WHITE PAPER

Cloud Data Center
Data Center Infrastructure Management

The Modern Data Center: Supporting IoT Edge, and Big Data-Generated Information

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Executive Summary

In almost every respect, the world is speeding up. For businesses this is reflected in the demand for real time data. Look at the trends that will power the next generation of business innovation: AI, IoT, and 5G are driving a surge in data production that, according to Gartner, could see more than **7.5 billion connected devices** in use in enterprises by 2020.

Whether it's managing operations on the edge, implementing AI-driven processes, or adopting greener management tactics, there is no doubt companies are hungry for what's new and next. But with these trends comes complexity made even more difficult by a lack of staff or multiple edge and distributed IT sites.

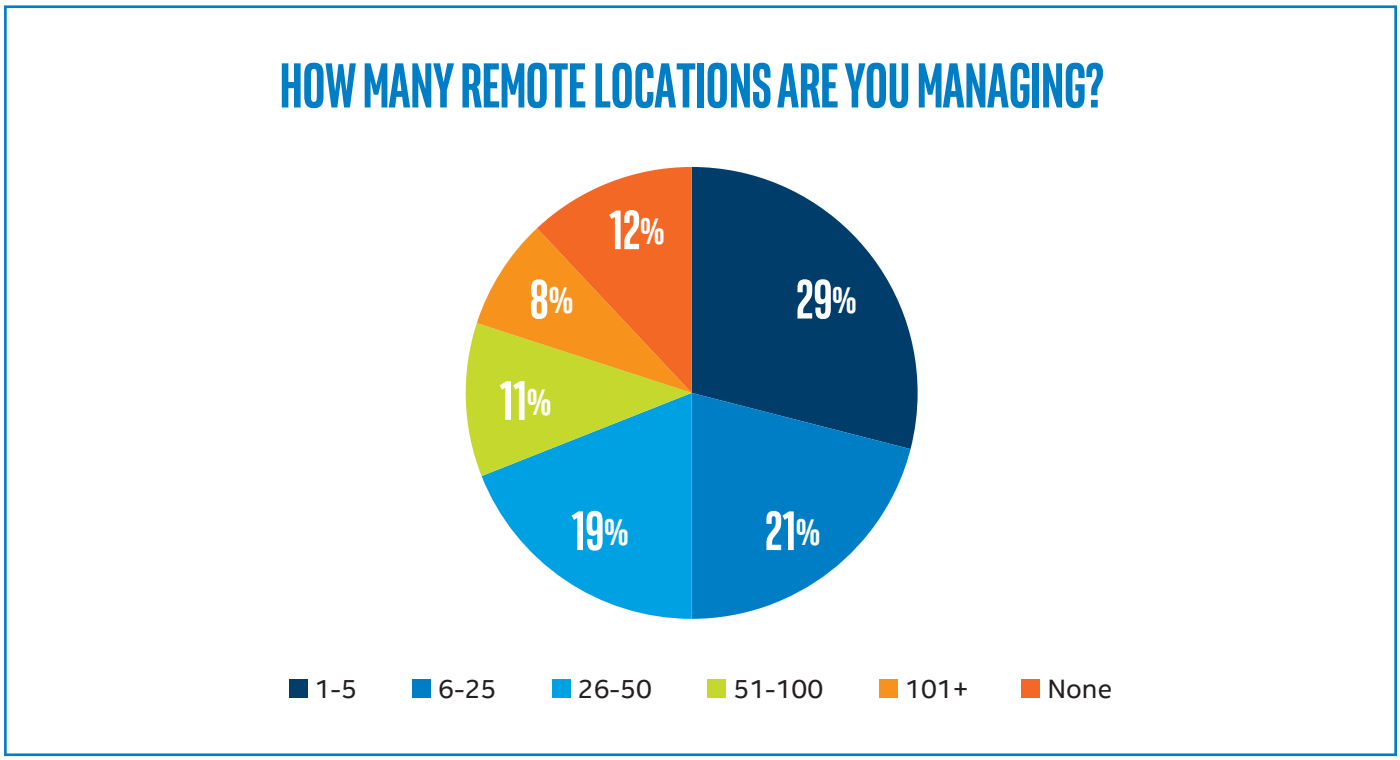
A recent study of 250 IT decision makers, including IT director/IT manager/sys admins, data center managers, application engineers, operations managers, and systems engineers in the US and UK reveals that it's hard enough to collect data currently, and as things continue to move to the edge and data becomes even more critical, it will only get more difficult.

