



Buyers Guide to Edge Infrastructure Management Solutions

Selecting the best tools to manage and monitor your edge distributed IT environment.

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Guide to the guide

The New Era of Edge Computing

It is fair to say that Edge computing is becoming a new norm alongside the traditional centralized data center.

["Edge computing delivers the decentralized complement to today's hyperscale cloud and legacy data centers." Gartner - The Edge Completes the Cloud: A Gartner Trend Insight Report, 14 September 2018.](#)

As the Edge moves from a buzzword to a tangible computing ecosystem that needs resources, tools, and love, more and more questions around monitoring and management of distributed IT equipment arise.

While familiar with critical facility management, many of the IT, facilities and data center managers with whom we speak are still figuring out how they will manage remote, increasingly critical, edge computing environments.

- "Do we need a new tool to manage our edge infrastructure, or can we make do with what we already have?"
- "If we do need a tool, which one?"
- "And how to choose the right one?"

Whether this is your first time looking for an IT infrastructure management solution, or you're looking to expand your organization's existing capabilities, this guide will provide you with experts' advice to make the best possible choice. We've done our best to create a resource that's relevant regardless of size, industry or maturity.

We've tried to keep this guide vendor-agnostic, but, because we've been helping IT managers like you for over 30 years, we've selectively sprinkled in links to tools that might be helpful if you want to dig deeper on certain questions.

We hope you find it helpful!

This guide shares the key steps companies should take before buying and deploying an edge infrastructure management solution.



Why You Should Consider an Edge Infrastructure Management Solution

The Big Picture:

Organizations in virtually every industry are undergoing a digital transformation in an attempt to take advantage of [edge computing](#) technology to make their businesses more efficient, innovative and profitable. In the process, they're coming face to face with challenges ranging from time-to-market to reliability of IT infrastructure.

It's a complex problem, especially when you consider the scope of what digital transformation entails. "Digital transformation is not simply a list of IT projects. It involves completely rethinking how an organization uses technology to pursue new revenue streams, products, services, and business models," says [research firm IDC](#).

Companies will be spending more than \$650 billion per year on digital transformation efforts by 2024, a CAGR of more than 18.5% from 2018, according to the research firm [Market Research Engine](#).

The drivers behind all that spending include Internet of Things (IoT) technology, which involves collecting data from machines and sensors covering every aspect of the organization. That is contributing to Big Data – the treasure trove of data that companies mine to find the keys to efficiency, opportunity and more. Artificial intelligence and machine learning are crucial to that effort, helping companies make sense of the mountains of data they're creating and consuming, and to find opportunities.

Getting Technical

But while [much has been said](#) about why Edge Computing is taking center stage in the world of IT, there's relatively little guidance on tactics for managing an increasingly critical, distributed IT environment. The questions we hear from customers run the gamut:

- How do we keep tabs on remote locations with no on-site IT staff?
- Is there any way to anticipate equipment failure before it happens?
- Is there any way to speed up our resolution time when there's an IT equipment failure?
- How much available capacity do we have at each remote location?
- Is there any way to enhance the security of rooms and closets hosting critical edge compute?
- How do we get a consolidated view of equipment health at all of our sites on a single pane of glass?
- Is there a cost-effective way to extend our on-premise monitoring solution to our critical edge locations?
- Is there any way to maintain on-the-go visibility of my infrastructure when I'm away from my desktop (apart from using VPN on my laptop)?

If any of these questions resonate, keep reading. An effective edge infrastructure management solution can help you address all of the challenges above...and then some.

Edge infrastructure management tools are essential to a successful digital transformation that retains network reliability and uncompromisingly high standards of security. They serve as eyes and ears in places you can't be and can't afford to staff. And the best tools can be quickly and cost-effectively deployed, accelerating mean time to repair (MTTR) for unplanned outages while improving the quality and speed of decision-making.

SELF-ASSESSMENT: Do you need an edge infrastructure management tool?

Take the following self-assessment. If you respond negatively to two or more of the following agree/disagree statements, you should further investigate the value of an edge infrastructure management solution to your organization.

