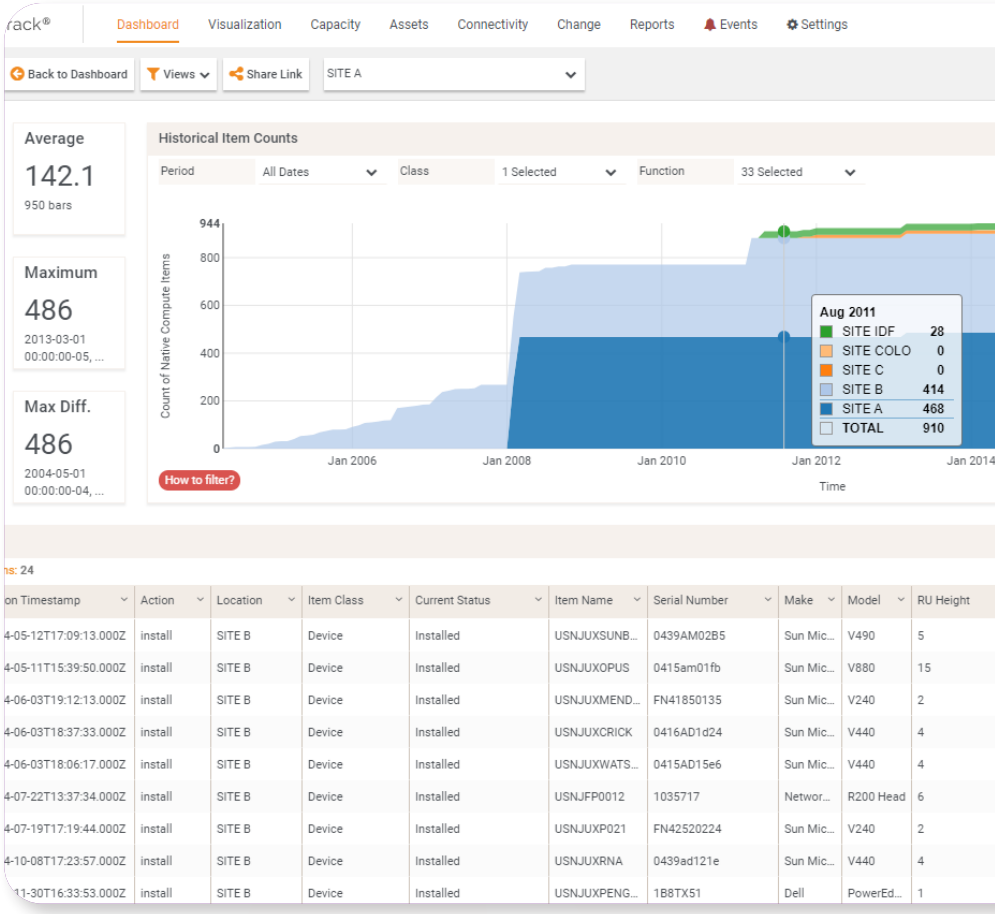
10. Asset Deployment Trends

Having historical data on the number of assets in the data center lets you know your rate of growth and project future expansion needs. Monitor your asset count, in terms of installations minus decommissions, for a high-level view of your data center over time. Drilldown by the assets' functions for a more detailed view of where your data center has been and where it's heading.



Did you know?

DCIM software lets you democratize your data with secure, shareable links that help you collaborate with cross-functional teams based on the same information.

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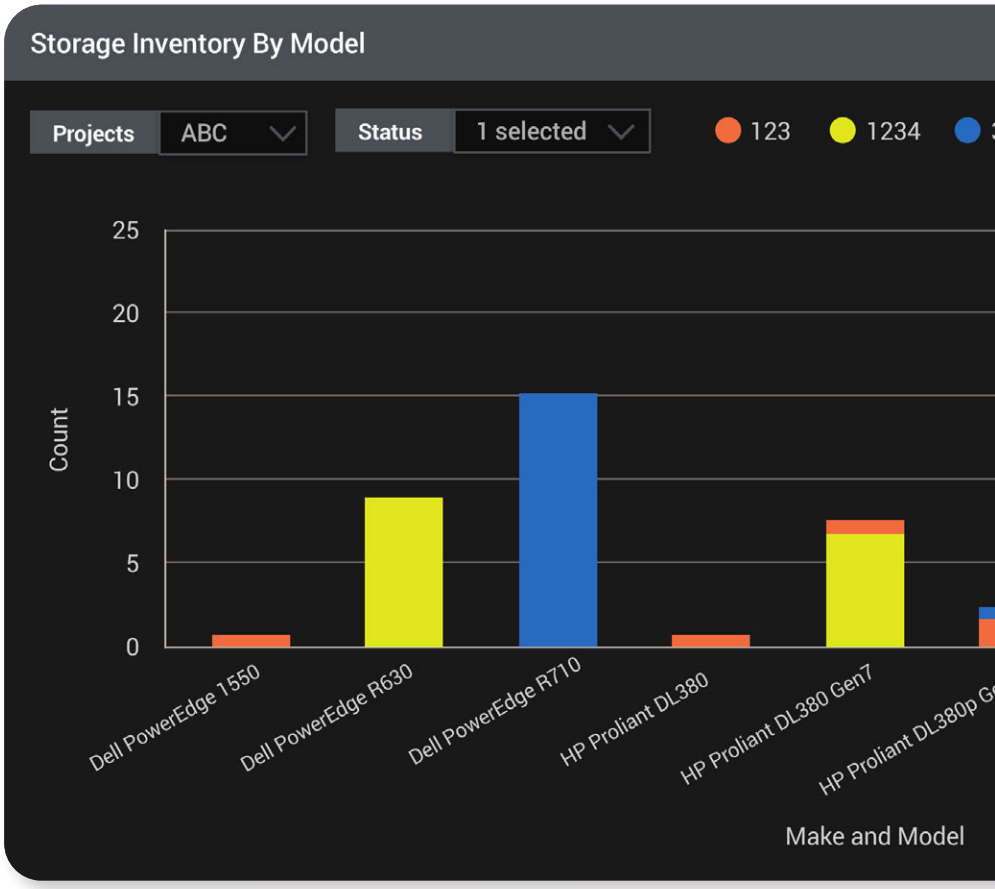
11. Available Inventory of Devices and Field Replaceable Units

Proper IT inventory administration practices are necessary for organizations to effectively manage their systems and save money by delaying the purchase of new IT assets. Unfortunately, many organizations still rely on manual processes and outdated spreadsheets to track their asset inventory, which can be hard to maintain and error-prone due to limited budgets, staffing shortages, and an overwhelming number of assets to cover. Be assured that your available inventory is accurate by using an asset tracking platform that delivers actionable, real-time data about all your physical data center infrastructure.



Did you know?

After deploying a DCIM solution in their data centers, UF Health Shands reported a 50 percent improvement in asset tracking efficiency.

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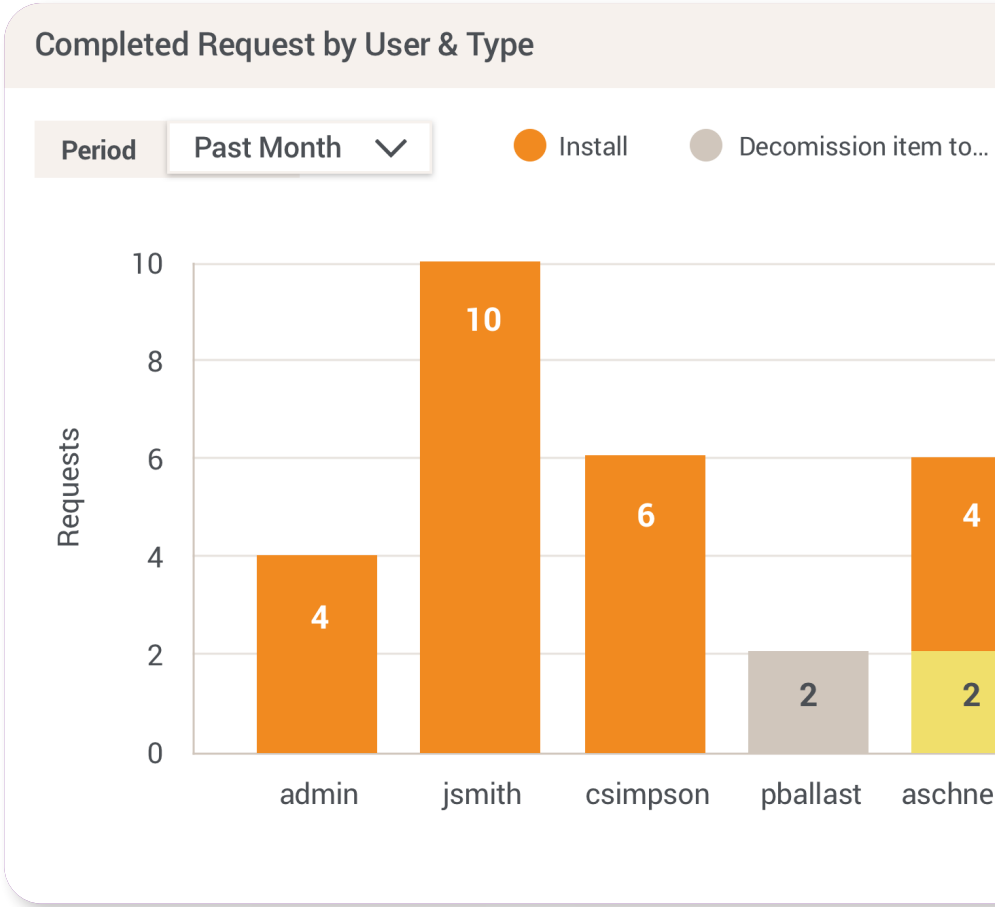
Change KPIs

12. Change Requests by User, Stage, and Type

In a typical data center environment, up to 30% of servers get replaced annually because servers older than five years fail three times more often and cost 200% more to support than new servers. To maintain SLAs while improving efficiency and productivity of data center staff, it is important to simplify the management of moves, adds, and changes. Track the number of change requests, tickets, and work orders, who is making them, what progress is being made, and what types of changes are being requested. Monitor and manage your requests from creation to approval to ensure work order quality and transparency while improving staff efficiency through improved collaboration.



Did you know?

"High-performing" IT organizations are described as having change success rates over 99%, spending less than 5% of time on unplanned work, and having server to system administrator ratios greater than 100:1.

