EMEA
EDITION

2020
STATE OF APPLICATION SERVICES REPORT

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INTRODUCTION

Across EMEA, applications are the engines that power the digital economy.

Through what is broadly referred to as digital transformation, all businesses across all industries are becoming application centric with the goal of moving faster, boosting efficiency, and securely delivering the digital customer—and employee—experiences the market demands.

While the pace of change varies by organization, most digital transformation journeys follow a similar path:

Phase 1: Automating individual tasks to improve efficiencies by digitizing IT and business processes.

Phase 2: Integrating those discrete automated tasks and taking advantage of cloud-native infrastructures to scale the process with orchestration.

Phase 3: Harnessing and analyzing telemetry from application services to provide actionable business insights that prevent loss, predict capacity, optimize resources, and increase revenue.

In order to accelerate organizations' progress through this journey, the industry is responding with new solutions. Today, we see tremendous innovation in the application services that support every step in the lifecycle of an application, including development, deployment, management, and operations. There is similar innovation in terms of application and infrastructure. These innovations are delivering new capabilities, agility, and scale that were not possible before.

For our sixth annual survey, we heard from 525 respondents across EMEA—representing a range of industries, company sizes, and roles—about the challenges and opportunities presented by the ongoing process of digital transformation. Their responses provide a unique view of the trends shaping the application landscape and how organizations around the world are transforming to meet the ever-changing demands of the digital economy.

Welcome to the EMEA edition of the 2020 State of Application Services Report.

2020 KEY FINDINGS

01

91% of organizations are executing on digital transformation–with increasing emphasis on accelerating speed to market.

02

88% of organizations are multi-cloud and most still struggle with security.

03

77% of organizations are automating network operations to boost efficiency.

04

70% of organizations are using 10 or more application services.

05

66% of organizations place primary responsibility for app services with IT operations, with more than half moving to DevOps-inspired teams.

01

91% of organizations are executing on digital transformation—with increasing emphasis on accelerating speed to market.

As organizations progress through their digital transformation, IT and business process optimization initiatives mature. But what exactly are they doing? Many organizations are moving beyond the first phase of digital transformation—business process automation—and scaling their digital footprint with cloud, automation, and containers. This transformation results in the creation of new ecosystems and skyrocketing API call volumes. Organizations able to harness the application (and API) data and insights generated will be rewarded with significant business value.

The Application Economy Evolves

According to senior leader respondents, nine in ten organizations in EMEA are embarking on digital transformation. This enthusiastic embrace of technology puts EMEA organizations ahead of their global counterparts. Consistent with our findings last year and across all regions, IT optimization and business process optimization are the top reported benefits of these initiatives. This demonstrates that IT organizations continue to re-evaluate their structures, processes, and workflows to set the stage for the next phase in their digital transformation journey.

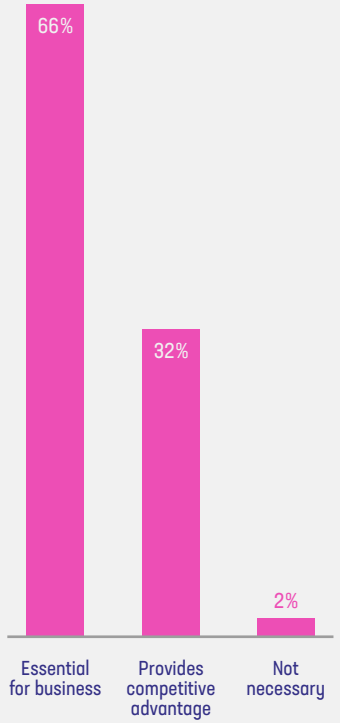
With organizations beginning to breach the second phase of digital transformation—a period marked by an increase in applications and an expansion of automation—their growing dependence on applications should be no surprise. When we asked survey participants why they wanted to engage in digital transformation, every region cited business agility first, with differentiated customer experiences cited as second and third. In EMEA, the primary driver for organizations was improving the velocity of new product/service introductions (61%), followed by responding to the behaviors of new buyers (40%) and emerging competitors (33%).

> **As digital business activities mature, organizations are looking to combine digital services from previously unconnected industries or segments, forming new ecosystems to create value.**

That every business today is an application business is not just a catchy marketing phrase. For 66% of organizations in EMEA, applications are essential to business; without applications, they cannot operate. And 32% tell us applications support their business and provide competitive advantage. Only 2% of respondents reported they do not

WE ASKED:

Please select the statement that represents how your organization views/treats its application portfolio. Select one.



WE LEARNED:

Applications are critical for just about every organization in EMEA.

FIGURE 01 : How organizations view their app portfolio

need applications to operate. Those views are consistent globally and not a surprise. Applications know no geographical boundaries, enabling organizations to expand their reach and grow their business.

It's important to note that the use of the term "business" here is not restricted to revenue-generating applications. External-facing applications make up less than half (45%) of an organization's app portfolio. The rest are internal facing and include productivity, process-related, and, increasingly, operational applications. These internal-facing apps are critical to digitizing business processes—and making them consistent, repeatable, and scalable.

