

Uptime Intelligence Research Agenda



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1 Jan 2024

The latest Uptime Intelligence research agenda includes a list all published and planned reports from January 2024 to October 2024, and is focused on Uptime Intelligence primary coverage areas: 1) power generation, distribution, energy storage; 2) data center management software (automation, AI); 3) sustainability, energy efficiency; 4) silicon and systems; 5) resiliency: outages, topology, climate risks; 6) cooling and heat rejection; 7) staffing and skills; 8) security and human risk

January 2024

[Tools to improve power use by IT are underused](#)

[Tracking of IT equipment varies widely and often fall short](#)

[EU's EED: proposed reporting revisions](#)

[Five data center predictions for 2024](#)

[How server power management works](#)

[Colocation and public cloud growth masks enterprise expansion](#)

[Resiliency versus low PUE: regulators a catalyst for innovation](#)

[What does embedded carbon of IT really represent?](#)

[AI startups innovate in cooling and IT operations](#)

[Uptime's predictions 2022 to 2024 — relevant and actionable?](#)

[Air-assisted direct liquid cooling](#)

February 2024

[Most operators plan to spend more on rising demand](#)

[Critical role for EU data center code of conduct](#)

[The role of AI in digital infrastructure management](#)

[Managing server performance for power: a missed opportunity](#)

[EU battery regulations: what do the new rules mean?](#)

[Long shifts in data centers — time to reconsider?](#)

[UK prepares resiliency, cybersecurity legislation for colocation](#)

March 2024

[Annual outage analysis 2024](#)

[Ineffective cyber policies increase corporate risk](#)

[Data collection for IT metrics: is the industry ready?](#)

[Capacity expands rapidly, but complexity is challenging](#)

[Sustainability data exchange in colo and cloud contracts](#)

[Cloud outage insurance: assessing policy option](#)

[US mandates crypto energy reporting: will data centers be next?](#)

[Generative AI and global power consumption: high, but not that high](#)

[Confusion reigns over EED May 15 reporting deadline](#)

[EED delegated regulation is finally final](#)

April 2024

[Sustainability strategies face greater pressure in 2024](#)

[Tutorial 1: Scoping data center cybersecurity](#)

[Equipment prices rise despite supply chain improvements](#)

[Increased requirements for Scope 3 reporting and energy certificates](#)

[Underwater data centers: lessons from the deep](#)

[Next-gen refrigerants: another environmental plight?](#)

[Time to collaborate on contracts for sustainability](#)

[OT protection — is air-gapping the answer?](#)

[The threat to data center security from state-sponsored hackers](#)

[Scope 3 accounting: once is not enough](#)

[Uncertain power demand figures will lead to poor decisions](#)

[DLC momentum rises, but operators remain cautious](#)

[Maturity model for sustainability downplays site-level resiliency](#)

May 2024

[The impact of AI on data center operations \(Part I\)](#)

[Data center sustainability standards \(updated\)](#)

[Uptime Institute Cooling Systems Survey 2024: Direct liquid cooling](#)

[A deep dive into certificates for carbon-free energy](#)

[Capacity planning for liquid-cooled data centers](#)

[Operators are pushing net-zero targets beyond 2030](#)

[Anatomy of a thermal runaway](#)

[Why DC racks are still rarely used outside of hyperscalers](#)

[Is this air cooling's last gasp?](#)

[High-impact outages highlight ongoing resiliency challenges](#)

[iPDUs: a critical step for next generation efficiency](#)

[Complexity versus cybersecurity in the data center](#)

June 2024

[The long journey to concrete and steel decarbonization](#)

[Tutorial 2: Identifying and addressing data center cybersecurity threats](#)

[Operators boost cybersecurity efforts, but more work is needed](#)

[Effective EOPs: how cognitive science can help](#)

[EED reporting deadlines are clarified](#)

[Ignore Li-ion fire risks at your peril](#)

[Mitigating OT risk from third-party requests](#)

[Air cooling's third win](#)

[DCIM past and present: what's changed?](#)

[Immersion fluids hold promise, but fire risk a concern](#)

[Targeted recruitment could widen the talent pool](#)

July 2024

[Using optimization software for cooling and capacity gains](#)

[Uptime Institute Global Data Center Survey 2024](#)

[Tutorial 3: Effective data center governance for cybersecurity](#)

[Interest in two-phase cooling warms up](#)

[European legislation prompts greater environmental action](#)

[Six AI infrastructure conundrums](#)

[Europe taxes waste heat recovery: can data centers make it work?](#)

[Global IT disruption highlights concentration, third-party risk](#)

[Digital EOPs: the appliance of science](#)

[Water cold plates take a big lead in the small world of DLC](#)

August 2024

[Tutorial 4: Roles and responsibilities in data center cybersecurity governance](#)

[Water is a local issue: site selection and facility design](#)

[Hydrogen in data centers: an introduction](#)

[Hardware for AI: what makes it different?](#)

[Sustainability teams: key players and crucial collaborations](#)

[Shaky start for Europe's EED legislation](#)

[Global IT outages raise the question: who bears responsibility?](#)

[Grid growth and decarbonization: an unhappy couple](#)

[Building trust: working with AI-based tools](#)

[Rack densification: is it really happening this time?](#)

[UPS component failures: what are the leading issues?](#)

[Nature laws to play key role in planning and building facilities](#)

September 2024

Considerations of raised supply air temperatures

Data center management and control (DCM-C)

Heat reuse engineering

The impact of AI on data center operations (Part 2)

Corporate and facility strategies for water use (Part 2)

Tutorial 5: Cyberwsecurity risk management

Collecting IT power metrics: using software

Electrical implications of high-density (an introduction)

AI and worker productivity: protecting your staff from Solow paradox

Power issues and cyberattacks: how are they connected?

Who is using natural gas, and why?

Venue selection: the importance of location for AI training

Netherlands EED reporting forms: completely worthless

UPS failure data (MCIM)

A primer on SMR

Is the data center Scope 3 focus headed in the wrong direction?

October 2024

Water: cooling system selection (Part 3)

Hydrogen power and data centers (Part 2)

Tutorial 6: Cybersecurity policies and procedures

A sustainable data center in the AI era

Collecting IT power metrics (Part 3)

How mission critical does AI need to be?

The business side of heat recapture

Off-grid data centers

The coming of quantum usefulness

Is inferencing a killer app for the edge?

Would you run your manufacturing facility at 30% capacity?

Global outage follow-up

Annual survey 2024: vendors report fewer delays in 2024

(Titles, dates and descriptions are subject to change. Further details and extra reports and updates will be added to further iterations of this sheet as needed and will be available closer to the date of publication.)

ABOUT THE AUTHOR



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Douglas is a Research Associate at Uptime Institute covering sustainability in data centers. His background includes environmental research and communications, with a strong focus on education.

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About Uptime Institute

Uptime Institute is the Global Digital Infrastructure Authority. Its Tier Standard is the IT industry's most trusted and adopted global standard for the proper design, construction, and operation of data centers – the backbone of the digital economy. For over 25 years, the company has served as the standard for data center reliability, sustainability, and efficiency, providing customers assurance that their digital infrastructure can perform at a level that is consistent with their business needs across a wide array of operating conditions.

With its data center Tier Standard & Certifications, Management & Operations reviews, broad range of related risk and performance assessments, and accredited educational curriculum completed by over 10,000 data center professionals, Uptime Institute has helped thousands of companies, in over 100 countries to optimize critical IT assets while managing costs, resources, and efficiency.