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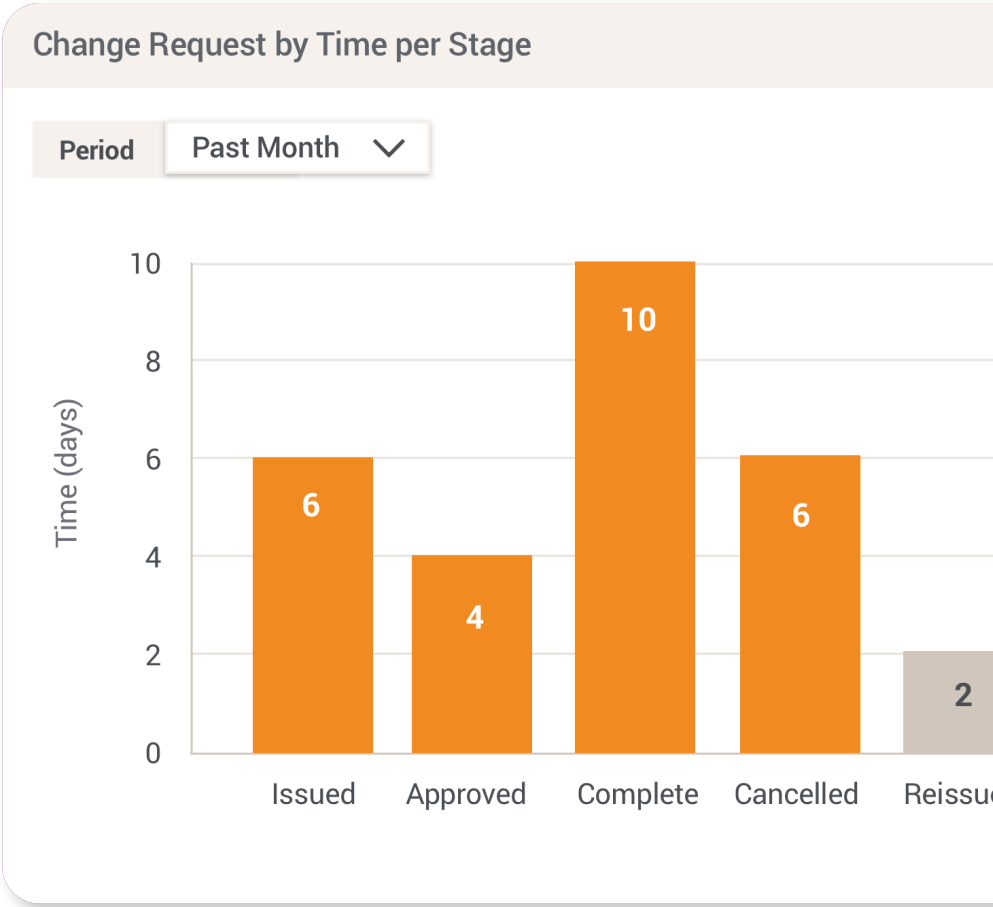
13. Change Request by Length of Time per Stage

Data center managers need to know how long it takes to implement a change from request to completion to ensure that they are meeting their SLAs with customers. By monitoring how long each stage of a change takes—from planning to approving to implementing—you'll have real data to compare against your SLAs. Should changes take too long in your data center, you can examine the data and identify why and in what stage the bottleneck happening.



Did you know?

With downtime costing over $300,000 per hour on average, the inability to provide reliable service can have grave consequences for a customer.

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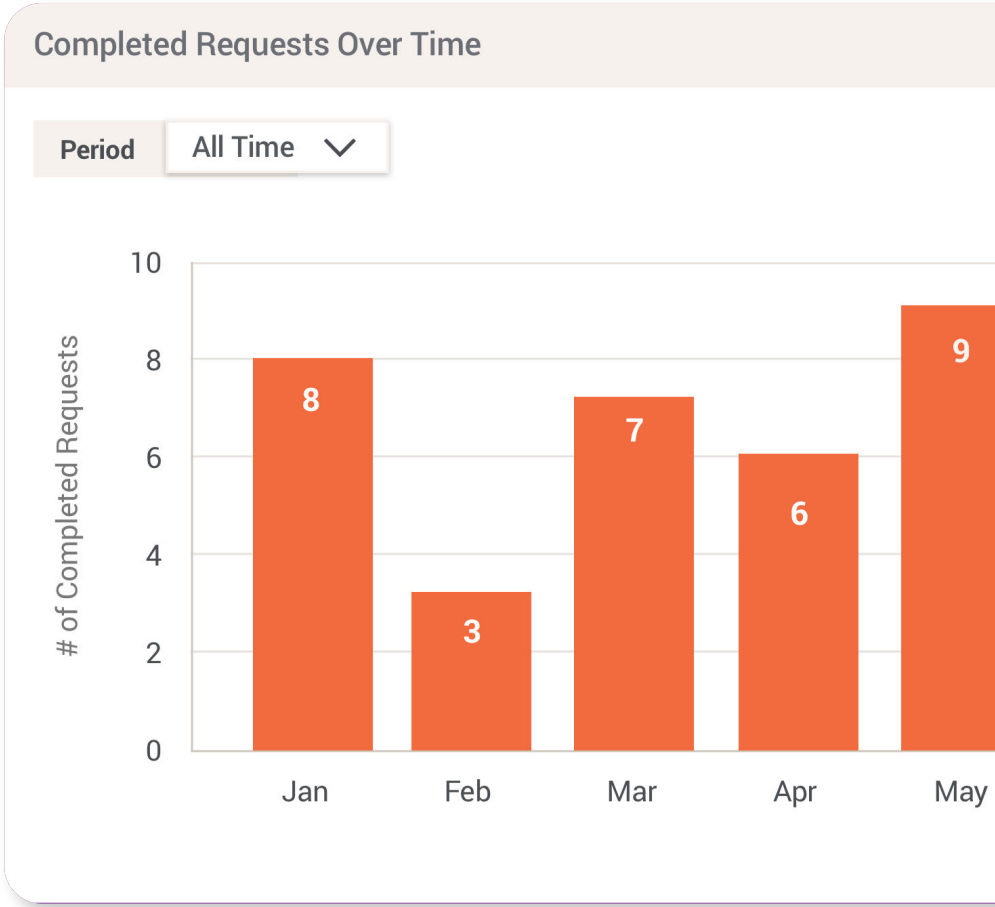
14. Completed Requests Over Time

It's important for data center managers to know how much work is being done in the data center. One method of doing this is by monitoring the number of moves, adds, and changes over time. By tracking data center activity and productivity in this manner, you can determine whether the number of employees in the data center is justified or not, troubleshoot outages more easily, and be able to bill your customers more accurately. Your goal number of completed requests should be relative to your specific data center and the amount of people in your facility.

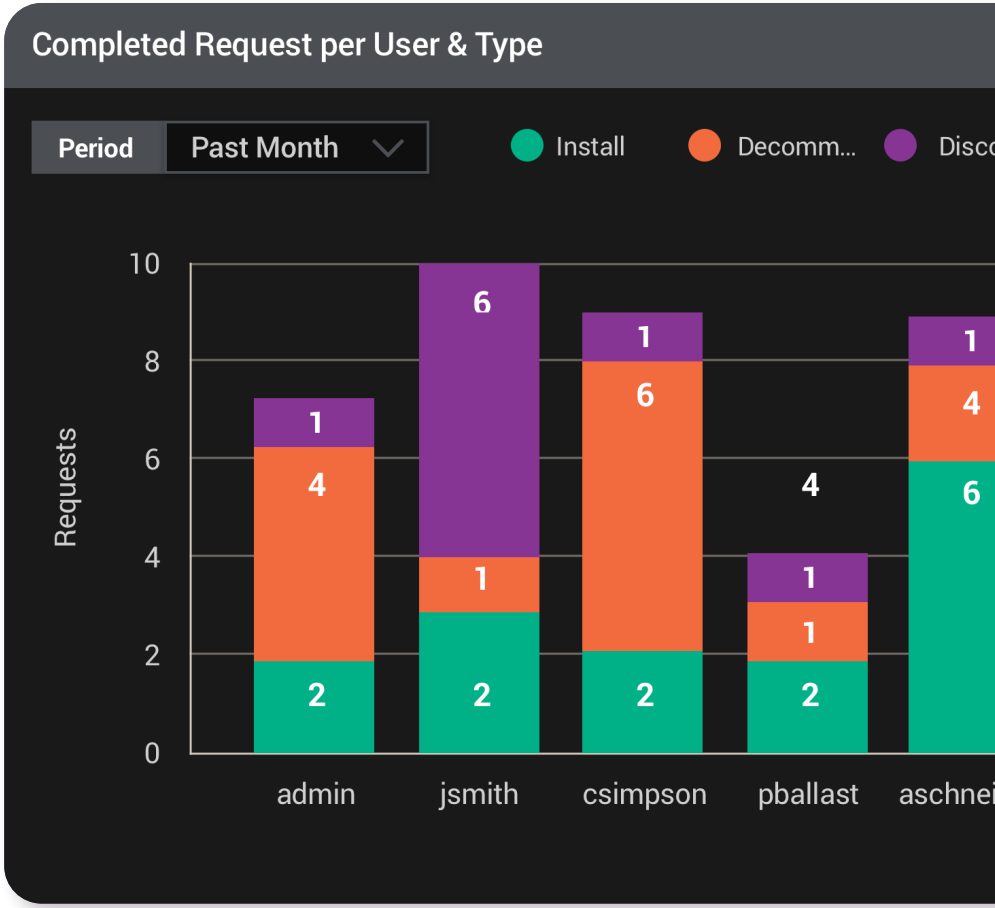


Did you know?

Being inadequately staffed can wreak havoc across the data center. According to the Uptime Institute, 39% of data center incidents can be attributed to human error caused by fatigue, lack of knowledge, or not following proper procedures.

15. Changes Per Person

Data center managers rely on KPIs to inform their decision-making, but they need to trust that their data is accurate and reliable. For the most accurate data, data center mangers must hold their team accountable to properly log the work they do in the data center. Track the number of changes per person to make sure that every single employee is entering data, that they are doing so correctly, and that they're productivity is satisfactory.



Did you know?

The Uptime Institute reports that 61% of data center managers describe having significant difficulty retaining or recruiting staff.