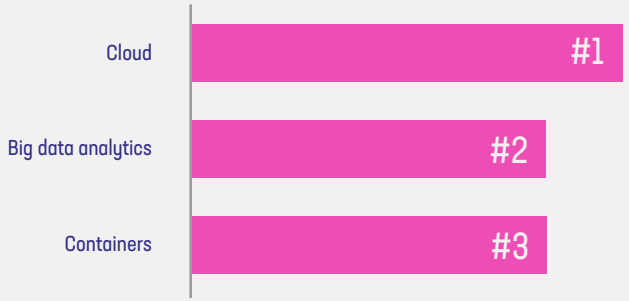
As digital business activities mature, organizations are looking to combine digital services from previously unconnected industries or segments, forming new ecosystems to create value. Senior leaders in EMEA are already eyeing that future, reporting that cloud, big data analytics, and containers will be the top three strategic trends in the next two to five years.

F5 INSIGHTS FOR KEY FINDING 01

It is time to manage your application portfolio like the business asset it is. First, focus on the application services required to secure, scale, and digitize IT and business processes. Automation and orchestration are key foundational tenets in this first phase of digital transformation. As you transition to the second phase, it is important to instrument application services to emit telemetry for unified visibility and control over policy enforcement. In the third phase, this telemetry from application services can be studied by cloud analytics tools to provide actionable operational and business insights such as predicting capacity, preventing loss, and delivering differentiated customer experiences.

WE ASKED:

Which technology trends do you think will be strategically important for your organization in the next 2-5 years? Select all that apply.



WE LEARNED:

Cloud, big data analytics, and containers will be the top three strategic trends in EMEA for the coming years.

FIGURE 02: Strategic trends according to senior leaders in EMEA

02

88% of organizations are multi-cloud and most still struggle with security.

Whether they are responding to government mandates or C-level demands, organizations use the public cloud to participate in industry ecosystems, leverage cloud-native architectures, and deliver applications at the speed of the business. Despite the strategic imperative, organizations are much less confident in their ability to withstand an application-layer attack in the public cloud versus in an on-premises data center. This discrepancy illustrates a real need for easy-to-deploy solutions that can ensure consistent security across multiple environments.

Organizations Struggle With Security in the Cloud

Following through on their strategic initiatives, organizations continue to adopt cloud platforms at a high rate, with 27% of respondents from EMEA reporting that they will have more than half of their applications in the cloud by the end of 2020. EMEA is in line with Asia Pacific and the Americas, with all three reporting between 27% and 35% of their applications in the cloud by the end of 2020.

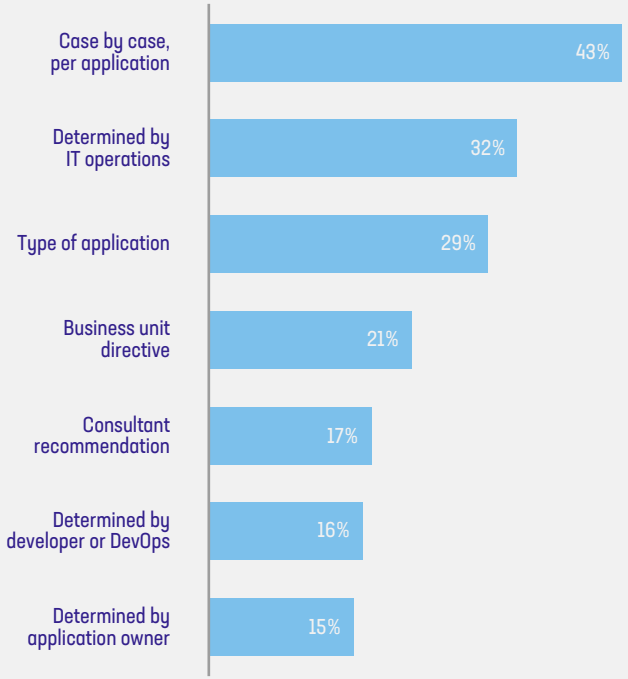
When we asked organizations how they decide which cloud is best for their applications, the number one answer in EMEA agreed with global respondents: on a "case-by-case, per application" basis. This approach necessitates using multiple providers, and three out of four respondents report that they have applications in two or more cloud providers.

> **It is imperative to have application services that span multiple architectures and multiple infrastructures to ensure consistent (and cost-effective) performance, security, and operability across the application portfolio.**

This per-application strategy is required because each application is unique and serves a specific function within the business. Each can have end users that scale from less than a hundred to into the millions. And each has a different risk exposure—from a breach, to public embarrassment, to costing the business billions of dollars in damages.

WE ASKED:

How does your organization decide which type of cloud is best for each application? Select all that apply.



WE LEARNED:

Organizations tailor their use of cloud infrastructure to suit a variety of stakeholders–no single decision-maker has sole responsibility.

FIGURE 03: Best cloud for the app

There are many challenges in managing a multi-cloud environment, and maintaining security, policy, and compliance are chief among them as reported by respondents:

- Complying with regulations
- Applying consistent security policies across all company applications
- Protecting applications from existing and emerging threats

The emphasis on protecting consumer privacy in EMEA makes it no surprise that organizations in the region struggled more with compliance than did their global counterparts.

