

the  
**GORILLA**  
**GUIDE**<sup>®</sup> to...



# Understanding the Enterprise IT Landscape

IT's Role To Become More  
Business-Focused

**JOEP PISCAER**

# Understanding the Enterprise IT Landscape

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**By Joep Piscaer**

## TABLE OF CONTENTS

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<b>Introduction.....</b>	<b>4</b>
<b>End Users Become Remote.....</b>	<b>4</b>
<b>Remote-First Support.....</b>	<b>8</b>
<b>Operations and Infrastructure Separate.....</b>	<b>11</b>
<b>Kubernetes Unites Dev, Sec, and Ops.....</b>	<b>13</b>
<b>PaaS Renaissance.....</b>	<b>15</b>
<b>On the Edge.....</b>	<b>17</b>
<b>The Upshot.....</b>	<b>18</b>

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## ABOUT THE AUTHOR

**Joep Piscaer** is a seasoned IT professional, with 10-plus years experience as a CTO, head of IaaS and infrastructure, (enterprise) architect, and technical consultant. His specialization is in infrastructure, cloud, and way-of-work (DevOp, Infrastructure-as-Code). He has built Infrastructure-as-Code toolchains, IaaS platforms, transformed (infrastructure-focused) organizations to DevOps and Infrastructure-as-Code ways of work.

# Introduction

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Welcome to the Gorilla Guide® To... Understanding the Enterprise IT Landscape, Foundation Edition. This guide will look across the entire spectrum of enterprise IT, from end users and IT support to operations and cloud infrastructure, as well as the impact of Platform as a Service (PaaS) and edge computing.

With this knowledge, you'll be able to anticipate technology trends and use them to enhance your operations, improving your enterprise's bottom line.

## End Users Become Remote

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The most obvious and most impactful change of recent times is the global pandemic, resulting in the wholesale shift of end users to remote work. In fact, so many office workers now work from home that companies have started to cut costs by giving up office space.



**According to a [GetAbstract survey](#),** almost 43% of full-time employees in the United States want to work remotely even after the pandemic is over, and companies are moving many roles to remote positions permanently.

And this makes sense: Not only do employees prefer working from home, for companies, remote work opens up the pool of potential candidates for a role, allowing them to select the best candidate, regardless of location. Reduction in travel adds to employee satisfaction and improves their productivity. And teams often find that remote work cuts down on unnecessary meetings (although it usually takes a period of excessive meetings before that happens).

This is great, right? Happy employees, with more diverse backgrounds, with a better work/life balance, better productivity overall, and lower costs. Who wouldn't sign up for that?

## **LOCATION-AGNOSTIC IT ARCHITECTURE**

Unfortunately, remote work means a transition on the IT side of things, too. Remote workers need access to applications and data. They need have team meetings and video conferences. And their devices need to be secured, even if they never log on to the corporate network.

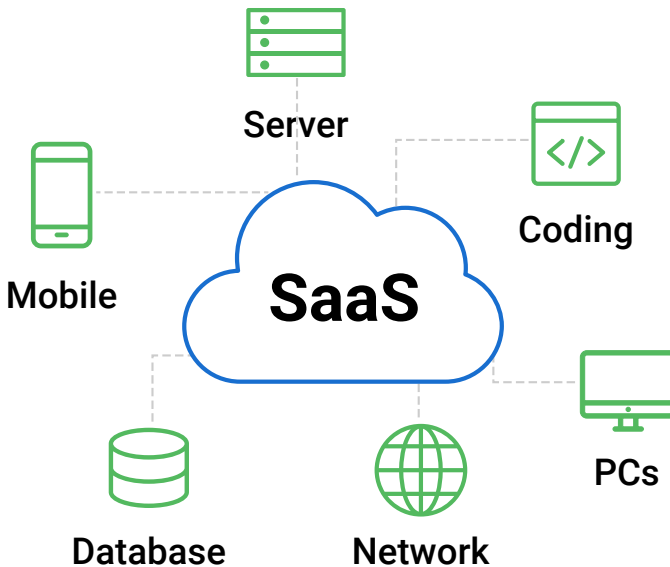
All of this requires a location-agnostic IT architecture that isn't tied to a physical building or campus. However, many enterprise IT environments still are, to varying degrees, built around a physical location or physical networks.