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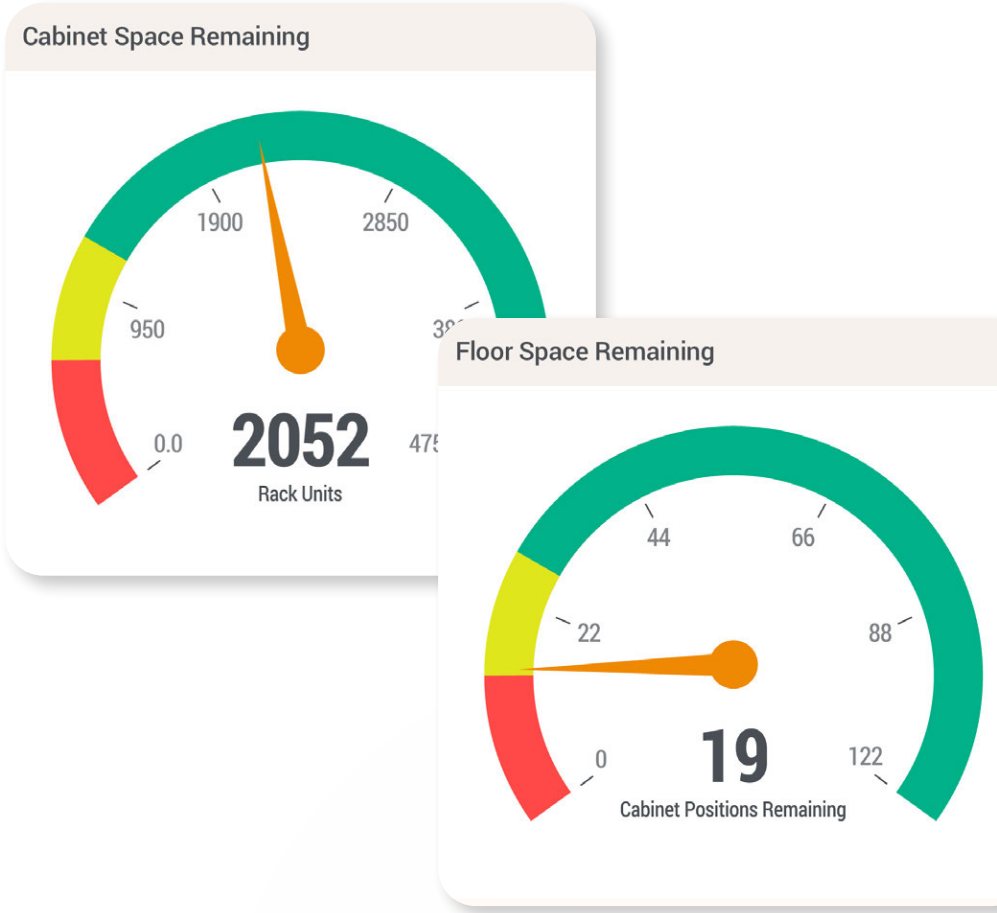
Space KPIs

16. Available Floor and Cabinet Space Remaining

Intelligent space capacity planning is key to navigating data center expansion and optimization. Track available cabinet space by open rack units, including contiguous rack units, to know how efficient your use of space is and to correlate how much space vs. power capacity you have to deploy new devices. You should also track available floor space by open cabinet positions to know how much white space is available to deploy new cabinets on the data center floor. Include planned decommissions and future planned deployments in your reporting for the most accurate view of actual remaining space capacity.



Did you know?

A single cabinet can consume up to 42 square feet of floor space after accounting for hot and cold aisles, access corridors, and power and cooling systems.

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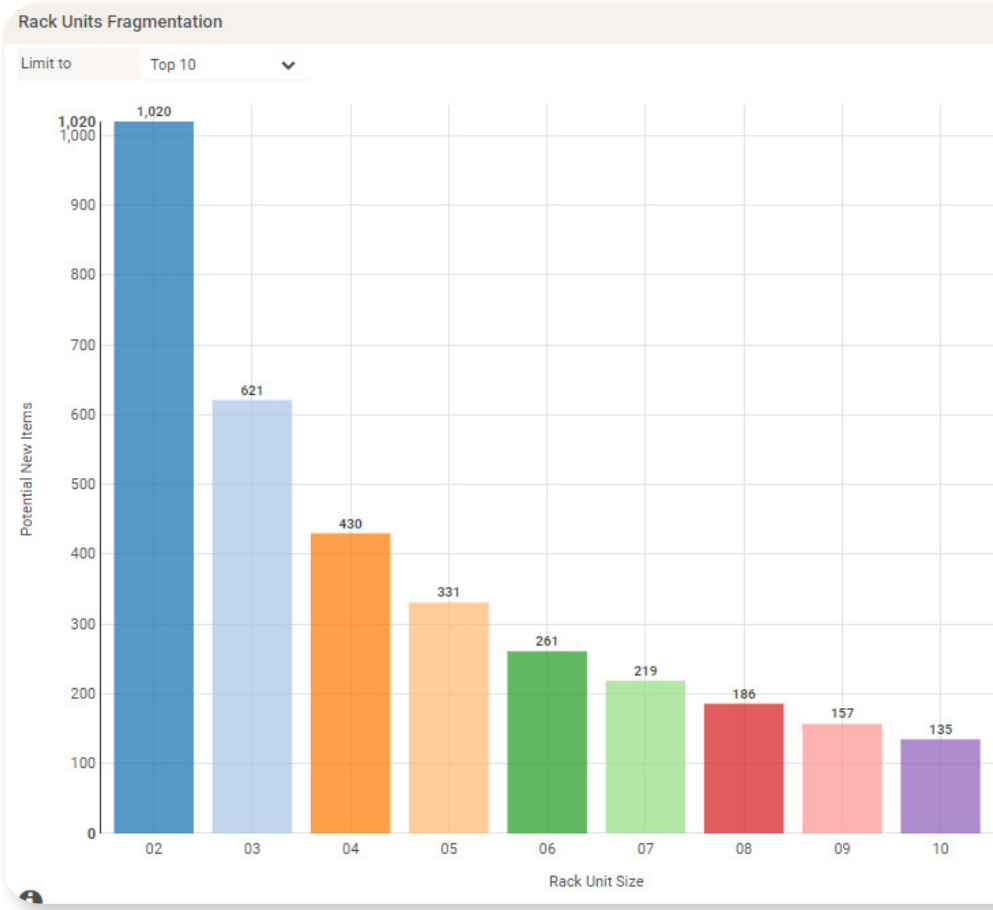
17. Available Space by Rack Unit Size

Knowing how much available cabinet space is available in a location is helpful to track efficiency and capacity for growth, but monitoring available space by rack unit size, a KPI known as rack unit fragmentation, provides an extra level of detail. This KPI allows you to see how many items can be installed in your data center based on RU height and lets you visualize the correlation of equipment size to capacity. Ideally, you will see a smooth decline in capacity as RU height increases. Otherwise, as equipment gets larger, you may run out of space because the space you have is already fragmented into smaller RUs.



Did you know?

Cabinets are getting larger, with shipments of cabinet sizes larger than 42 rack units expected to outpace the industry standard soon. Concerns about large racks include logistical limitations, increased weight, more difficult cable management, and cooling issues.

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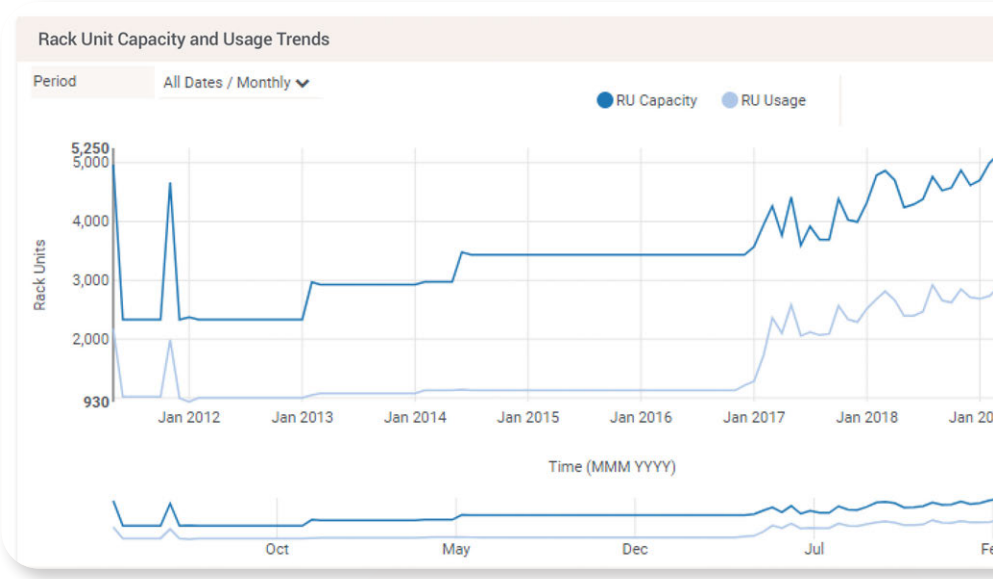
18. Rack Unit Capacity and Usage Trends

Another great way to gain insight on the cabinet space capacity in your data center is to trend that data over time. See the impact of installations, decommissions, and additional space on capacity growth or decline in one glance to know exactly when you will run out of space capacity.



Did you know?

The benefits of the standard 42U server cabinet are it provides room to grow into, improves security with lockable doors, allows for proper airflow, is compatible with a wide variety of vendors, and allows for easy access and maintenance.

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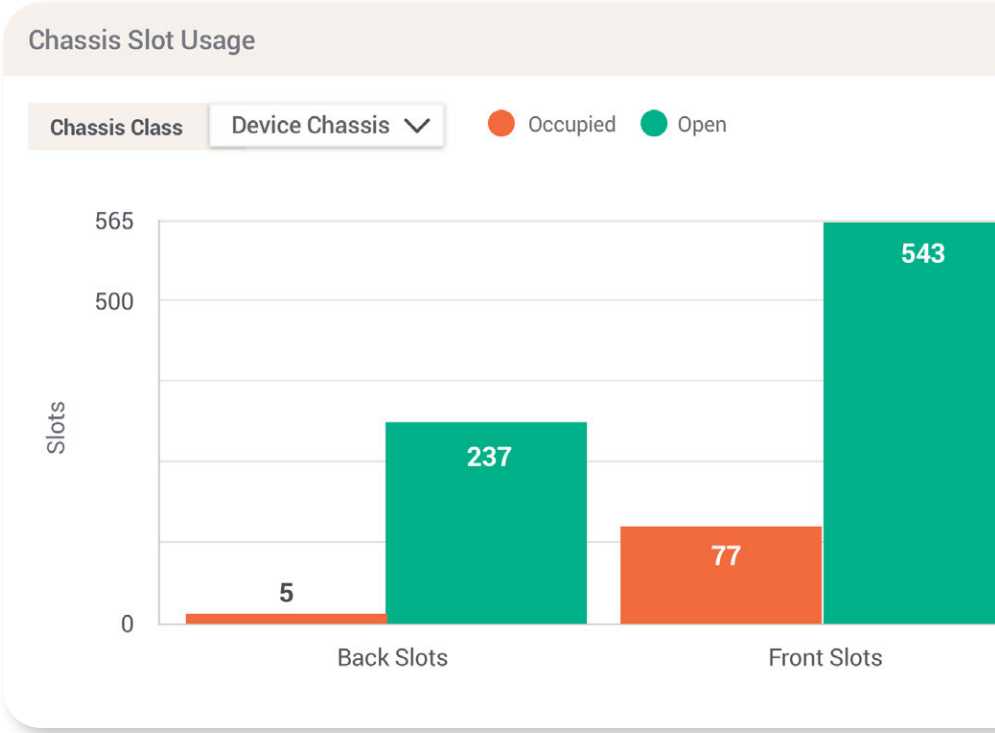
19. Server/Network Blade Chassis Slot Usage

Blade servers minimize the use of physical space and energy by being modularly designed and not having many non-computing components. Each blade fits inside a blade enclosure, or chassis, which holds multiple blades and provides the necessary power, cooling, and networking. Optimize the capacity utilization of each blade chassis in your data center by monitoring the number of occupied and free slots in both the front and back slots. You will know exactly how densely populated your enclosures are and can easily identify when you need to purchase additional enclosures, blades, or both.



Did you know?

A blade system requires up to 85% less cabling compared to the same number of conventional 1U rack-mount servers.