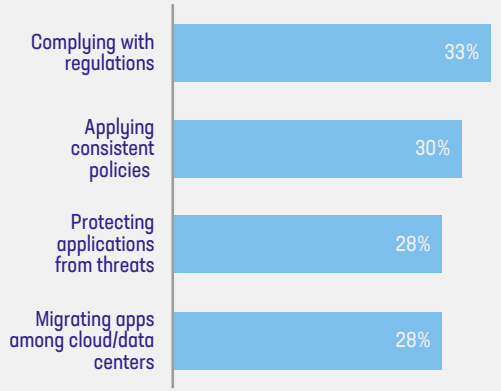
This is not surprising as evidenced by 66% of organizations in EMEA reporting a skills gap in security. The highest skills gap lies in the discipline of protecting their applications from attack and breach according to 60% of respondents. The location of those apps matters as well. Organizations report a much lower confidence in their ability to withstand an application-layer attack in the public cloud. While 66% report they are confident in their ability to protect applications in an on-premises data center, only 39% of organizations are confident in their ability to protect applications in the public cloud.

The challenge of providing security parity across all application architectures and infrastructure is brought into even sharper relief by taking a snapshot of the average application portfolio.

According to the survey respondents, no single application architecture has the majority in EMEA app portfolios. Three-tier web and mobile app architectures come in first at 38%, with client-server following right behind at 35%. Microservices/cloud-native architectures are on the rise at 16%, but old school mainframe/monoliths still account for 11%. With each new generation, additional business value is created and captured, yet the investments, value, and insights arising from the previous generation of architecture are still necessary—which leads to organizations having a diverse application portfolio.

WE ASKED:

As you think about managing applications in a multi-cloud environment, what parts of managing the application do you find the most challenging, frustrating, or difficult? Select all that apply.



WE LEARNED:

Attention to privacy and regulation of data across EMEA have a significant impact on multi-cloud challenges.

FIGURE 04: Multi-cloud challenges

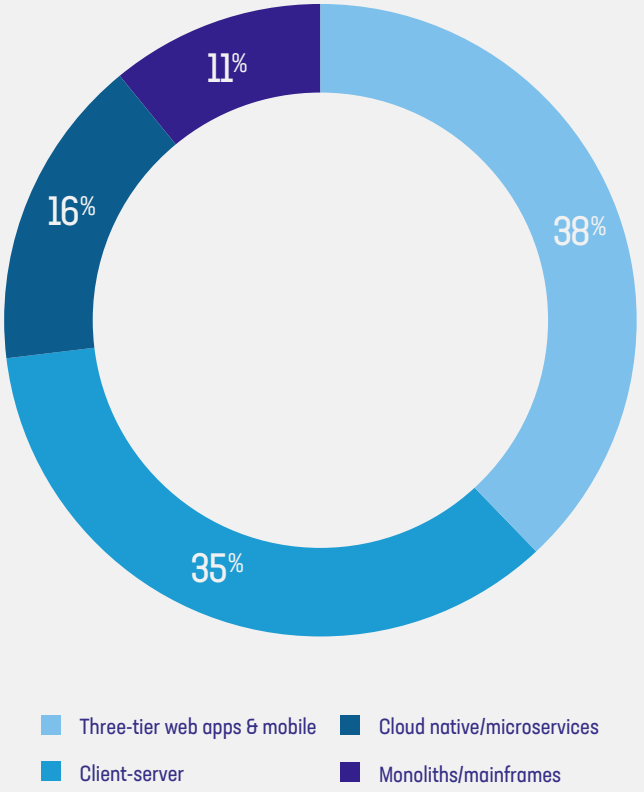
Given the heterogeneous mix of application architectures in a typical organization's portfolio, it is understandable that over a third of respondents reported that refactoring legacy applications for modern environments is a priority for digital transformation. Additionally, it highlights the fact that multi-cloud will be the norm for the long term. It is imperative to have application services that span multiple architectures and multiple infrastructures to ensure consistent (and cost-effective) performance, security, and operability across your application portfolio.

F5 INSIGHTS FOR KEY FINDING 02

The notion of achieving a single application architecture or uniform infrastructure environment is a pipedream for most organizations of scale. Instead, leading organizations recognize that the most efficient and effective way to treat each application uniquely while operating and securing applications across heterogeneous architectures and environments is through a set of application services that abstract the application logic from the underlying infrastructure.

WE ASKED:

Of those applications deployed today, roughly what share fit into the following categories?



WE LEARNED:

A diverse mix of application architectures is the reality for every organization.

FIGURE 05: App portfolios are diverse and multigenerational

03

77% of organizations are automating network operations to boost efficiency.

Unsurprisingly, given that the primary drivers of digital transformation are IT and business process optimization, the majority of organizations are automating their network operations. Despite challenges, they're gaining proficiency and moving toward continuous deployment with more consistent automation across all four key pipeline components: app infrastructure, app services, network, and security.

Automation and Orchestration Go Mainstream

Network automation continues to increase as organizations seek to realize gains in speed and consistency in their race to deliver applications to the market more quickly. We still see less automation in the deployment pipeline for network and security components than is true of app infrastructure and app services.