From five to 50 plus remote locations increase IT challenges

Data center managers are in a difficult position: They are expected to do more than ever, including protecting rapidly expanding volumes of data and a growing number of mission-critical applications, managing a growing number of remote locations, and implementing a variety of emerging eco business initiatives.

Gone are the days of having a dedicated staff at remote sites which run local services and applications, with 59 percent of respondents are managing more than five remote locations and 19 percent are managing 50 plus. Most organizations are moving a small number of servers into a remote location to process larger workloads closer to the problem.

Looking more closely, organizational size plays into the number of remote locations. Small organizations tend to have fewer remote servers to manage and larger organizations have more. The challenge of having multiple, remote sites combined with a lack of trained on-site staff makes it critical that IT teams have access to the right tools that can help improve control, decrease cost and gain better access to data.



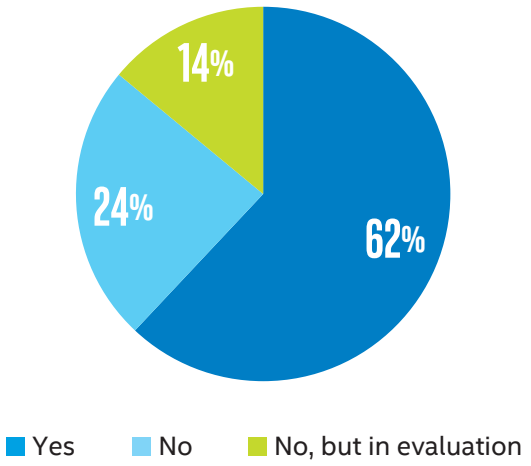
Almost half of respondents are challenged to collect data

Today, many data centers are maxed out in power capacity and poor thermal design leads to hot spots that limit rack loading. These constraints make getting insights into power and thermal monitoring, data center health and energy efficiency, as well capacity planning critical to IT administrators. That's why 87 percent of respondents are collecting data from the IT, power, and cooling assets in their data center and nearly four-fifths (79 percent) of respondents are performing efficiency-focused analytics on their data center. Immediate alerting for component failure, and nightly reporting on drive capacity, and component health trending data for predictive analytics is crucial.

While 62% of the respondents use a Data Center Infrastructure Management (DCIM) solution, and 67% of the respondents built their own analysis tools to review the collected data, 40% of the respondents indicated it is somewhat difficult to get data from the IT, power, and cooling assets in their data center, and 7% of the respondents indicated that it is very difficult to do so.

With 94 percent of respondents using insights on the health and efficiency of their data center when making decisions, it's clear that without the tools to help these teams gather critical information like power and thermal consumption, costs and complexity will increase at the same or at a greater rate. For the 38 percent of respondents that indicated they were not using a DCIM tool, they are hamstrung in decision making with a lack of insight into power and thermal monitoring, data center health and energy efficiency, as well capacity planning.

DO YOU CURRENTLY DEPLOY A DATA CENTER INFRASTRUCTURE MANAGEMENT (DCIM) SOLUTION?



HOW DIFFICULT IS IT TO COLLECT THAT DATA FROM THE IT, POWER, AND COOLING ASSETS IN YOUR DATA CENTER?

