A LOOK AT TRENDS IN IT INFRASTRUCTURE AND OPERATIONS FOR 2022

We're all hoping that 2022 will finally end the unprecedented challenges brought by the global pandemic and things will return to a new normalcy. For IT infrastructure and operations organizations, the rising trends that we are seeing today will likely continue, but there are still a few areas that will need special attention from IT leaders over the next 12 to 18 months.

In no particular order, they include:

The New Edge

Edge computing is now at the forefront. Two primary factors that make it business-critical are the increased prevalence of remote and hybrid workplace models where employees will continue working remotely, either from home or a branch office, resulting in an increased adoption of cloud-based businesses and communications services.

With the rising focus on remote and hybrid workplace cultures, Zoom, Microsoft Teams, and Google Meet have continued to expand their solutions and add new features. As people start moving back to office, they are likely to want the same experience they had from home. In a typical enterprise setup, branch office traffic is usually backhauled all the way to the data center. This architecture severely impacts the user experience, so enterprises will have to review their network architectures and come up with a roadmap to accommodate local egress between branch offices and headquarters. That's where the edge can help, bringing it closer to the workforce.

This also brings an opportunity to optimize costs by migrating from some of the expensive multi-

protocol label switching (MPLS) or private circuits to relatively low-cost direct internet circuits, which is being addressed by the new secure access service edge (SASE) architecture that is being offered by many established vendors.

I anticipate some components of SASE, specifically those related to software-defined wide area network (SD-WAN), local egress, and virtual private network (VPN), will drive a lot of conversation this year.

Holistic Cloud Strategy

Cloud adoption will continue to grow, and along with software as a service (SaaS), there will be renewed interest in infrastructure as a service (IaaS), albeit for specific workloads. For a medium-to-large-sized enterprise with a substantial development environment, it will still be cost-prohibitive to move everything to the cloud, so any cloud strategy would need to be holistic and forward-looking to maximize its business value.

Another pandemic-induced shift is from using virtual machines (VMs) as a consumption unit of compute to containers as a consumption unit of software. For on-premises or private cloud deployment architectures that require sustainable management, organizations will have to orchestrate containers and deploy efficient container security and management tools.

Automation

Now that cloud adoption, migration, and edge computing architectures are becoming more prevalent, the legacy methods of infrastructure provisioning and management will not be scalable.

By increasing infrastructure automation, enterprises can optimize costs and be more flexible and efficient—but only if they are successful at developing new skills. To achieve the goal of "infrastructure as a code" will require a shift in the perspective on infrastructure automation to one that focuses on developing and sustaining skills and roles that improve efficiency and agility across on-premises, cloud, and edge infrastructures. Defining the roles of designers and architects to support automation is essential to ensure that automation works as expected, avoids significant errors, and complements other technologies.

AIOps (Artificial Intelligence for IT Operations)

Alongside complementing automation trends, the implementation of AIOps to effectively automate IT operations processes such as event correlation, anomaly detection, and causality determination will also be important. AIOps will eliminate the data silos in IT by bringing all types of data under one roof so it can be used to execute machine learning (ML)-based methods to develop insights for responsive enhancements and corrections.

AIOps can also help with probable cause analytics by focusing on the most likely source of a problem. The concept of site reliability engineering (SRE) is being increasingly adopted by SaaS providers and will gain importance in enterprise IT environments due to the trends listed above. AIOps is a key component that will enable site reliability engineers (SREs) to respond more quickly—and even proactively—by resolving issues without manual intervention.

These focus areas are by no means an exhaustive list. There are a variety of trends that will be more prevalent in specific industry areas, but a common theme in the post-pandemic era is going to be

superior delivery of IT services. That's also at the heart of the Autonomous Digital Enterprise, a forward-focused business framework designed to help companies make technology investments for the future.