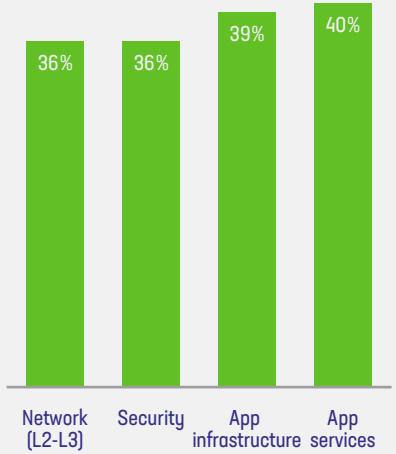
The tools of choice for network automation remain proprietary VMware (46%) and Cisco (40%) solutions, along with open source tools (40%), followed closely by CI/CD (33%) solutions. In its use of open source, EMEA is far ahead of its global counterparts (23%). CI/CD darling Jenkins has captured an impressive 22% of the network automation user base in EMEA.

> **We are still a long way from the continuous deployment model necessary for business to really take advantage of digital transformation and expand beyond optimization of processes to competitive advantage in the marketplace.**

Repository usage as part of the automation toolset remains low, with 12% of respondents using GitHub Enterprise and 9% using GitLab Enterprise. The lackluster use of these repository-first offerings in the automation toolchain is unsurprising as they tend to be considered developer tools. Organizations should, however, give these tools a hard look when considering how best to manage deployment artifacts—particularly when adopting an infrastructure-as-code approach that takes advantage of declarative methods of provisioning and configuration.

WE ASKED:

Which of the following infrastructure components have you automated within the continuous deployment pipeline? Select all that apply.



WE LEARNED:

Organizations in EMEA are gaining proficiency and moving toward continuous deployment with more consistent automation.

FIGURE 06: State of the deployment pipeline

Despite the fact that network automation continues to rise, we are still a long way from the continuous deployment model necessary for business to really take advantage of digital transformation and expand beyond optimization of processes to competitive advantage in the marketplace. The most frequently reported obstacles to achieving continuous deployment remain a lack of necessary skill sets, challenges integrating toolsets across vendors and devices, and budget for new tools.

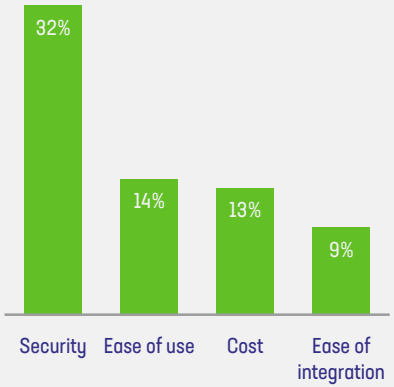
We see this frustration clearly in the position of “ease of use” as a preferred characteristic of app services, second only to security. With skill set and integration challenges slowing automation and orchestration initiatives, this desire for app services that are easy to use makes sense.

F5 INSIGHTS FOR KEY FINDING 03

The increasing use of CI/CD tools in the deployment pipeline points to a preference for open ecosystems as a way to address the skill set gap plaguing enterprise IT. Organizations look for application services that are compatible with open ecosystems and bridge the skill sets of operations and DevOps.

WE ASKED:

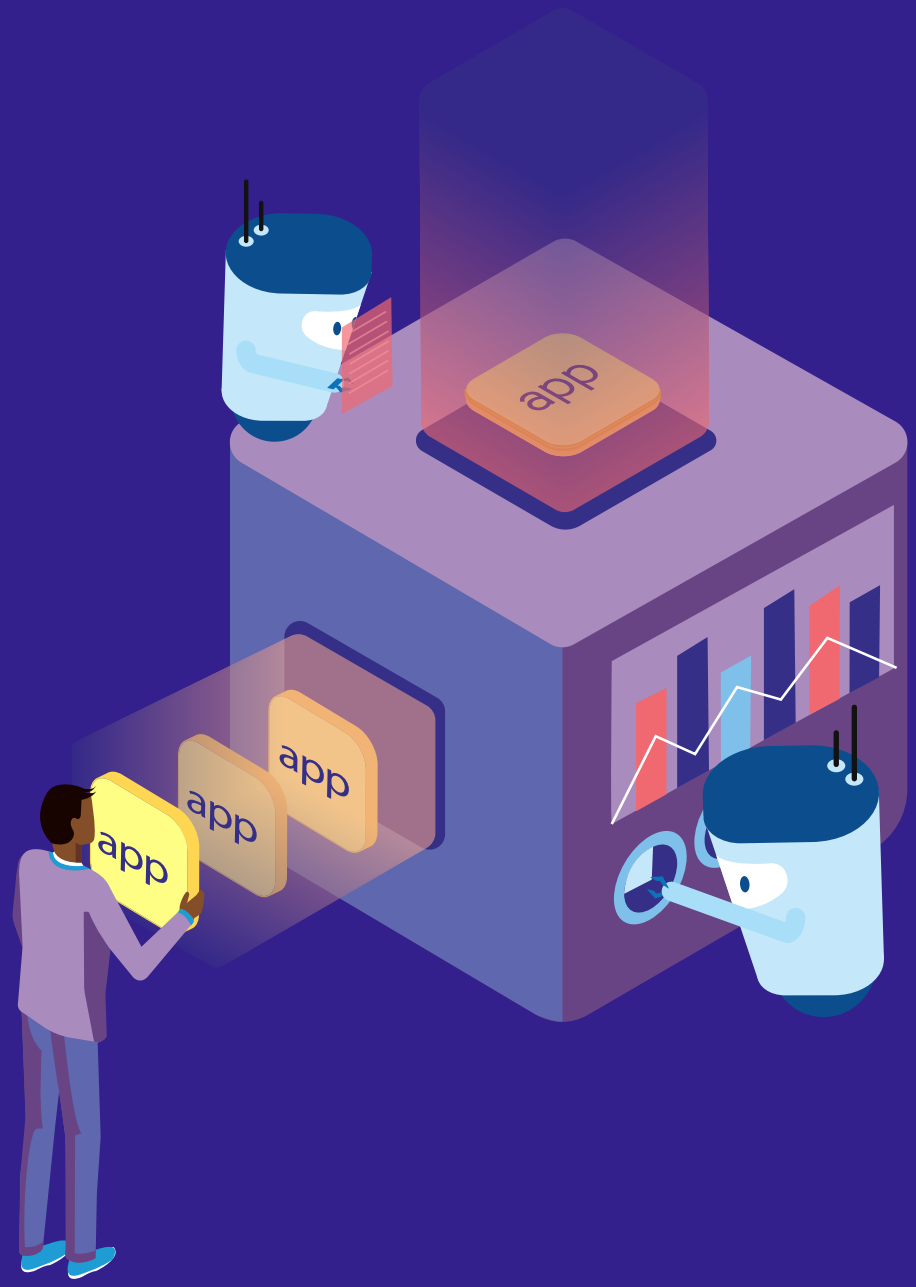
When you are deploying application services, what is the most important characteristic of the offering?