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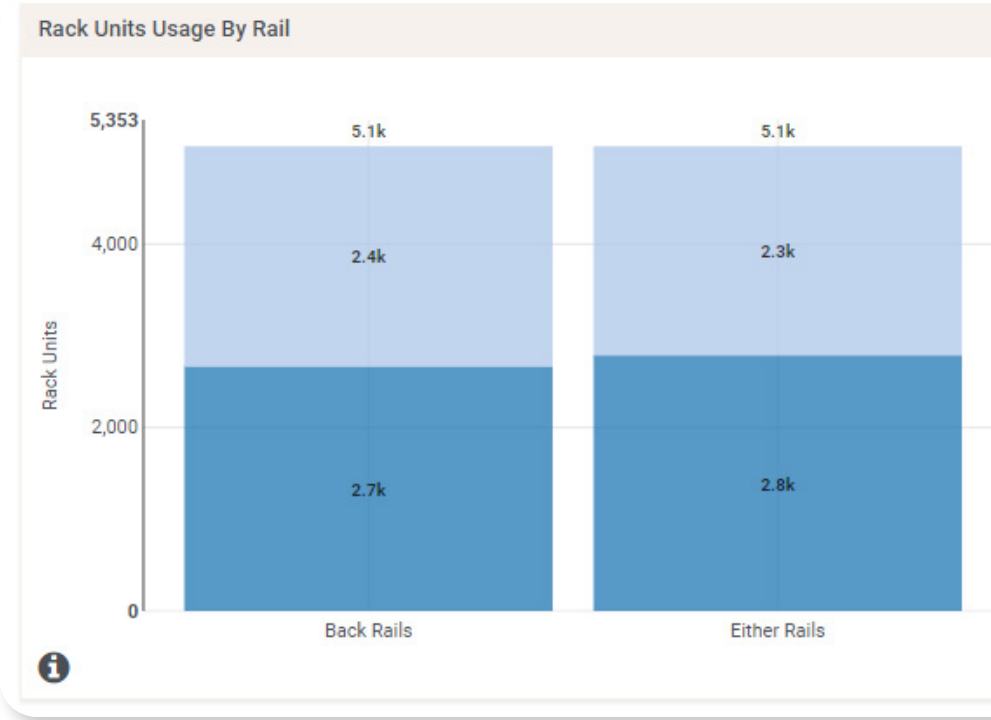
20. Rack Units Used by Rail

When installing an IT device in a cabinet, the device may have specifications that require it to be mounted to the front rail, the back rail, or both. Understand your capacity for where you can deploy equipment by tracking the number of rack units used by rail. This will help you ensure that you have the space for new devices that may have specific installation requirements.



Did you know?

Many new data centers are built with rows of empty racks to facilitate proper airflow for the time being until there is a need to fill them with servers.

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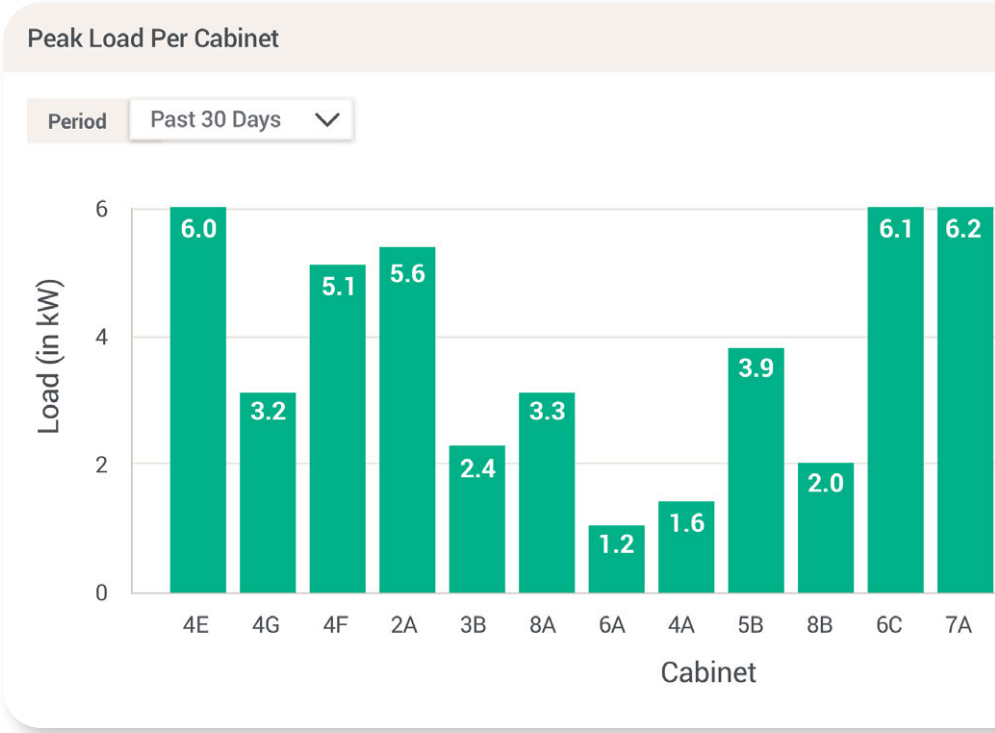
Power KPIs

21. Peak Power Load Per Cabinet Over Last 30 Days

Data center power resources are increasingly constrained, while managing to uptime competes with driving efficient power utilization. Data center managers need a complete view of how much power is being used, how much is available, and where efficiency can be improved. Measure active power from rack PDU inlet readings over time and set warning and critical alert thresholds for cabinet-level loads so that you are immediately notified before there is an issue and able to react before service is impacted. You will improve uptime and discover stranded power capacity.



Did you know?

High-density data centers, where each cabinet consumes more than 10 kW, often have much lower operational costs due to increased efficiency.

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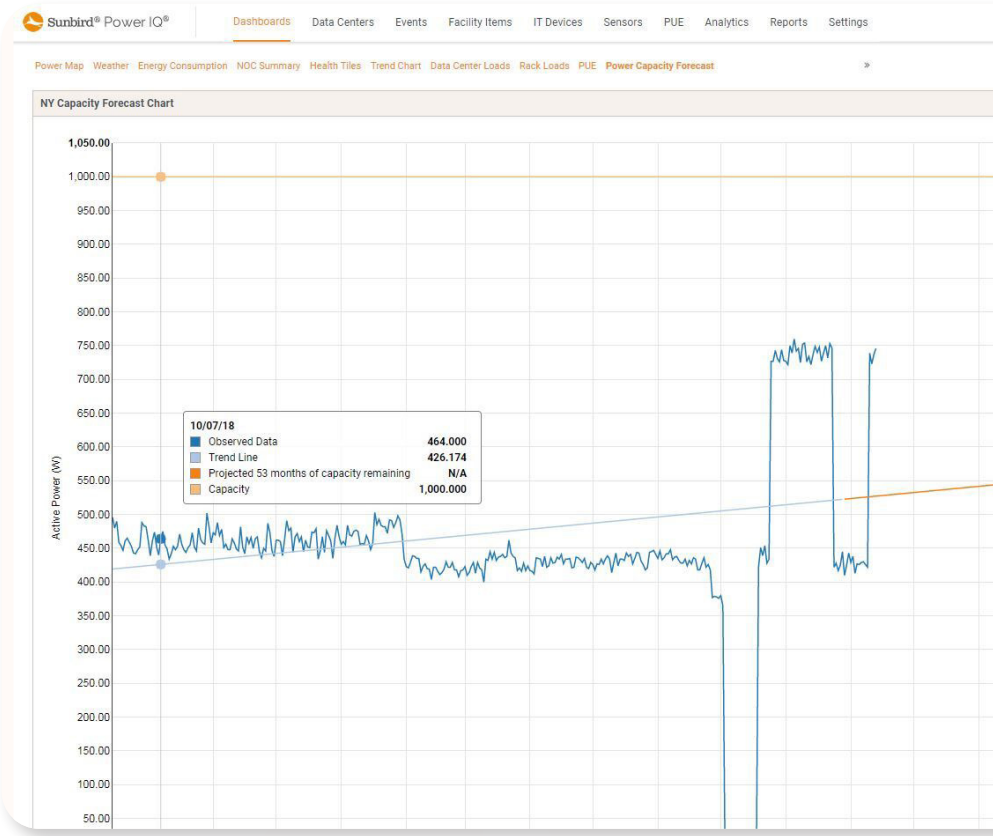
22. Days of Power Capacity Remaining

Being able to monitor and manage resources in real time is a key differentiator between data center managers who are successful and those who are not. By leveraging a data center monitoring tool that can identify your power consumption trends and forecast the number of days until you run out of power, you will know when you need to purchase more long before you actually run out of capacity.



Did you know?

In the last 30 years, power consumption per rack has grown over 750%, from 2.1 kW in 1992 to 16 kW today. Power capacity planning is now a top concern of data center managers, who must leverage intelligent PDUs and DCIM software to help reduce energy costs, analyze power trends, and optimize rack level power.

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23. Cabinet Power Failover Redundancy Compliance

Cabinets in modern data centers are densely packed with power-hungry hardware, and data center teams are under pressure to deliver increasing amounts of power to these devices. It is more important than ever to have a power redundancy solution to ensure that power is always available to IT equipment to minimize downtime. Track your cabinet power failover redundancy with the goal of achieving 100% compliance in your data center.

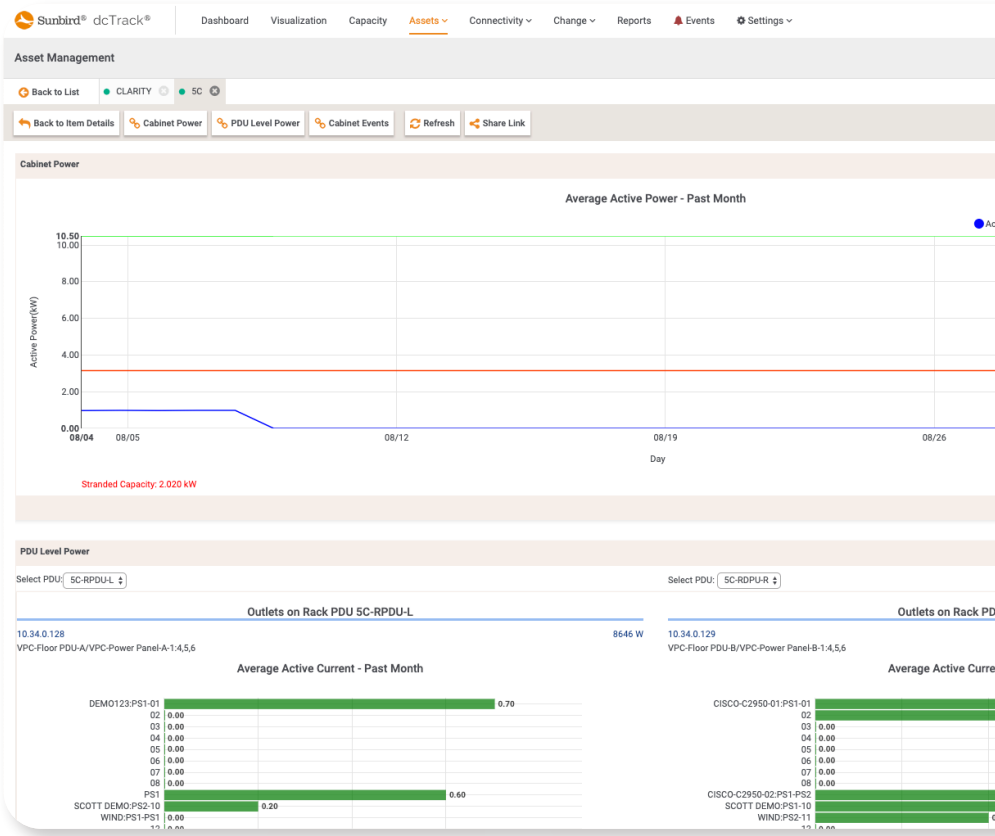
Did you know?