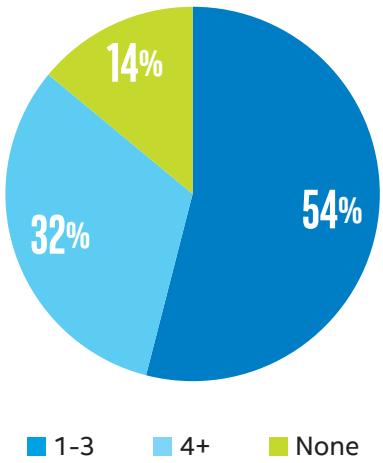
Half of respondents indicate high bandwidth, large volume applications is the reason they deploy an edge solution

Now that we've established not only the importance of data, but that it's increasingly difficult collecting that data, IT managers and directors are struggling to meet the challenge of processing, analyzing, and making data actionable and meaningful. And, as data moves to the edge, it becomes even more important for making real time decisions.

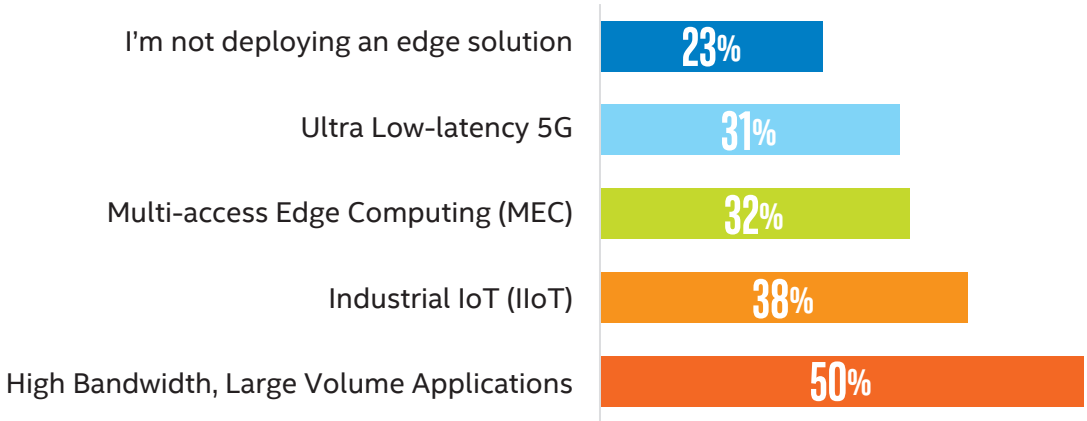
Of the 87 percent of respondents that are collecting data from the IT, power, and cooling assets in their data center, 64 percent are collecting data on the edge. Smaller organizations are the least likely to deploy an edge solution, with 27 percent indicating that they don't.

When it comes to edge, centralizing work is too costly so it's cheaper and faster to work on the data at the edge where it is collected. But, 54 percent of respondents are using one to three tools to collect data from the edge and 32 percent using four or more. With so many tools being used to collect data, the desire for a combined solution at the edge to scale and automate is important.

HOW MANY DIFFERENT TOOLS ARE YOU USING TO COLLECT DATA FROM YOUR EDGE DEVICES?



IF YOU ARE DEPLOYING AN EDGE SOLUTION, WHAT USE CASES ARE YOU LOOKING TO ADDRESS?



Conclusion

According to **another report from Gartner**, while 91 percent of today's data is created and processed inside centralized data centers, by 2022 about 75 percent of data will need analysis and action at the edge. While edge computing presents the ability to bring data processing and storage closer to the growing number of connected devices, without the right tools, enterprises will struggle to maintain control over their vast and complex data centers, making edge computing strategies more difficult to adopt. Tools like Data Center Infrastructure Management software is the easiest way to modernize data centers and have the ability to support more IoT and big data-generated information.

About the Survey

A survey of 250 IT decision makers, including IT director/ IT manager/sys admins, data center managers, application engineers, operations managers, and systems engineers in the US and UK. The survey was conducted online by Morar Consulting and commissioned by Intel® Data Center Manager and Schneider Electric during May 2019. Results of any sample are subject to sampling variation. The magnitude of the variation is measurable and is affected by the number of interviews and the level of the percentages expressing the results. In this particular study, the chances are 95 in 100 that a survey result does not vary, plus or minus, by more than 5.6 percentage points from the result that would be obtained if interviews had been conducted with all persons in the universe represented by the sample.