WE LEARNED:

Organizations in EMEA demand security and ease of use to accelerate time to value.

FIGURE 07: Primary characteristics desired of app services



04

70% of organizations are using 10 or more application services.

Digital transformation, cloud platforms, and modern architectures are driving adoption of app services. As cloud- and container-native application architectures mature and scale, more organizations are deploying related app services, such as Ingress control and service discovery, both on premises and in the public cloud. Modern applications require modern app services to support scale, security, and availability requirements.

Complex Environments Drive Adoption of New Application Services

We see the impact of the distribution of applications across multiple environments in the current and planned deployment of app services.

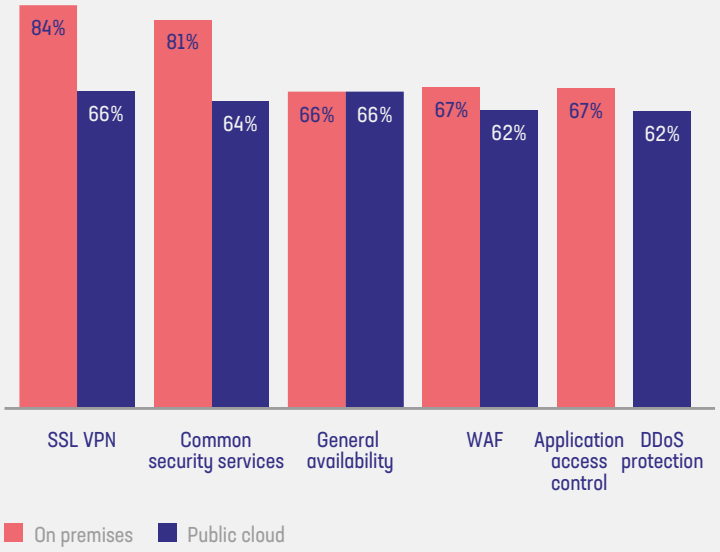
It is no surprise to note that the most widely deployed application services—as well as those that will be deployed in the next 12 months—are largely services that provide corporate and per-application security. For the third year running, respondents in EMEA told us by a wide margin (over 40 percentage points) that the worst thing they could do is deploy an app without security services.

On premises, security app services continue to dominate the top five application services deployed today: SSL VPN (84%) and common security services like firewall, IPS/IDS, antivirus, and spam mitigation (81%) lead the way, followed by WAF and application access control, both at 67%. General availability (load balancing, global server load balancing, and DNS) takes the last spot in the top five at 66%. In the public cloud, we see a similar set of app services, but note that—predictably—general availability tops the list and DDoS protection enters the top five.

When we shift our view to the next 12 months, however, we see the impact of cloud and modern app architectures on application services deployment plans. Of note, performance needs are rising to challenge security. On premises, SDN takes the top spot (34%) with SD-WAN (31%) in a close second. API gateways (30%), WAF (28%), and DNSSEC (26%) close out the list. In the public cloud, organizations in EMEA have chosen DNSSEC (38%) as the top app service for the next year with SD-WAN (37%) and single sign-on (37%) tied for second. Filling out the top five are anti-fraud (35%) and SDN gateways (35%).

WE ASKED:

Which of the following application services does your company currently deploy in an on-premises data center/private cloud or the public cloud? Select all that apply.



WE LEARNED:

Security dominates the list of top five app services deployed today in EMEA.