33% of survey respondents claimed that power outages were the number one cause of downtime and 80% said their most recent outage was preventable.

Cabinet	A Feed	B Feed	Failover
Rack 1A	40%	40%	80%
Rack 1B	35%	42%	77%
Rack 1C	50%	57%	107%
Rack 1D	52%	39%	91%
Rack 1E	44%	40%	84%
Rack 2A	38%	37%	75%
Rack 2B	42%	38%	80%
Rack 2C	55%	60%	115%

24. Power Trends by Cabinet with Peak Load Thresholds and Alerts

Maximizing uptime and improving data center health are key concerns for all data center managers. Many organizations likely take weekly or monthly measurements of their cabinet power consumption, leaving them vulnerable to short team peaks and potential overloads that are not detected. Monitor your power consumption per rack in real time, trend that data continuously, and set thresholds and alerts to ensure that you are notified and able to react before there is a major issue or users are impacted.



Did you know?

Monitoring power consumption at the server level will allow you to save money on energy by identifying and shutting down ghost servers and replacing power hogs with more efficient devices.

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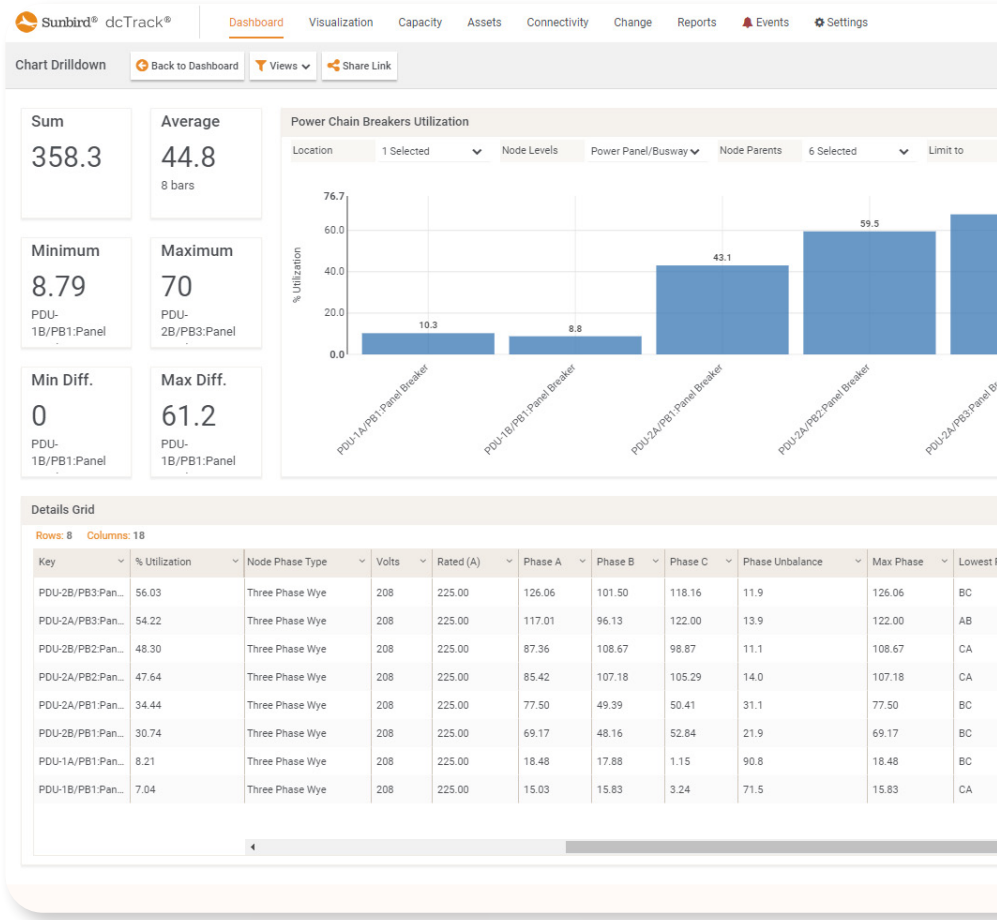
25. Power Chain Breaker Utilization

When circuit breakers are not monitored properly, they can become overloaded and cause downtime, create bottle necks in the power chain, or be underutilized causing you to not get the most out of your power resources. Optimize data center health and efficiency by monitoring the utilization of all the breakers in your power chain. For the most complete data, monitor the budget load, rating, load per phase leg, highest leg, lowest two legs, phase unbalance, and total load of each breaker at each level of the power chain hierarchy including rack PDUs, branch circuits, power panels, floor PDUs, and the UPS bank.



Did you know?

Intelligent PDUs with modern DCIM software will provide complete circuit breaker monitoring, allowing you to set thresholds for alerts when a circuit breaker gets close to tripping.

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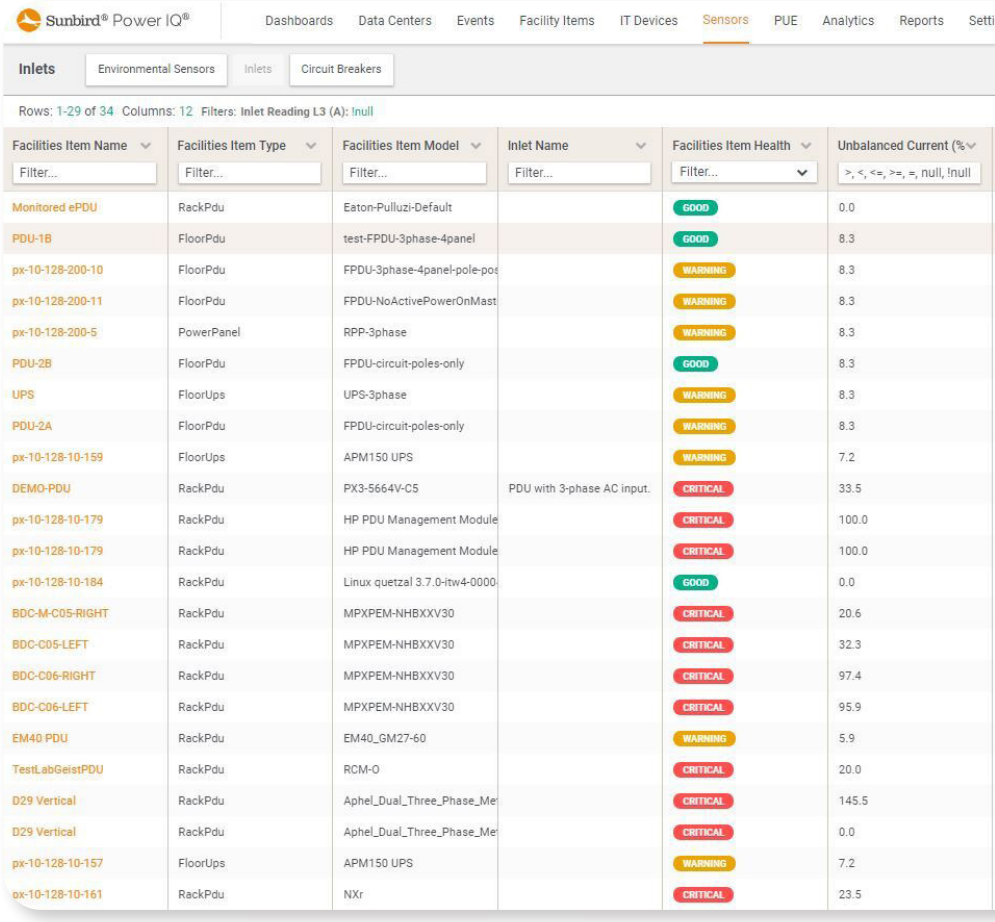
26. 3 Phase Load Balancing Percent Deviation

Managing the electricity load is one of the greatest technical challenges for many data center managers. When the system is unbalanced, power drops can occur due to one phase drawing more power than other phases. There can also be overheated phases or overheated neutral wires. Monitor your power consumption on each phase in real time and maintain a balanced load to maximize uptime, optimize power resource utilization, and keep IT infrastructure safe.



Did you know?

A three-phase power whip can deliver 1.73 times more power than a single-phase whip.

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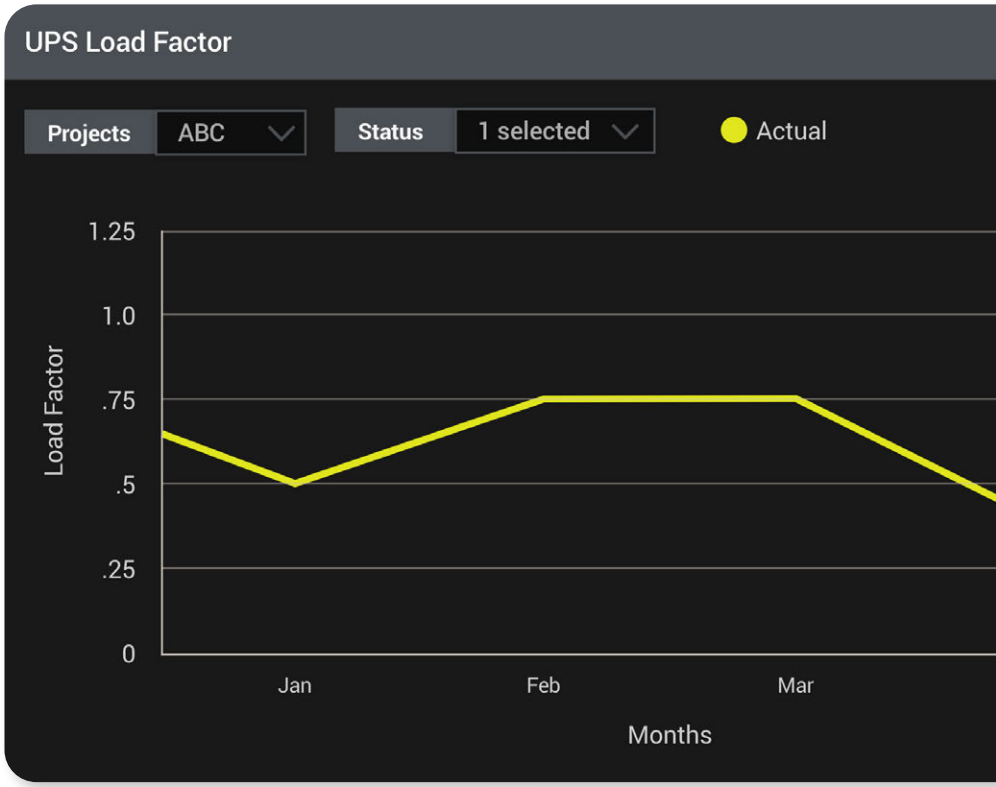
27. UPS Load Factor

Load factor is defined as the ratio of the actual load of a UPS to the maximum possible load that could have been used in the same time. A high load factor indicates more efficient energy utilization. Monitor your UPS load factors with the goal of maintaining a factor of 0.5 or higher. Ways to improve UPS load factor include shutting down some UPSs when redundancy levels exceed N+1, installing scalable/modular UPSs or a smaller UPS size to fit your present load capacity, or transferring loads between UPSs to maximize load factor for each UPS.



