Driven by IoT, 5G, and distributed cloud-based applications, the deployment of Edge-based data center, and the infrastructure behind them, has exploded. These Edge-based based data centers bring a unique set of challenges to the forefront compared to traditional DCIM. Due to their core requirement of being close to the customer, Edge data solutions are deployed in-mass; typically in the hundreds or thousands across large swaths of geography. Much of the same subsystems are necessary for these applications such as HVAC, security, and power monitoring is the same between traditional and Edge deployments. What differs, however from traditional large scale data centers, is the sheer quantity; technological diversity, and geographic swath. 24x7 staffing of these Edge locations is impractical; leading to the need to be able to monitor and manage their operations entirely remotely, while also taking on additional functions typically taken care of by on-prem staff.

Though diagnostic management software has existed for years from many manufacturers, these solutions are often tied to a specific trade within the building leading to the need for many software applications to manage all of the subsystems in the facility. Though this situation is manageable in a few locations; in the scale of an EDGE deployment with hundreds or thousands of locations, each with potentially different equipment; this becomes unmanageable.

The BitBox Platform solves this common complex and expensive dilemma. The BitBox PaaS utilizes a simple to deploy BitBox Edge appliance to gather and communicate with all subsystems and equipment within an edge facility, and then funnels all the of the data up to the BitEngine where it’s tagged, sorted, and managed. From the BitEngine all Edge data center deployments can be monitored, controlled, and managed from a centralized NoC. Beyond just collecting of data, the BitEngine platform allows for refined centralized reporting, customized alarming, and remote diagnostics directly from the cloud.

Beyond just monitoring and control of subsystems, BitBox enables a consolidated REST API, allowing for AI, analytics, and third party integration of applications to be deployed in tandem with the Bit-Engine data-collection allowing meaning insight to be derived from the enterprise data.

Simple Roll-out
BitBox takes care of the complexity of mass rollouts. A single appliance is installed in each location and wired to all subsystem and IoT devices. Once powered, all provisioning can occur in the cloud. Changing of subsystem equipment and how it communicates can all be done on the fly through the BitEngine eliminating site visits for changes or commissioning.

Preventative Maintenance
Comprehensive custom alarming can be configured in the BitEngine to notify people of out of tolerance conditions, and features such as surveillance cameras can be used to remotely troubleshoot and diagnose problems before someone is on-site. Should work orders be required, the BitEngine easily integrates with work order management systems, and custom applications to help prioritize visits.

Security
No personnel on site poses particularly difficult problems for asset security and access. Remotely see site cameras, motion sensing devices, and fire suppression data live and be alerted of problems. Remote notifications can be sent to regional staff or authorities when needed. Additionally, remote access can be coordinated through access control solutions to understand who and when people can access the facility.

Reduced OpEx
Distributed Infrastructure monitoring via the BitBox Platform does more than just limit truck rolls to investigate and resolve issues. The BitEngine platforms allow for longterm trend analysis of operations to identify performance outliers and enable better scheduling of on-site service to reduce downtown through continuous commissioning methodologies.
One BitBox per site gathers data from Modbus, BacNet, SNMP, IoT, serial devices, or other connected sub-systems. Wire and go. Zero onsite software configuration.

Provision all BitBox equipped sites in the cloud, and organize all your data in the BitEngine into a unified data-collection. Additionally, you can choose to house your data in AWS, Azure, GCP, Digital Ocean, or company-owned infrastructure and work order management.

The BitAPI, driven by the BitEngine, provides a web-accessed dashboard allowing for a centralized view of all sites and performance criteria with simple to configure alarming capable of sending SMS and email messages of out of bounds conditions. The dashboard also allows sophisticated reports to be generated to foster preventive maintenance.

Beyond these critical operations functions, the BitAPI allows for a secure GRPC or REST API connection to any third party applications, analytics providers, or cloud platform allowing for tight automated workflow integration as well as custom application development.