



A unified approach to **edge computing**

Software is the key to managing edge environments and harnessing the power of data



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TRENDS IN COMPUTING and IT have historically followed an expansion/contraction model.

We started with centralized mainframes and then moved to distributed PCs. Today we are experiencing another contraction point with data center consolidation and cloud-first efforts centralizing IT into as few points as possible.

Edge computing is the next expansion trend. It will distribute computing and data to multiple points at the edge and happen at a larger scale than the expansion of mobile technology. Edge computing and the internet of things

will dramatically increase the number of devices agencies need to manage and the amount of data they capture.

How edge affects IT modernization and security

To avoid piecemeal implementation, edge computing must be part of an agency's overall IT infrastructure. When done well, it will empower agencies to make more efficient and faster decisions because they'll be able to harness more data from across the entire landscape. It will also give end users better and faster access to data in the field so they can take advantage

of those insights in real time.

Edge devices will not replace existing IT but instead will expand on what's already in place. By incorporating edge computing into enterprise modernization, agencies can also start applying machine learning and other emerging technologies to harness the power of data.

However, with edge devices and data now outside agencies' firewalls, security must be embedded into edge computing. Important tools include automated security and centralized management, perhaps via the cloud.

The edge computing model should operate along the lines of a platform as a service so that it automatically applies security updates on all devices, for example. In addition, a zero trust model can ensure that user and device access is governed by dynamic policies versus static network rules.

Extending the edge to inaccessible areas

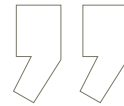
Nutanix works with a number of agencies on edge computing. For example, the military is using the technology at forward operating bases, in communication vehicles and even in backpacks. We run our software on devices as small as a laptop to put computing power in the hands of soldiers in austere environments.

In addition, edge computing is expanding the ability of drones to gather and process data. After a hurricane hits, for example, a drone can fly over the affected area and identify where the power outages are and where resources should be focused. Drone defense also involves edge





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computing, processing real-time radar and geospatial feeds to protect airports and no-fly zones from the misbehaving teenager or the nefarious actor with a store-bought drone.

The devices collect a massive amount of data and images, but rather than send all the data somewhere else to be processed, drones can use their own computing power to analyze images and identify anomalies to send back to the central cloud for

further analysis.

Although edge computing involves drones and tactical hardware, it also represents a big shift toward the power of software. Agencies need a platform that seamlessly unifies all elements of their enterprise IT. In short, they need a software stack that can integrate everything so the IT team can manage it as one.

Government agencies rarely have the

ability to increase the size of the IT team to accommodate a new technology like edge computing. Instead, they must be able to do more with less, and that comes down to finding the right platform — one that taps the power of software to manage all the environments and new devices coming online. ■

Dan Fallon is senior director of public sector systems engineers at Nutanix.

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