FIGURE 08: Top five application services deployed today

While most application services related to modern app architectures didn't make the top five, they are on the rise. Service mesh, Ingress control, and API gateways (along with HTTP2 gateways) all saw significant gains over our 2019 results both in actual and planned deployment rates. We see this trend being driven by digital transformation initiatives that are pushing organizations toward adoption of public cloud and modern (cloud- or container-native) architectures.

Interestingly, digital transformation has less of an impact in EMEA on adoption of container-native app services than is true globally. Nearly half (49%) of EMEA organizations without a digital transformation initiative have deployed Ingress control. That rises to over half (55%) among those organizations with a digital transformation initiative. This holds true for other container-native app services (service mesh and service discovery). Where digital transformation appears to have a significant impact on app services in EMEA is the deployment rate of API gateways, which jumps from 32% by organizations without digital transformation to 45% for those embracing digital transformation.

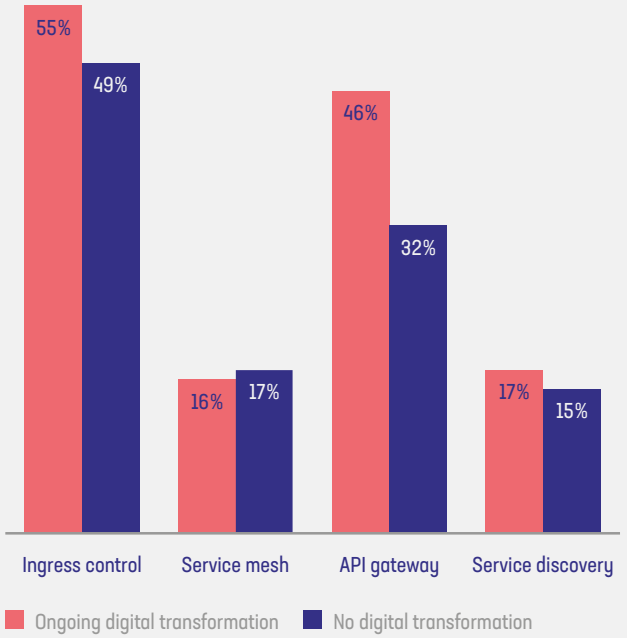
> **37% of organizations with high API call volumes have deployed Ingress control on premises today.**

We can't talk about applications today without simultaneously talking about APIs. It may be an application economy, but APIs are the glue that enables organizations to use apps to improve productivity, generate revenue, and run the business. APIs have a significant impact on the adoption of application services, perhaps more so than any other technology today. And it's telling that organizations with high API call volumes (more than 1M per month) are heavily investing in those application services required to operate, scale, and secure cloud-native applications.

For example, Ingress control is a relatively new application service that has arisen due to specific routing and scalability needs within containerized environments. More than one-third (37%) of organizations with high API call volumes have deployed Ingress

WE ASKED:

Are you executing on digital transformation, and which of the following application services does your company currently deploy in either an on-premises data center/private cloud or the public cloud? Select all that apply.



WE LEARNED:

Organizations in EMEA undergoing digital transformation are more likely to deploy modern app architectures and services.

FIGURE 09: App services currently deployed based on existence of digital transformation project

control on premises today. That's just a bit lower (36%) in the public cloud. The growing adoption of Ingress control points to higher numbers of container- or microservices-based applications, which now make up a healthy 16% of enterprise app portfolios in EMEA.

For service mesh—another container-native app service—44% of organizations with more than 1M API calls per month have deployed it in the public cloud and 45% on premises. As a service mesh enables visibility and availability across complex container-native applications, it makes sense that we see high adoption rates both on premises and in the public cloud where visibility is consistently cited as a significant challenge.

As important as APIs have become, security remains a challenge in all environments. Unsurprisingly, the confidence to withstand an attack increases with the maturity of an organization's API practice. Those organizations with over 10 million API calls per month report the highest confidence to withstand an attack (67%).

F5 INSIGHTS FOR KEY FINDING 04

Achieving a successful application deployment necessitates taking full advantage of the wealth of application services available across categories (security, availability, performance, identity) and across generations of application architectures. Choosing the appropriate strategy means selecting application services that can be leveraged across these dimensions to reduce complexity and overcome skills deficits. This is especially true in security and performance use cases that tie directly to business outcomes of reducing risk and fraud, as well as enhancing customer experience.

WE ASKED:

On a scale of 1-5 (with 1 being lowest and 5 being highest) how confident are you in your company's ability to withstand an attack against your APIs?

	Confident	Not Confident
Less than 1 Million	43%	17%
1 Million to 10 Million	58%	5%
More than 10 Million	67%	0%

WE LEARNED:

We learned: API practice maturity in EMEA corresponds with an organization's confidence to withstand an attack.

FIGURE 10: Security confidence in protecting APIs based on number of API calls per month

05

66% of organizations in EMEA still place primary responsibility for app services with IT operations, with more than half moving to DevOps-inspired teams.

As we've long suspected, operations and infrastructure teams continue to shoulder primary responsibility for selecting and deploying application services. However, as organizations expand their cloud- and container-native app portfolios, DevOps groups are taking more responsibility for app services.