Statement	Agree/Disagree
1. We can remotely check the status of all our remote critical infrastructure devices or sites.	
2. We are immediately notified if there's an event or problem with our distributed critical infrastructure devices or sites.	
3. We have skilled onsite IT support at all locations with critical IT infrastructure devices.	
4. Our systems notify us of potential cyber security vulnerabilities in our critical infrastructure devices as they arise.	
5. We can remotely upgrade our equipment through a single user interface (UI) to ensure we have the latest security fixes.	
6. We have a centralized team that monitors our critical infrastructure 24x7.	
7. Our team is not overly reliant on the knowledge and skills of any single employee in our IT organization to maintain our edge infrastructure.	
8. We can quickly view and understand the performance trends of various critical infrastructure devices.	
9. We are satisfied with the time it takes to resolve an incident when there is an IT equipment failure.	
10. We are satisfied with the effort required to provide relevant reports to our management team concerning our critical edge infrastructure.	

of "Disagree" Responses: _____





First Things First: Define the Problem to be Solved

Because we're committed to providing a resource that's relevant regardless of size, industry or sophistication, we recommend asking and answering two basic questions at the outset of your evaluation process:

- What is the problem(s) you're trying to solve?
- Who else needs to be involved in this process?

Problems to be Solved, Jobs to be Done

Ever heard of the [Theory of Jobs to Be Done](#)? Developed by author and Harvard University Business School Professor Clayton Christensen, the Jobs Theory says that people don't simply buy products or services, they 'hire' them to make progress in specific circumstances. This progress is the "job" they are trying to get done. The first step in selecting an edge infrastructure management solution is describing the job to be done.

In a world of distributed IT where edge computing is growing more essential to executing organizational strategies, the most common job customers are "hiring" edge infrastructure management solutions to do is monitor equipment located in a range of remote environments, whether they be industrial (e.g., factory floors, outdoors, industrialized warehouses), commercial & office (e.g. open office, retail stores, server closets, automated warehouses) or IT environments (e.g., server rooms, wiring closets, small data centers).

What job would you be hiring an edge infrastructure management solution to do? Whatever you choose, set yourself up for an easy early win so that you can build momentum to expand.

Involving Others in the Process...as Necessary

Second, who else has meaningful interest in solving this problem? How this question is answered often dictates a customer's buying path. In short, the smaller the organization, the simpler the decision. The larger the organization, the more necessary consensus-building becomes to driving successful results.

Smaller organizations are usually managing fewer than 150 critical IT assets with 1-2 IT employees. Budget authority resides with the team benefiting from the tool. No need to complicate the process. Define the problems you need to solve, test a couple of solutions, and move ahead. (In fact, you can skip the next section of this guide).

Medium-to-large organizations are managing many more assets (>150-200 assets). While their staffs aren't necessarily large, a tool like this can impact stakeholders beyond their immediate team. It can also draw the attention of your cybersecurity team. As a result, you're better off engaging these stakeholders early on in your buying process to avoid late-stage plan disruptions. In the next section, we offer a few suggestions on what this might look like.

Evaluation Plan: Map Your Approach

Are you part of a medium-to-large organization that likely requires consensus to move forward with an investment in an edge infrastructure management tool (as discussed in the previous section)? If so, this section is for you.

Oftentimes in larger organizations, decisions about software investments attract multiple stakeholders. [Gartner Research](#) has found that, as the number of people involved in B2B solutions purchases increases, the risk of decision paralysis grows substantially. To guard against a failure to ever launch, successful deployment of an edge infrastructure management solution often depends on a well-considered project plan. Consider the following as you map your path to edge infrastructure visibility.

The 3 Pillars of the Evaluation Plan



Evaluation Team: Identify key people to involve in the evaluation process. In addition to the technical team (i.e., daily users) evaluating solutions needs and capabilities, three groups often overlooked in an edge infrastructure management solutions buying process are Cybersecurity, Finance and the Line of Business.

Cybersecurity

Because the best solutions are cloud-based, this group is focused on maintaining the integrity of your data security, as well as ensuring regulatory compliance.

Finance

Cloud-based solutions are increasingly sold as-a-service. Not all organizations are set up to buy Software-as-a-Service (SaaS) solutions. It is wise to engage someone either in Finance, Procurement, or Contract Management to ensure key steps are taken to comply with what might be new SaaS acquisition procedures.

Line of Business (End-user)

The final end-user of the solution is effectively the “customer” that you are providing the desired outcome or solution capability to. The “user” is a key influencer and someone with whom you should validate your assumptions.



Project Plan: Map out how you will evaluate potential solutions. In the next section, we will provide some advice on what features and capabilities to screen for as you search for potential vendors. However, it’s worth outlining your intended process early on and researching what’s been involved for comparable decisions made by your company to ensure you’re not overlooking anything. At a minimum, your plan should include:

Vendor Research

Determine your short list for evaluation based on experience in the industry, long-term commitment to this market, current capabilities, and future roadmap.

Solutions Presentation

Engage directly the vendors with solutions that meet your main criteria.

Trial/Proof of Concept

The beauty of SaaS solutions is that short-term, free trials are typically baked into the purchase process. Build at least a 30-day trial into your project plan.