Luckily, the cloud came along to enable location-agnostic corporate networks. The move to at least a partial cloud environment was well underway before the pandemic, but it all became critical when companies had to close their doors. That left IT departments not only stuck having to put in the hard work to transform their security policies, identity and access

management (including more modern identity providers for authentication and authorization), and application landscape to be compatible with remote working, but having to do it in a big hurry and for a lot more people.

This is known as a remote-first approach, and putting all the pieces in place usually means moving to web-based interfaces or to Software-as-a-Service (SaaS) applications, which can have a significant impact on IT architecture, security, business continuity strategies, and cost. See **Figure 1**.

Moreover, you can't forget about the experience you provide to your users. Remote working has graduated, and employees expect a mature experience with modern ways to access web-based applications.



**Figure 1:** A typical SaaS architecture

Your IT architecture has a massive impact on your ability to deliver on this promise. Any technical debt in your infrastructure and the IT landscape will definitely bite you in ways you didn't expect or plan for.

Whether it's a location-centric security policy or networking strategy, legacy applications that aren't accessible to remote workers, or identity and access management that's not cloud-compatible, now is the time to modernize. This entails removing the inflexible and unworkable from your architecture so you can deliver a suitable experience to your workforce.

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## **Remote working has graduated, and employees expect a mature experience with modern ways to access web-based applications.**

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A not-so-small side benefit of moving to a modern application and infrastructure architecture is that it means having to spend less time on operational and infrastructural toil, freeing you to spend time on business- and customer-facing projects instead. This makes your IT team even more relevant to the business, and lets your organization reap more of the benefits of a digital transformation.

# Remote-First Support

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Supporting a remote workforce is no trivial endeavor. From figuring out the logistics of getting devices and peripherals delivered, to delivering support 24/7 across multiple time zones, to keeping your workforce productive when you can't control everyone's local Internet connection or bandwidth usage, the IT support game totally changes when everyone and everything is at a distance.

A modern IT architecture is merely a starting point to keeping your remote workforce happy. They need access to the right applications and data, regardless of when and where they work.

Whether it's your applications, your identity and access management solution, or your networking design and security policies that need updating, it's now urgent to figure out the steps you need to take toward remote-first IT support to give your users the backing they need.



## **24/7 support means establishing support**

channels via Slack or Microsoft Teams, making support documentation and guides available online and making sure onboarding and hardware replacements work out-of-the-box.

Asynchronous collaboration and communication are the norm for remote working. This is also true for IT support. Users want to be supported in a self-service, on-demand manner, independent of physical location or time.

## REMOTE-FIRST SOFTWARE

In addition to changing requirements for IT support, remote work also requires changes to the software being used by employees. Instead of physical meeting rooms, they convene in virtual conference rooms, use digital project management software, and communicate asynchronously using chat.

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IT has to support all of these to fully empower the workforce. Luckily, many of these applications no longer live in the on-premises data center. Instead, many solutions for video conferencing, project management, and asynchronous collaboration are offered as SaaS, so IT doesn't have to worry about scaling and operations, and onboarding new applications is, apart from the identity management piece, pretty seamless.

## AUDIO AND VIDEO

Remote working also changes the way people collaborate. These days, most meetings take place virtually over a video team call. For many, the standard integrated-webcam-plus-microphone option on their laptop is just fine, often augmented with a decent headset.

But field-facing employees in sales and marketing need semi-professional audio and video equipment for their jobs. Such requirements result in extra peripherals like cameras, audio interfaces, and lighting, and these may demand more bandwidth or higher-end user devices.

It's not just about looking professional on internal team Zoom meetings; these employees need to be their best digital self when presenting to (potential) customers. If online lectures, workshops, trainings, and board presentations are part of the mix, these, too, require more professional equipment.

All that will require IT departments to create (or expand) budgets for hiring A/V professionals to help such employee groups meet those needs.



### **At-home audio/video is not easy to do well.**

Solutions are bespoke, require individual attention, and are hard to standardize, or even get right at all.