IT Operations and DevOps Want Choice in Application Services

With all the hype surrounding DevOps and subsequent “Ops” movements, it is ironic that the one group left out is IT operations. This is fascinating given that our research has confirmed what we’ve long suspected: IT operations teams are primarily responsible for deploying app services—whether on premises or in the public cloud.

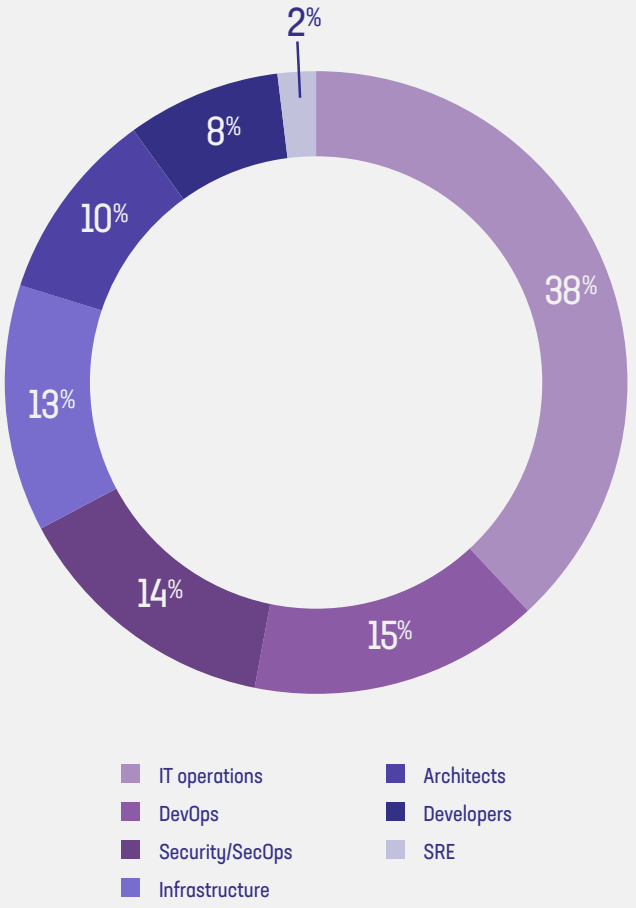
However, it’s also no surprise to find that as organizations transform from single-function to modern ops-oriented team structures, responsibility begins to shift from IT operations and NetOps to SecOps and DevOps. This dynamic is proof of the next phase of maturity we are starting to witness in DevOps. Initial projects are beginning to scale, and the need to demonstrate business value and meet defined performance metrics necessitates a focus on application services.

One obvious reason for this change in focus is the ongoing shift of application services into modern architectures. Cloud- and container-native applications are in many ways more dependent on infrastructure for scale and availability than previous app architectures. DevOps teams are intimately involved with the CI/CD pipeline, which, for cloud- and container-native apps, includes a growing portfolio of application services such as Ingress control, service mesh, service discovery, and good old-fashioned load balancing. As application services continue to distribute across the data path and become integrated with app infrastructures, we expect DevOps teams to increase their responsibility for securing, optimizing, and managing applications.

That IT operations is primarily responsible for the deployment and operation of app services may offer insight into the preference for containers as a form factor. Containers

WE ASKED:

Which roles within your organization are primarily responsible for deploying and operating application services in the public cloud? Select one.



WE LEARNED:

IT operations and infrastructure teams retain primary responsibility for app services in EMEA.

FIGURE 11: Primary responsibility for deploying app services in the public cloud

deliver the platform independence and native support for a modern infrastructure-as-code approach that eases the day-to-day role of IT operations. This provides the ability to establish repeatable deployments at scale, a critical capability for organizations making progress on their digital transformation efforts. The preference for containers was slightly higher in EMEA (20%) than in other regions this year.

What's striking is the strength of the preference for containers over virtual appliances across roles. Cloud-related roles, developers, and SRE/DevOps are all twice as likely to prefer containers over virtual appliances. This shift toward containers speaks to the rising number of cloud-native applications dependent upon an architecture that relies on app services for execution and operation.

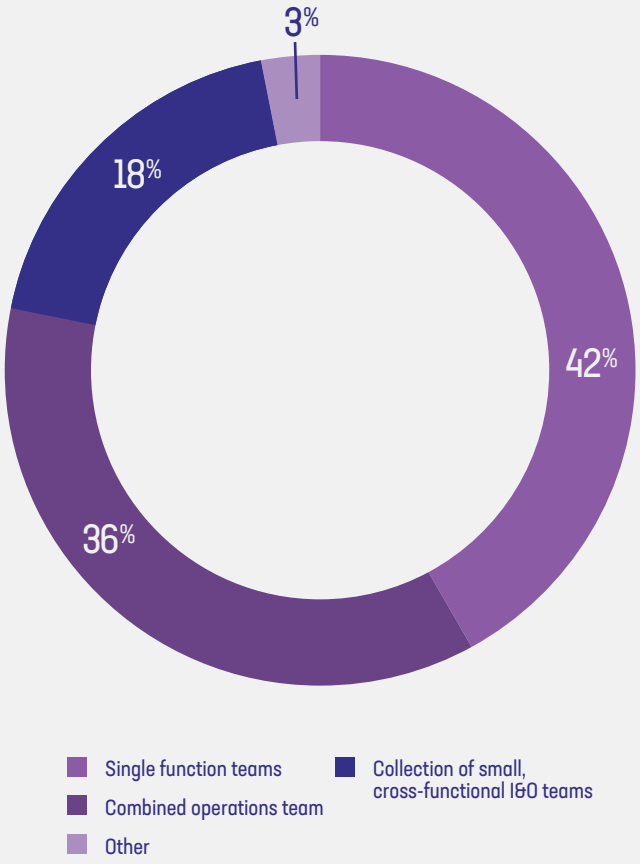
> **As application services continue to distribute across the data path and become integrated with app infrastructures, we expect DevOps teams to increase their responsibility for securing, optimizing, and managing applications.**