Deployment Plan

Determine what approach is required in order to achieve quick wins for the business. Consider either a phased approach with low-risk rapid deployment for selected high-value assets or a big bang approach for all assets and devices.



Business Case: Identify the key drivers of business value early on. As you review potential solutions, keep the business case in mind throughout, especially the business drivers of key stakeholders whose support will be required for this investment.



Evaluation Team: Who to Engage (If You're an Enterprise Buyer)

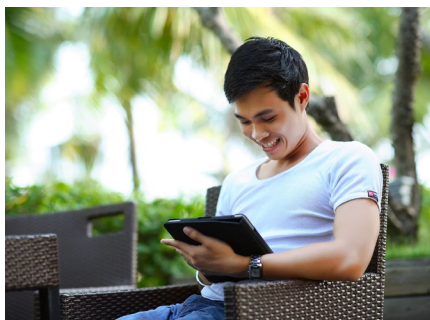
The first investment you make in Edge Infrastructure Solutions Management is unlikely to be the last. Most software-as-a-service (SaaS) solutions allow customers to invest in a limited range of capabilities to solve a discrete set of challenges. As your experience and comfort with a solution increases, so too does your readiness to invest in additional capabilities to manage your infrastructure.

Thus, one secret to long-term success is to think beyond your silo. From our experience, here are some common roles with interest in an Edge Infrastructure Management solution and the questions with which they're concerned:

	Role	Questions
Daily User	IT Manager	• Will this meet our business requirements? • Are we ready for this?
	Network Operating Center (NOC)	• How will this work with our existing set of tools? • Can this help us deliver our services more effectively?
Interested Stakeholder	CIO	• What's the ROI on this tool? • Will it make my organization more productive? • What will this tool do to ensure more reliable service to customers and stakeholders?
	Cybersecurity	• Is this tool secure? • Does it comply with corporate security and privacy policy?
	Legal	• Who owns the data in the cloud? • What are the vendor's data security practices?
	Finance	• How much does this cost directly/indirectly? • Is this worth the investment?
	Line of Business	• How will this tool impact our business operations? • What impact will it have on our team's day-to-day responsibilities and/or productivity?

Evaluation Tips: What Should You Look for an Edge Infrastructure Management Solution?

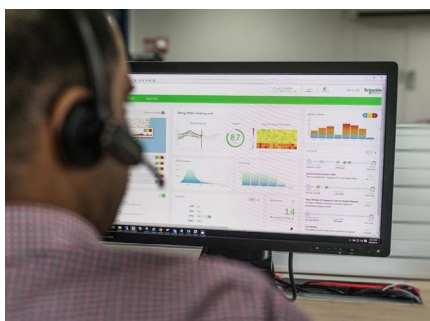
There are many suppliers of edge infrastructure management tools, but, despite their claims, not all have been created with equal value. Some vendors make much of certain shiny bells and whistles while omitting essential functionality that will limit the overall benefit of the solution. Thus, we recommend bucketing your assessment into the following categories and screening for at least the capabilities described below:



Functionality

What does the tool need to be able to do? Our customers consider the following capabilities to be core to achieving the bulk of their edge management objectives:

- a. Cloud-based – In this day and age of cloud solutions, don't even consider an on-premise solution unless you're required to by regulation. Cloud-based SaaS solutions open the door to a range of benefits that cannot be achieved otherwise. They allow for easier deployment, robust analytics, benchmarking, infrastructure health assessments, to name just a few. Every day brings new innovation, but it starts with the cloud.
- b. Vendor-Agnostic – Because critical edge infrastructure is composed of equipment from a range of manufacturers, the solution should work with 3rd party vendors. Don't settle for a vendor-specific solution.
- c. Scalable – One of the biggest constraints of on-premise edge infrastructure management solutions is their lack of scalability without incurring significant additional cost in time and money. Look for a solution that is easy to deploy and has limitless scale.
- d. Subscription-based/SaaS – One of the great benefits of subscribing to a solution rather than purchasing one is that you can turn it off when you want. As a result, the vendor needs to earn your business every day. And while the sticker price of a SaaS solution might be higher than licensed software, keep in mind what tasks you're pushing back to the vendor—upgrades, security patches, hosting, and redundancy, to name just a few.
- e. Vendor-based Mass Configuration – Depending on the number of devices you want to manage, a big driver of productivity is having the ability to configure multiple assets simultaneously.
- f. Vendor-based Firmware Upgrades – Firmware refers to the programs that help a device do what it's supposed to do. When manufacturers make improvements to the programs that run the device, they're released as firmware updates. Look for a solution that runs these updates automatically.



Support

While all vendors aim to build easy-to-use, intuitive, flawless solutions, sometimes you still need some help to ensure you get the value you set out to capture in the first place.