Did you know?

If you have a low UPS load factor, increasing it to industry standard benchmarks could mean substantial savings.

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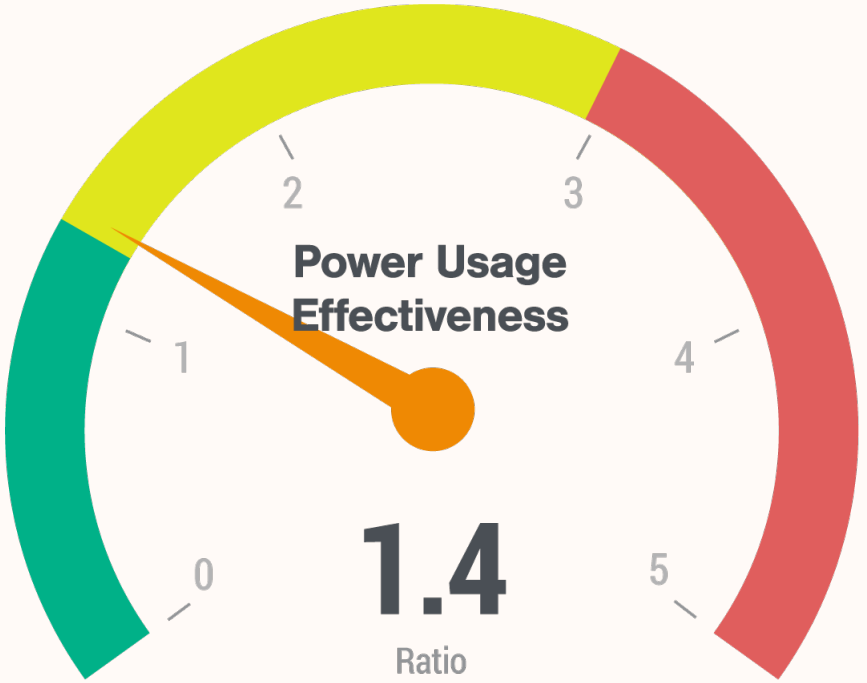
Efficiency KPIs

28. Power Usage Effectiveness (PUE)

PUE, a metric developed by The Green Grid Association, is the most commonly used KPI for reporting data center energy efficiency. It is a ratio of the total amount of energy used by a facility to the energy delivered to IT devices. You should target a PUE of less than 1.5 and even 1.2 if you have a newer data center or are moving to a newer colocation facility. If you have a very high PUE, you have a large opportunity for cost savings by implementing energy efficiency best practices in your data center. Track PUE over time to see the impact of your efficiency optimizations.

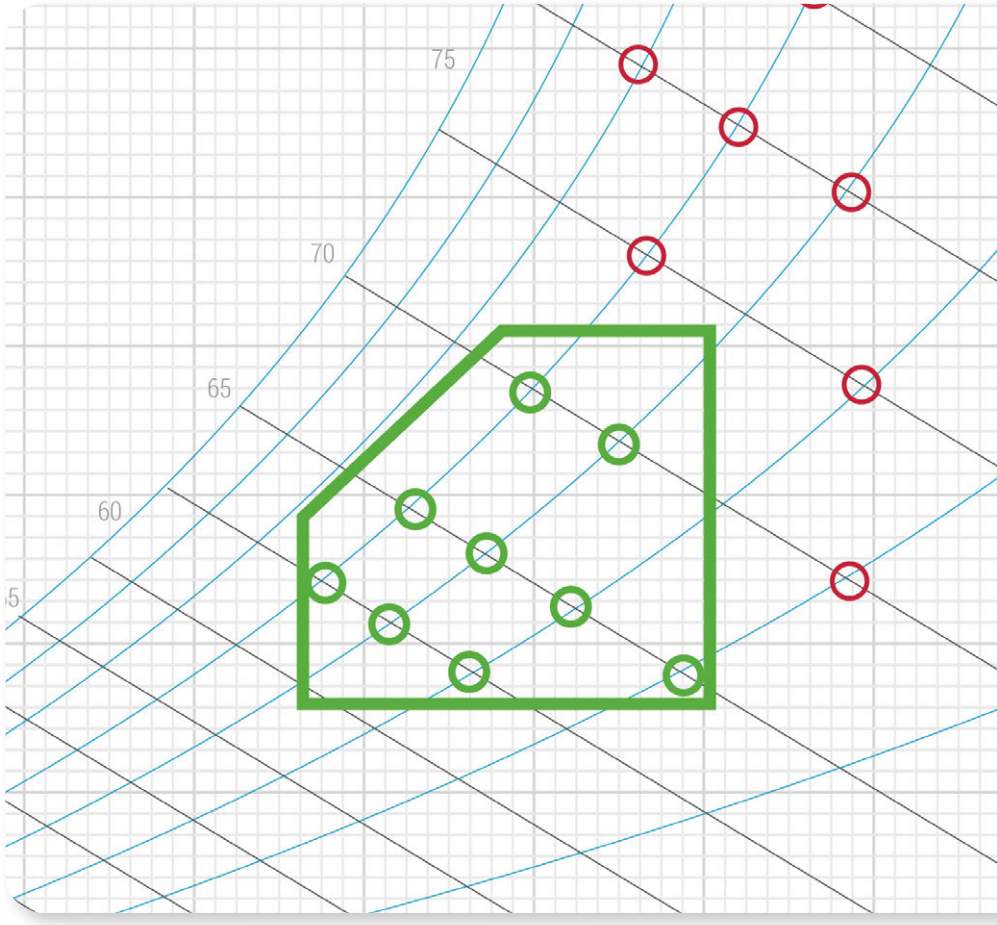


Did you know?

Other important efficiency metrics from The Green Grid include Carbon Usage Effectiveness (CUE) and Water Usage Effectiveness (WUE) which are the ratios of a data center's carbon emissions and water usage compared to the total energy consumed by IT equipment.

29. Percentage of Cabinets Compliant with ASHRAE Standards

Maximize energy efficiency and ensure optimal environmental conditions for your IT equipment by maintaining your temperature and humidity within the ranges provided by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). Use environmental sensors to identify hot spots, overcooling, and extreme humidity levels by visualizing all sensor points in thermal envelopes within ASHRAE's psychrometric charts. Then, track the percentage of cabinets in your data center that are compliant with ASHRAE standards with the goal of maintaining 100% compliance.



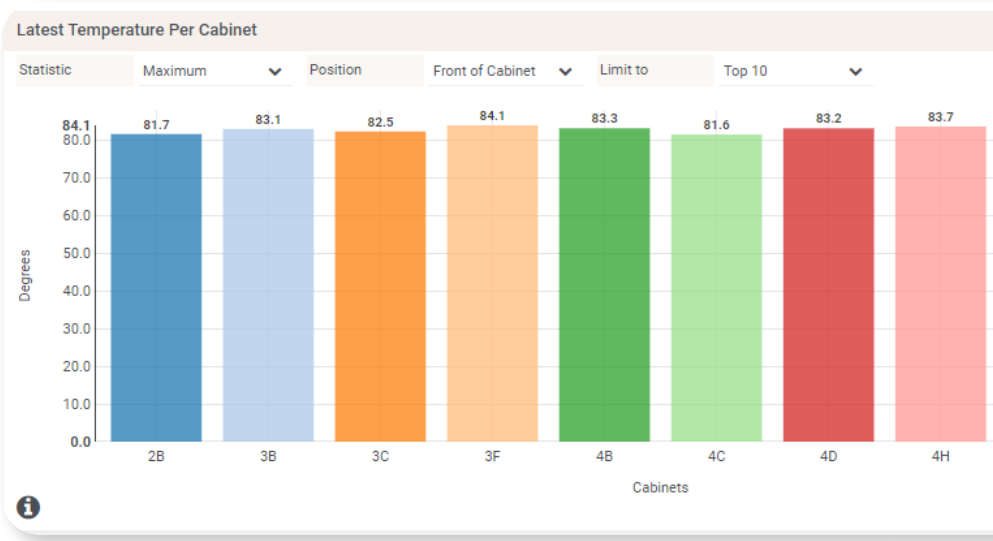
Did you know?

Iron Mountain's "The Underground" facility in Pennsylvania is located 220 feet below ground in a former mine, where limestone walls and ceilings naturally absorb heat and provide a consistent temperature for equipment to operate safely.

Cooling KPIs

30. Latest Temperature Per Cabinet

A common mistake in data center monitoring is to monitor the temperature at the room level rather than the rack level, potentially leaving you blind to cabinets that are operating at unsafe temperatures. Fortunately, with more environmental sensors being deployed and software to collect, monitor, and analyze the data, it has never been easier to track temperature at the cabinet level. You should monitor each cabinet's temperature in real time to ensure that your equipment is operating safely within ASHRAE standards, easily identify hot spots, and save money by avoiding overcooling.



Did you know?

It is estimated that data centers can reduce energy costs by 4-5% for every 1 degree increase in server inlet temperature.

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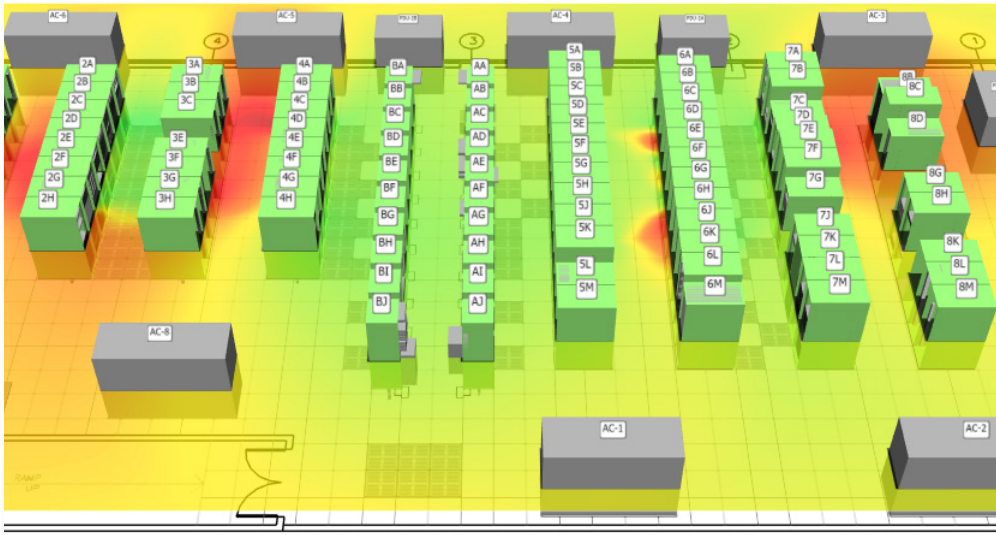
31. Hot Spot Occurrence and Duration

Hot spots are locations at the intake of IT equipment where insufficient cooling causes the temperature to exceed the recommended range, and they pose a threat to equipment and increase outages. Proactively monitor and trend rack inlet temperatures in your environment with the aim to minimize the occurrence, size, and duration of all service-impacting hot spots. To mitigate hot spots, ensure raised floor tiles are placed properly, use appropriate tile perforation, implement hot- and cold-aisle containment, position racks and CRAC units correctly, and spread high-density servers throughout the data center.