## SECURITY

Remote-first working is a security challenge, often uprooting established security policies and changing network architecture designs. Remote-first working requires moving from a perimeter-based security model to an information-centric model that secures the data as it moves between cloud and local devices.

These changes are not made easily, and deeply impact cloud and on-premises environments alike. In fact, changing the security paradigm often speeds up cloud adoption, as the information-centric security model is predominant in the SaaS and cloud environment.

Unfortunately, existing networking and security products might not support this paradigm, teams may not have the experience and skills to make the transition, and the application landscape may not be fully compatible. In order to succeed, this approach requires simultaneously retraining staff, modernizing applications, and updating the networking stack.

## Operations and Infrastructure Separate



As infrastructure moves toward commoditization, the IT department's role will change from an operational and infrastructural focus on *keeping the lights on* to a more business-oriented perspective that uses IT, cloud, and operations expertise to support business projects more directly.



**Many in IT will become IT specialists in multidisciplinary teams**, responsible for the non-functional aspects of IT, like availability, cost, performance, and security.

The old roles will move away from a generic IT department and will instead be embedded in multidisciplinary teams containing software developers, business analysts, and UX designers. These teams will work on more focused, more specialized projects, closer to the business.

Among these will be cloud platform teams that take care of the scaffolding of the cloud, creating cloud “vending machines” that help teams consume the cloud in a secure, cost-efficient manner. They’ll take the cloud’s building blocks and make them ready for mass consumption within the organization, with the right controls in place to enhance cost, performance, and security. These vending machines will make cloud consumption truly self-service and on-demand.

This in turn has led to the rise of *landing zones*. A sound governance and operational model is critical for cloud adoption, and landing zones help users who need to consume cloud infrastructure do so immediately (on demand), independently (self-service), securely (with the right corporate security policies applied), and with other guardrails in place. The cloud platform team sets up the policies and configuration appropriately.

Other teams consume these landing zones, knowing they don't have to worry about the many technical details of accounts, networking configurations, security, or even the automation of common tasks; these are all part of the scaffolding. This reduces the time it takes to incorporate cloud solutions for new projects, eases manual effort, and increases operational quality, lessening the risk of failures or security issues down the road.

## Kubernetes Unites Dev, Sec, and Ops

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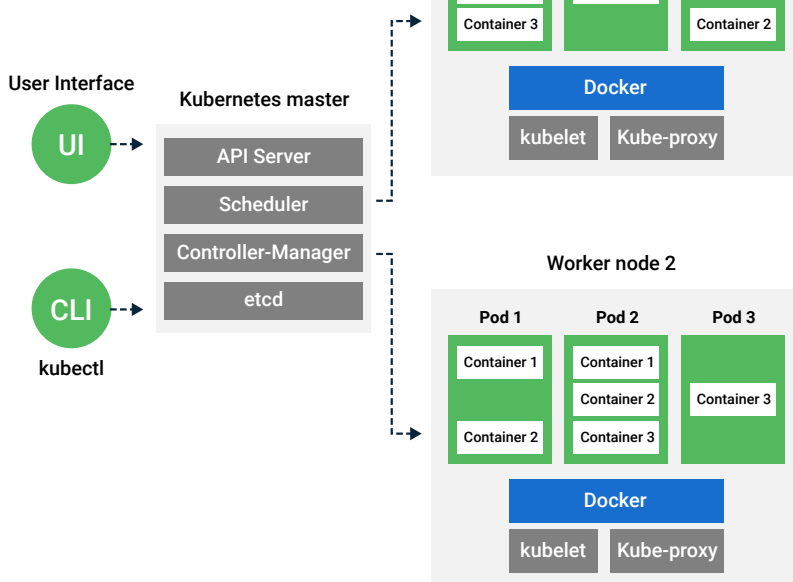
Speaking of separating infrastructure and operations: Kubernetes has a special place in the commoditization of infrastructure across software development, data analytics, and other teams that need access to infrastructure to run their workloads.

The technology is quickly becoming a responsibility shared among operations, development, and security teams. Unfortunately, as the old adage goes: When everyone is responsible, no one is responsible.