- a. Customer Success Management – With the emergence of SaaS, a new type of customer support called Customer Success Management (CSM) has emerged. This is a function committed to helping customers achieve their business goals with the use of their tool. Ask about what kinds of CSM support are offered.
- b. Onsite support if needed – The thing about distributed environments is that they are located where you often don't have IT staff nearby. And while an edge infrastructure management solution can tell you something is wrong or about to go wrong, you still might need someone to physically go to the site to repair or replace equipment. Ask the vendor about the support they provide and if their team is present everywhere your assets are.
- c. Integrations – Customers often want the data captured by their edge infrastructure management solution to be able to feed into other systems. Ask about what other key platforms the tool supports.



Security

You are entrusting the edge infrastructure management solution with a lot critical infrastructure data. Some of the questions you will want to ask should relate to:

- a. Product Security Features – Ask about the security measures the vendor has taken in the development of the tool. Is there two-factor authentication? Do they maintain high encryption standards?
- b. Data Privacy – Data privacy and integrity is essential in this day and age. How is your data going to be transported and stored? Is the vendor compliant with GDPR? How will your personal data remain confidential?
- c. Certifications – What sorts of certifications does the vendor maintain?



Company

Big Data & IoT trends are attracting countless companies, small and large, to the edge infrastructure management market. Customers are not lacking options. Given the rapid development of technology, customers are looking especially closely at:

- a. Experience – What is the company's knowledge of IT and experience in the industry?
- b. Viability – How big is the vendor today? Will it be here tomorrow? How invested are they in this market?
- c. Geographic Presence – Does the company operate in all the domains in which your edge environment resides? Are they familiar with all the local requirements of data security & privacy? Can they provide support wherever your assets reside?

Since most of the above are not yes/no questions, we recommend evaluating against a simple 1-5 scale where 1 = Vendor lacks capability and 5 = Vendor possesses strong capabilities.

Business Case

It is never too early in your buying journey to start developing an understanding of the cost and value of your edge infrastructure management solution. We often get asked for advice on how to think about a business case for this kind of investment. We think a business case involves several components:

1. Total Cost of Ownership (TCO)
 - a. Cost of monitoring each device/asset
 - b. Cost of initial deployment
 - c. Cost of solution maintenance over time
2. Return on Investment (ROI)
 - a. Revenue generation
 - b. Decreased network downtime
 - c. Increased productivity
 - d. Reduced mean time to repair
 - e. Improved business processes
 - f. Retirement of other tools/systems

Given the wide range of [edge use cases](#), we see [business cases](#) built on a variety of desired outcomes.

Industry	Example of Edge Infrastructure Management Solution Deployment	Outcomes Impacted
Retail	Typically, there's no on-site IT staff in retail locations. Retailer deployed tool to monitor in-store IT infrastructure supporting point-of-sale operations in numerous locations.	• Increased sales • Reduced downtime • Improved retail employee productivity
Healthcare	Local IT infrastructure supports healthcare staff applications and hospital room IT. Regional hospital operators struggle to manage distributed IT composed of equipment of different ages from multiple vendors. Deployed solution to gain visibility and benchmark performance to prioritize maintenance activity.	• Improved patient experience • Reduced unplanned maintenance spend • Improved employee satisfaction
Higher Education	University transitioning to Voice over Internet Protocol (VoIP) telephony for on-campus offices and dormitories. Deployed solution to gain mobile visibility into supporting infrastructure.	• Improved university staff and student satisfaction • Reduced burden on small IT support team
State & Local Government and Education	School district upgrading IT infrastructure to support onsite digital education curriculums and distance learning. Limited IT staff to support distributed school network needs on-the-go infrastructure visibility.	• Improved learning experience • Improved IT employee satisfaction and productivity • Improved IT support response time
Financial Services	Small investment firm experienced an over-heating issue in one of their network closets that caused an extended disruption to a regional trading office due to a failed HVAC unit. Deployed solution to gain 24/7 visibility.	• Improved IT support response time • Increased peace of mind for staff and management



Making the Right Choice

What are the stakes of this decision? In one sense, the beauty of SaaS is that it lowers the cost of choosing poorly. Just turn it off if it's not working for you. No more rip-and-replace like on-premise software. But that sells short the value and impact of choosing well. Edge infrastructure management solutions will not only increase your peace of mind, but they'll also add value to adjacent systems and processes.

But more than that, by investing in a tool that is rapidly growing, you can start learning and growing with a solution that is opening new doors to proactive infrastructure management every day.

For more information on Schneider Electric's edge infrastructure management solutions, visit www.ecostruxureit.com.

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