Did you know?

Implementing hot and cold aisle containment can help save up to 40% on cooling costs and provide return-on-investment in as fast as one year.

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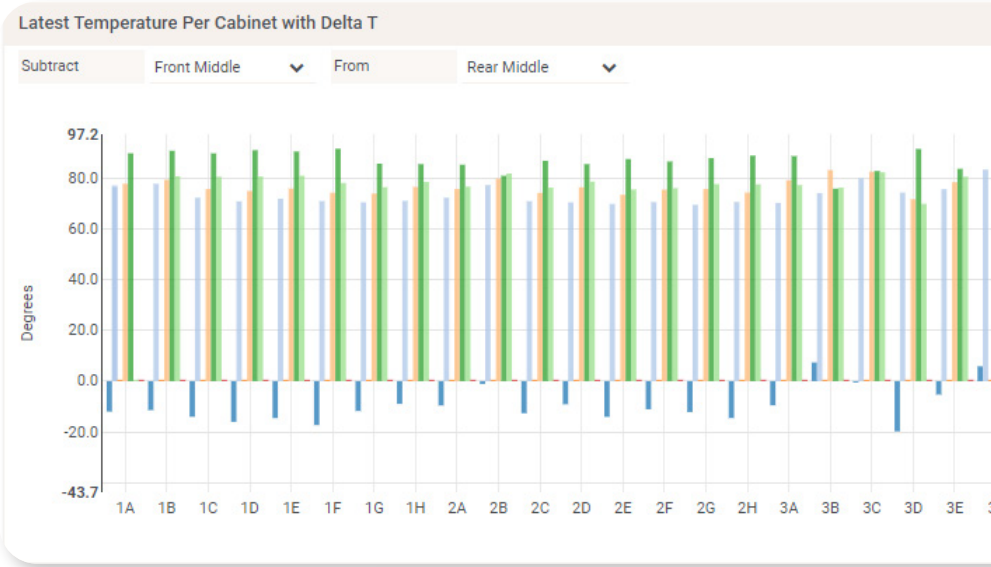
32. Delta-T Per Cabinet

Delta-T is the difference in temperatures between two sensor readings at different locations of a cabinet. It is used to measure the inlet temperature of IT equipment compared to the heat emitting from IT equipment. You should monitor the Delta-T for each cabinet in your data center to help balance airflow volume, identify hot spots, and maintain a safe environment. This will lead to maximizing your cooling capacity, reducing operating expenses, and deferring capital expenditures.



Did you know?

IT equipment airflow temperature rises at a constant rate for a given load. Every kilowatt of electricity consumed by IT equipment becomes a kilowatt of heat added to the flow of cooling air.

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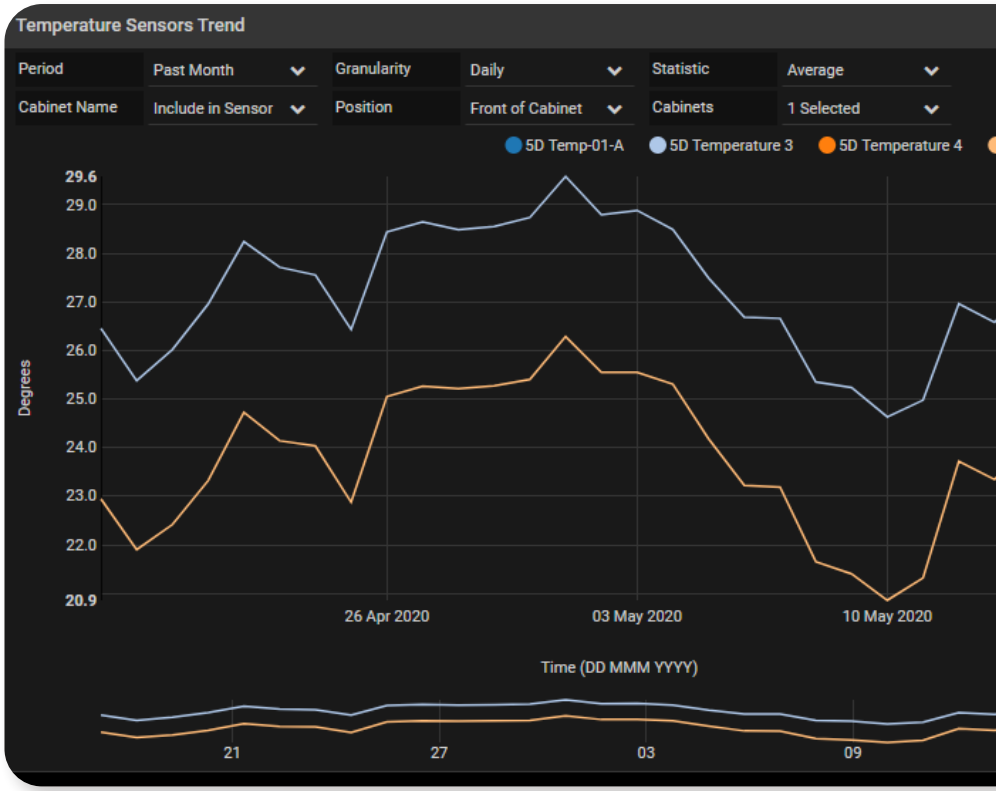
33. Maximum Temperature Per Cabinet Over Last 30 Days

In addition to tracking the latest temperature per cabinet, you should add a level of sophistication to your monitoring by trending that data over time to identify spikes and irregularities. By monitoring the maximum temperature per cabinet over the last 30 days, you can ensure that your equipment is operating within safe guidelines not just now, but all the time. If you see temperature spikes, you'll have data to identify what the issue was and prevent it from reoccurring.



Did you know?

As temperature rises, so does the power consumption of IT equipment. This is primarily due to increased fan power to boost airflow and leakage current in server components.

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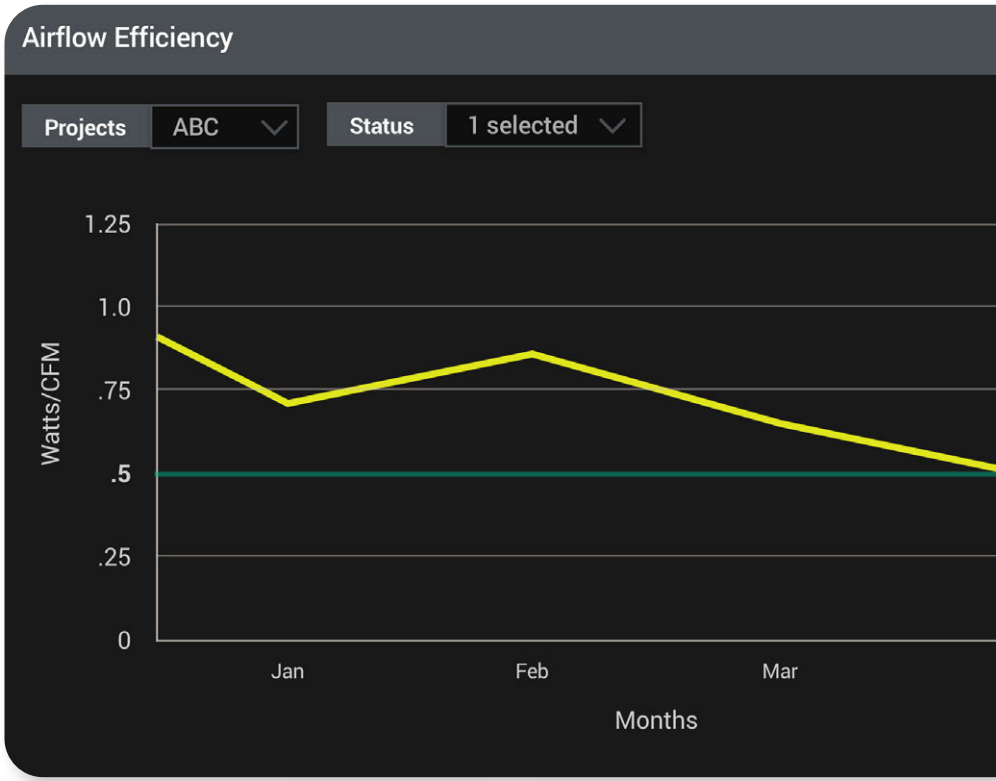
34. Airflow Efficiency

Airflow efficiency, a measure of the total fan power required per unit of airflow, provides a high-level view of how efficiently air travels through the data center from the supply to the return. It is calculated by dividing the watts of fan power by the cubic feet per minute (cfm) of supply and exhaust airflow. Monitor the airflow efficiency of your data center with the goal of not exceeding 0.5 watts/cfm. If your airflow efficiency greatly surpasses this benchmark, this is an indicator that your fan system is inefficient and design improvements may be necessary.



Did you know?

Proper airflow management alone can provide up to 30% in energy savings.

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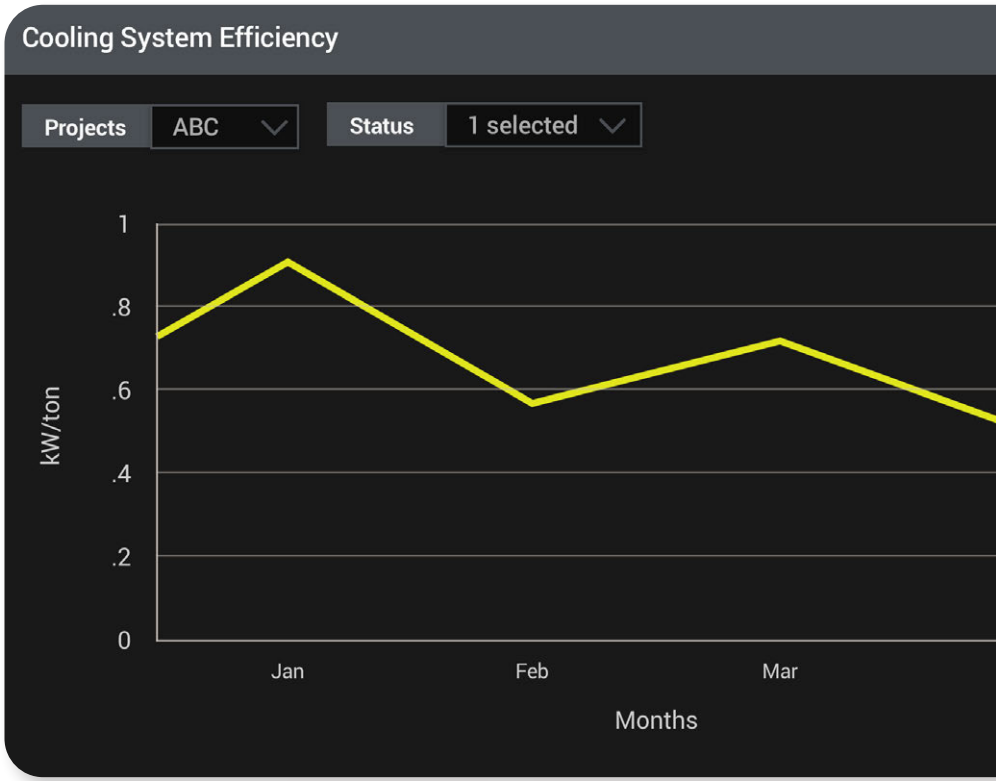
35. Cooling System Efficiency

This metric characterizes the overall efficiency of a data center's cooling system in the ratio of average cooling system power usage (in kilowatts) per average cooling load (in tons). 0.8 kW/ton is a good benchmark, while 0.6 kW/ton and lower is ideal. If your cooling system efficiency value is exceedingly high, consider improving your chiller plant efficiency by leveraging modularization, high-efficiency chillers, all-variable-speed systems, increased chilled water temperature, or a water-side economizer.