**Kubernetes is democratizing and commoditizing container platforms** for software developers, serving as the core for modern, cloud-native applications.

## Kubernetes Architecture



**Figure 2:** An example of a typical Kubernetes infrastructure

But Kubernetes requires the attention of all three pillars for successful adoption. If your organization needs Kubernetes, think about whether it's worthwhile to go down the DIY route at all. While running Kubernetes is a nice technical challenge for some, running Kubernetes yourself doesn't usually make sense. See **Figure 2**.

Managed service offerings are widespread, with many cloud providers and PaaS-like platforms dipping their toes in, from the incumbent public cloud vendors to companies like

Nutanix, Spectro Cloud, and Otomi creating solutions to meet different kinds of consumption requirements.

And just as with cloud mitigating the complexity of infrastructure, managed Kubernetes solutions take away the heavy lifting of designing, implementing, and operating an enterprise Kubernetes environment.

This reduces operational burden, configuration drift, and technical debt, and keeps Kubernetes out of the way of actually doing business. Don't let opportunity cost kill your business agility.

## **PaaS Renaissance**



While we're on the subject of opportunity cost and business agility, it's worth discussing the renaissance of PaaS.

Modern PaaS platforms are the apotheosis of the Kubernetes promise, and operate at a higher level of abstraction. Instead of delivering only a platform for your teams to run containers on, PaaS supplies more complete, more opinionated platforms on which developers can run their code directly, without worrying about all of the infrastructural plumbing underneath.

While PaaS is nothing new, Kubernetes creates a common denominator across platforms, something that was missing in the previous generation. It allows for easier onboarding, more mature tooling, and an overall better platform experience.

Keep in mind that as teams get used to not dealing with infrastructure and its associated plumbing, they want to focus only on their unique added value: the applications and solutions they create.

Their core *raison d'être* just doesn't include the infrastructure or the plumbing. That's why many are discovering that while Kubernetes is great, it's still a tad too *infrastructural* for them.

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**Modern PaaS platforms are the apotheosis of the Kubernetes promise, and operate at a higher level of abstraction.**

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Chances are, they'll be looking at outsourcing all of the plumbing to specialists in the form of full-stack PaaS platforms or cloud ecosystems with mature, CI/CD pipelines, code version control, artifact repositories, monitoring, logging, networking, and security solutions.

This will cause serverless and PaaS to creep toward each other in terms of functionality and pricing.

# On the Edge

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Kubernetes' influence stretches all the way to the edge. Edge computing will likely become nothing more than a single line of code in a Kubernetes pod deployment configuration: Containers can and will run anywhere, and Kubernetes is the platform of choice.



**Cloud, edge, and PaaS will start to blend,** and clever marketers will call it “distributed cloud.”

The reality? Edge is an emerging form of compute location, interesting for applications that need lower latency or need user-generated data to be processed quickly and cheaply. 5G and Kubernetes are game changers for true edge locations, such as cell towers, retail locations, and factory floors. All of these now run containers, and can be managed centrally from within the same control plane as the cloud and PaaS.

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These many small cloud instances and edge locations will make Kubernetes platforms accessible everywhere, without any operational overhead. Managed services for distributed

cloud and edge Kubernetes will start to define the next generation of application architectures, moving them from a few central cloud locations to many small cloud instances.

When these small cloud and edge locations take hold, your data will disperse across any or all of these locations. Not only is this an operational challenge that requires automated data management systems, governance and security are impacted, too, with data centers spanning legal jurisdictions, countries, and even continents.

## The Upshot



The way enterprises do their IT business has changed forever. The pandemic alone has brought about seismic shifts in operations.

This means you have your work cut out for you. Business-as-usual is dead, and companies must adapt or face the consequences.

We hope this Gorilla Guide has given you food for thought, and provided some perspective to guide your organization through the changes you'll need to make to be ready for the next wave of innovations.

Thanks for reading!

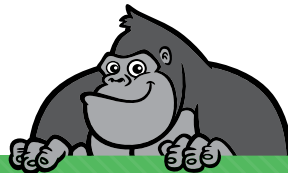
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