CloudIQ: Empowering Smarter Sustainability Decisions with AIOps

Game-changing insights from a trio of emissions, health and cybersecurity analytics.

By Frederic Meunier, CloudIQ Product Manager

Energy efficiency is top-of-mind at Dell. It's how we operate our business, achieving 59% renewable electricity across Dell Technologies global facilities in 2022. It's in our IT infrastructure portfolio, with more than 500 ENERGY STAR-qualified products for increasing efficiency and reducing IT and carbon footprints. And now with advanced AIOps software, we're taking energy efficiency to the next level.

CloudIQ, the AIOps application for Dell infrastructure, will now provide energy and use phase carbon footprint tracking and forecasting at organization, individual system and workload levels. By combining these new analytics with CloudIQ's rich infrastructure health analytics, cybersecurity assessments and metadata, you'll have the intelligent insights to make the best sustainability decisions about workload consolidation, IT footprint reduction and energy efficient technology refresh to meet your sustainability goals.

According to ESG analyst Jon Brown, "Dell's inclusion of energy and carbon usage metrics in CloudIQ offers organizations a new and better way to quantify and reduce their energy consumption footprint. It is a good example of what Dell is doing to make sustainability part of the fabric of IT management."

Unlocking Sustainable Efficiency: CloudIQ Insights at a Glance

Here are examples of CloudIQ insights for making better sustainability decisions.

- A global, energy view of all your systems lets you identify under-utilized, energy-inefficient systems versus more highly utilized, energy-efficient systems with the headroom to do more work. Now you know where to consolidate workloads, where to power down under-utilized systems until they are needed – or retire them outright.
- Up-to-the-minute updates about system health, including physical component, capacity, performance, configuration and data protection status, give you more insights about where and when to consolidate workloads.

- Cybersecurity monitoring shows you each system's security policies, so you know which systems are safe for accepting certain classes of workloads for consolidation and if you need to amend a target system's policies to accept certain workloads.
- System metadata, including custom tags, indicates which systems are reserved for certain types of workloads, like financial, product development, marketing or human resources data and applications.

Altogether, you'll have a full picture of which infrastructure systems are candidates for replacement by modern data storage and servers with the performance and capacity to handle more workloads and with higher energy efficiency. This technology refresh will reduce your entire IT footprint for lowering emissions, as well as reducing IT operations overhead.

Accurate Sustainability Analytics: Trustworthy and Customizable

To ensure you always have an accurate picture of your sustainability posture, CloudIQ's continuous carbon emissions calculations are based on location-specific emission factors provided by the International Energy Agency (IEA) per country and the worldwide industry average Power Utilization Effectiveness (PUE) value for data centers.

For exceptional accuracy, you can override these default values with each of your location's unique emission factor and PUE. This truly reflects energy sources that you might have, such as low carbon emission energy sources (e.g., a solar energy or wind farm), and your own data center's precise PUE.

Machine Learning for Sustainability Anomaly Identification and Forecasting

CloudIQ, which already uses machine learning to compute seasonality (i.e., the range of normal behavior) for system performance and capacity, now applies machine learning to energy and use phase carbon footprint. By overlaying current energy and emissions metrics on top of seasonality, you can immediately identify when systems' or workloads' energy usage and emissions are abnormally high or low.

Workloads are monitored as block and file storage objects on storage systems and as virtual machines on servers and hyperconverged systems. Paired with machine learning, other algorithms look at seasonality and then forecast system, workload and total organizational energy usage and emissions so you can chart the future and plan accordingly.

AIOps' Trio of Analytics for Making Better Sustainability Decisions

Altogether, CloudIQ AIOps' trio of sustainability, health and cybersecurity analytics provide the insights that indicate your best options for remediation and your best path for planning future actions. CloudIQ's custom reporting and REST application programming interface (API) further open the door for cross-operations collaboration and automating actions to help you meet your sustainability goals.

Dell has always been committed to climate change, sustainability and accelerating the circular economy, and what we're announcing today gets us further ahead in helping our customers achieve their goals.

See CloudIQ for Yourself

Watch this short sustainability demo video, download this related infographic and learn more about CloudIQ here.

About the Author: Frederic Meunier

Frederic drives the innovation roadmap for CloudIQ, the AIOps application for Dell's IT infrastructure system portfolio. He has been with Dell for over 10 years, joining from the Watch4net acquisition where he was a co-creator and then Product Manager of APG, Watch4net's flagship performance management product. Working in data center and network infrastructure monitoring for over 20 years, Frederic has a deep understanding of infrastructure domains and the monitoring and reporting use cases that are critical to IT operations' success.

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