Did you know?

A "ton" of cooling load is the amount of heat removed by an air conditioning system that would melt 1 ton (2,000 lbs.) of ice in 24 hours, or 144 British thermal units (Btu).

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Connectivity KPIs

36. Cabinets with Most Free Data and Power Ports

When provisioning new equipment, you should know the best place to reserve cabinet space to achieve optimal utilization of resources. This requires knowing which cabinets have available data and power port capacity. By tracking physical port capacity at the cabinet level, you can intelligently provision new equipment, make more informed capacity planning decisions, user power and network resources more efficiently, and reduce operating expenses.

Did you know?

A modern DCIM solution with an Intelligent Capacity Search feature will help you find the optimal cabinet to deploy IT equipment in mere seconds.

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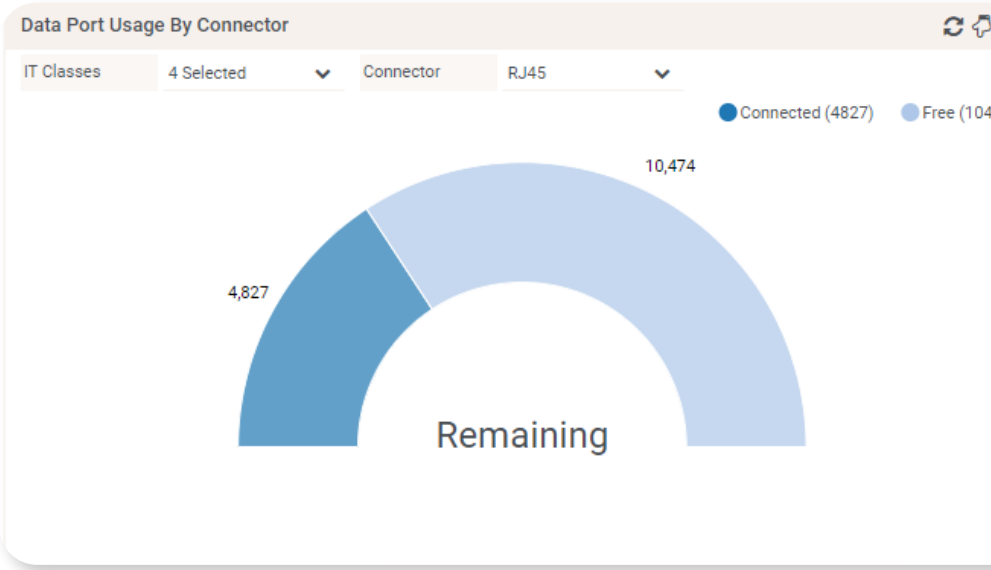
37. Data Ports Usage Per Connector Type

Capacity planning is more than just a hardware forecast for the future. You need to know and understand your connectivity capacity down to the port level in order to successfully plan and implement data center projects. You should be tracking the number of connected and free ports for each connector type in your data center in real time for the most accurate and granular view of connectivity capacity.

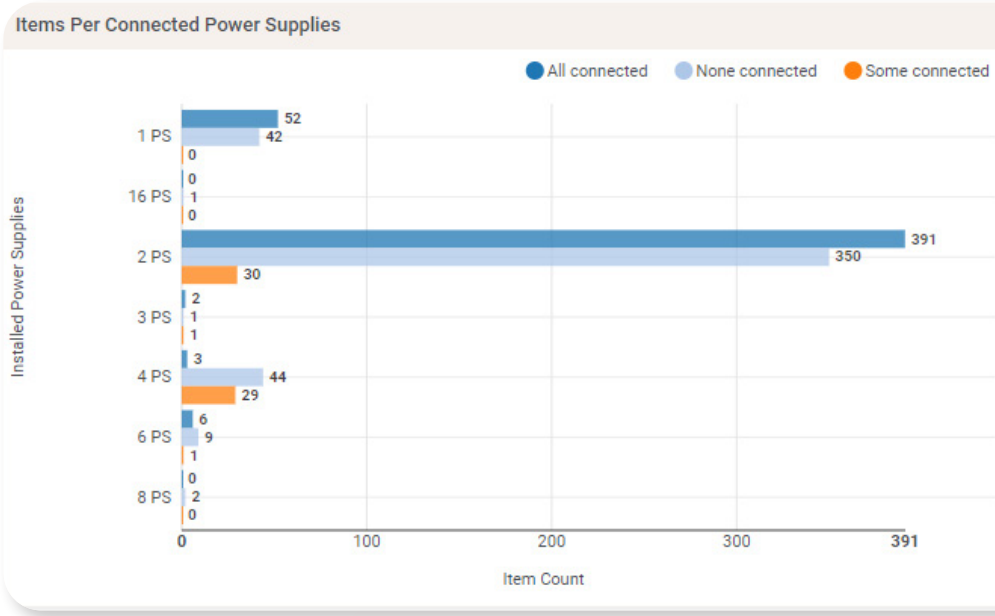


Did you know?

Having multiple connectivity options provides redundancy, ensuring that your data center almost always has access to the outside internet. This also provides protection against distributed denial of service (DDoS) attacks.

38. Assets Per Connected Power Supplies

Since IT equipment needs to be connected to multiple power supplies to ensure redundancy, data center managers need to keep track of how many power supplies are connected to each of their devices. Use DCIM software to easily identify servers that are not connected to the appropriate number of power supplies. For example, a dual power supply device may only have one power connection. Then, act on this information to ensure that all devices have redundant power to avoid costly downtime.



Did you know?

The N+1 redundancy configuration is cheaper and more energy-efficient than other configurations such as 2N, but it has the disadvantage of being less resilient.

39. Data and Power Ports Usage Per Port Properties

A data center is a high-density, complex system with hundreds, if not thousands, of devices from a multitude of vendors with a plethora of power ports with different properties. Knowing how many ports are connected or free is critical to effectively managing your data center. Monitor your power port usage by color, voltage, phase, and amp rating and your data port usage by VLAN/grouping, protocol, data rate, and media to simplify capacity planning and more easily manage your connections.

Did you know?

Telehouse's London facility is the "most connected" data center in the world with over 530 carriers, ISPs, and ASPs.

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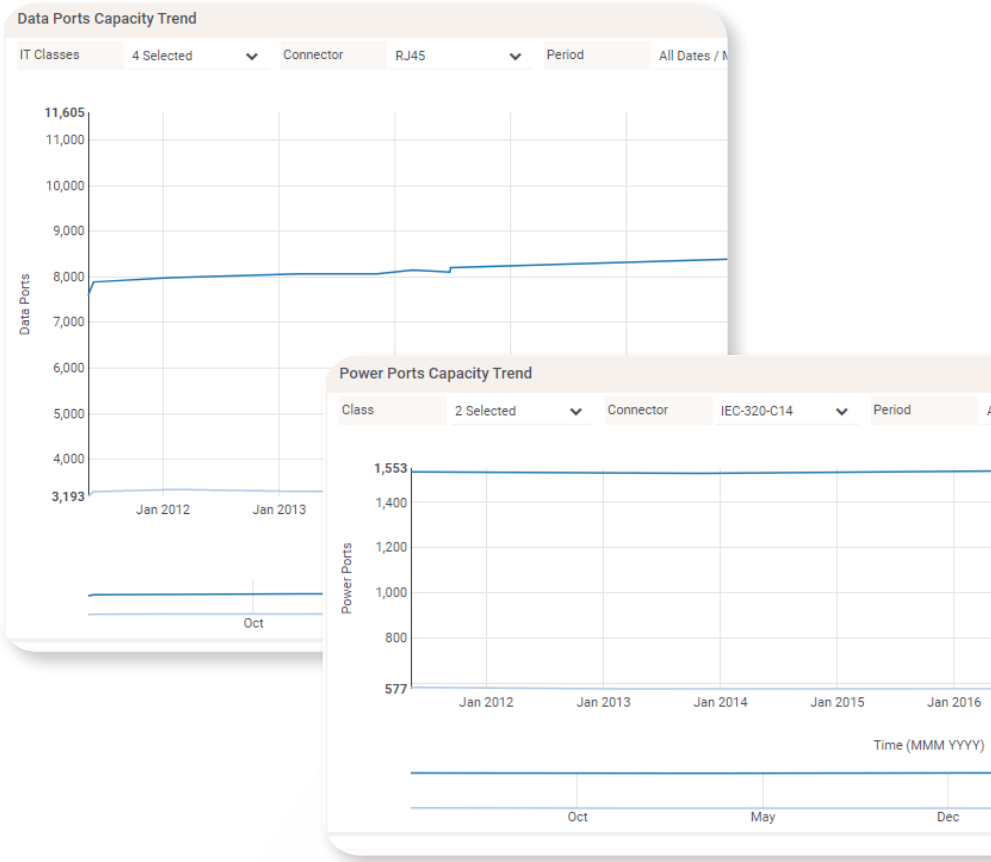
40. Data and Power Ports Capacity and Usage Trends

How effective you are at planning and managing your data center capacity is related to how accurate and insightful your data is. Tracking capacity down to the data and power port level provides granular data that clues you into how many available ports remain. Monitor your usage and capacity by connector type to ensure you never run out of free data or power ports in your data center.



Did you know?

DCIM software will automatically validate the compatibility of your physical connections and will not allow you to build connections across incompatible ports.

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Conclusion

It's more critical than ever to integrate, analyze, and act on the KPIs that have the most impact on your data center, but how do you begin to monitor so many metrics? With a comprehensive DCIM solution, it's easy.

A modern, second-generation DCIM tool provides all your most important KPIs right out of the box with zero-configuration dashboard widgets, reports, and visual analytics. An enterprise-class data and health poller gathers data directly from facility equipment to ensure accurate, high-quality information that leads to deeper, more reliable insights. Second-generation DCIM makes it simple for data center professionals to make smarter, more informed decisions to improve data center health and efficiency while dramatically simplifying capacity management.

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