Additional form factor options for app services on premises should not be dismissed lightly. In EMEA, 7% of respondents indicated a desire for app services "as a service," while 6% would prefer a web/app server plugin. Another 4% would like to consume app services as an application library.

With no clear "favorite" form factor, the winner here remains choice. This freedom of choice is necessary for the operations roles. They are tasked with deploying and operating a platform for the entire organization, a platform that is flexible enough to deliver legacy applications without significant modernization or refactoring, as well as capture new application workloads—all while simultaneously minimizing organizational risk.

WE ASKED:

How would you best describe your IT infrastructure and operations (I&O) organization? Select one.



WE LEARNED:

More than half of IT organizations in EMEA utilize DevOps-inspired teams.

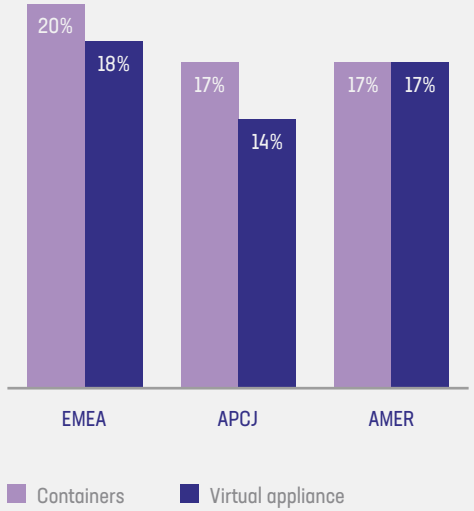
FIGURE 12: IT organizational structure

F5 INSIGHTS FOR KEY FINDING 05

As application portfolios transition to more modern architectures and IT organizations begin to align around more collaborative team structures, application services must evolve to provide ease of use for all skill sets within IT organizations. Maintaining a consistent set of app services while supporting choice in their infrastructure and platforms is key for both IT operations and DevOps teams as they work together to support the business.

WE ASKED:

For on-premises application services, what is your preferred form factor? Select one.



WE LEARNED:

Organizations in EMEA prefer containers at a slightly higher rate compared to their global counterparts.

FIGURE 13: Preferred form factor for app services on premises

CONCLUSION

Most organizations engaged in digital transformation expect similar outcomes.

First, it's vital to be able to deliver a superior (and secure) customer experience that will help attract and retain customers. Second, enterprises want to see improvements in business agility that allow them to nimbly pivot and respond to new opportunities or changes in the market. Lastly, they expect a tangible time to value that benefits everyone—from the developers building the code to the DevOps teams delivering it to the operations teams in charge of deployment and ongoing operations.

Enterprises face several challenges as they evolve. Infrastructure lock-in limits their autonomy and ability to move at the speed of the business. Complex compliance requirements and an ever-evolving threat landscape slow speed to market and sometimes impact the end-customer experience of their applications. And each new application architecture or infrastructure environment introduces dozens of new tools along the data path from the application code to the customer experience. These tools help organizations develop, deploy, manage, and secure their applications. But, if implemented wrong, they can also increase operational complexity, require new skills, and, as a result, raise costs.

As shown by the responses to the 2020 State of Application Services survey in EMEA, most organizations are just now entering the second phase of digital transformation, automating more parts of the network and incorporating continuous deployment principles to improve productivity and enhance customer experiences. While the current gains may feel modest—and the challenges intense—organizations are persisting toward the third stage of digital transformation to create completely new business opportunities. Given the heterogeneity of application architectures and infrastructures in use, the most efficient way to do this is through a consistent set of multi-cloud application services that empower organizations to leverage data and applications while laying the groundwork for dramatic improvements in the future.

Once complexity is reduced and applications can be supported, optimized, and managed with a consistent set of application services that spans application architectures and infrastructure environments, organizations can really begin to leverage the data captured by these apps using AI-driven analytics. The scale, agility, and complexity of the digital enterprises of today and tomorrow require that applications have the ability to automatically adjust to operating and business conditions. We predict that these new capabilities will breed the next wave of application services designed to collect, analyze, and act on the telemetry generated by apps and their infrastructure.

And so, while we remain enthusiastic about the automation and process optimization that's changing business in EMEA now, our sights will soon turn to the next phase of digital transformation in which insights and data create massive opportunities. In this next stage of the journey, we believe that organizations throughout the region will use these new application services to enhance the performance, security, operability, and adaptability of their apps—which will help grow the business and deliver the digital experiences that customers demand.

Until next year...

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