COMPETITIVE EDGE IN THE CLOUD
DRIVING GROWTH AND VALUE WITH ADAPTIVE DELIVERY, SECURITY, AND ACCELERATION
Your business relies on the cloud for agility, cost savings, and scalability. And like most companies, you’re using multiple clouds to support a variety of business functions and develop new capabilities that keep your organization competitive and differentiated. But how do you ensure that the cloud technologies enabling your business aren’t also introducing security risks, impacting customer experience (CX), or accumulating more expenses than anticipated?

That’s where Akamai comes in. Akamai’s cloud delivery platform is designed to extend and enable your cloud infrastructure to protect your business from cyberattacks, deliver more engaging online experiences, and offload traffic to maximize scale, reliability, and cost efficiency. You’ve moved your applications and workloads to the cloud — now make the cloud work for you with adaptive delivery, security, and acceleration solutions from Akamai.
ADOPTING AN AGILE CLOUD STRATEGY

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In response to multicloud adoption trends, organizations will increasingly demand a simpler way to move workloads, applications, and data across cloud providers’ IaaS offerings without penalties.

— Gartner
For many organizations, the cloud has quickly evolved from catalyst, to requirement, to inadequate. According to IDC, by 2020 over 90% of enterprises will use multiple cloud services and platforms. As you continue to adopt a hybrid cloud approach for specialized capabilities and services, complexities arise, efficiencies wane, and additional costs accumulate.

**TODAY’S CLOUD CHALLENGES:**

- **Hybrid environments** – Cloud vendor tools work well on one platform, but not others.
- **Security** – Immediate protection for new threats is not always available.
- **Availability** – Complex, interconnected apps across multiple networks cause downtime.
- **Cost** – Expenses rise quickly if consumption isn’t managed or grows unexpectedly.
- **Culture** – Utilizing the best of the cloud requires realignment of people and processes.

Akamai’s cloud delivery platform helps you take your cloud strategy to the next level. Complementing your existing infrastructure, Akamai offers edge solutions and services that help you to deliver a better CX closer to users and provide a forward defense designed to keep attackers far away from valuable infrastructure, apps, and data. Akamai allows you to choose the cloud strategy that’s right for your business, so you can drive growth, innovation, and value.
CLOUD INFRASTRUCTURE VS. CLOUD DELIVERY

Your cloud infrastructure keeps your business humming — and there’s no reason to disrupt the systems and processes you’ve already invested time and money in. Adding the Akamai cloud delivery platform helps you maximize the benefits of existing cloud architecture.

A cloud infrastructure platform, such as Amazon Web Services (AWS), defines your application architecture. It includes tools to build and operate servers, storage, and computing for digital applications. A cloud delivery platform, like Akamai, addresses user experience in their region, on the network they’re connected to, and with the device and browser they’re using. It includes automated intelligence and machine learning to route, accelerate, secure, and analyze content and digital performance.
CLOUD INFRASTRUCTURE VS. CLOUD DELIVERY PLATFORM
As smart drones, autonomous vehicles, and other AI-powered smart devices seek to connect and communicate instantly via the IoT, the matter of sending data ‘all the way’ to the cloud will become highly impractical. Many of these devices will need real-time response and processing, making edge computing the only viable option.

— Gartner

Forbes reports that up to 40% of all compute will happen at the edge by 2020, according to IDC predictions. As CX, business, and mission-critical capabilities drive the need for real-time response and processing, edge computing is a required capability.

Akamai solutions help you make the shift to stay ahead of the digital transformation curve:

• **Tools** – solutions that work seamlessly in hybrid environments for operational simplicity.

• **Reactive** – proactive security that adapts rapidly to the dynamic threat landscape.

• **Availability** – content delivery that improves performance.

• **Savings** – value by controlling costs with automation, offloading, and optimization.

• **Operation** – differentiation with technology solutions that are fast, adaptive, and agile.
SHIFT FROM TOOLS TO SOLUTIONS

To deliver cost-effective access to expensive hardware and massive scale, cloud infrastructure providers don’t also design, configure, and manage custom security and performance solutions as your business grows in digital maturity. Most architectures now require a hybrid approach — a mix of cloud and on-premise solutions, or multiple cloud providers — that demands solutions that can work seamlessly across all environments.
Cloud vendor tools are generally optimized to work in one cloud environment. These click-to-provision tools are typically not full-service, leaving you to build, operate, and maintain them. Incorrect configurations or unsecured application program interface (API) connections and services increase the risk of security breaches. In addition, most open source software or freemium cloud solutions provide basic security and performance capabilities that are not easily scalable. If you don’t consider scale of performance and security from the start, you’ll be rearchitecting a successful app or revenue-generating project.

The Akamai platform expands your cloud resources to support every stage of your digital maturity. By transitioning from a patchwork of disparate tools to integrated performance and security solutions that span your network, it is easier to scale to address growing business needs. Akamai’s platform-agnostic solutions provide consistent delivery, security, and performance across hybrid cloud deployments.
If your team doesn’t have the time or expertise to optimize content delivery, manage images, accelerate mobile apps, and mitigate the impact of bots and DDoS attacks, Akamai offers out-of-the-box software as a service (SaaS) as well as self-service solutions with 100% service level agreement (SLA) availability. Akamai solutions are inherently secure for a consistent security posture, and backed by expert services and support teams.

Growing online offerings, application capabilities, and connected device interactions are driving increasingly complex architectures and integrated experiences, requiring greater digital maturity to maintain customer engagement and trust. Digital maturity occurs when security and CX are sufficiently intertwined and understood as complementary. A Forrester digital maturity survey commissioned by Akamai found that companies struggle to balance security with digital experience. Of the five categories assessed in the survey — security, strategy, digital experience, cloud, and general technology — most executives reported their firm is strongest in security and weakest in digital experience maturity.
SHIFT FROM REACTIVE TO PROACTIVE SECURITY

The business cost associated with cyberattacks is growing. Distributed denial-of-service (DDoS) attacks cripple websites and applications, leading to revenue loss and brand damage as well as higher bandwidth consumption from the rapid spike in traffic. ZDNet reports that “DDoS campaigns are on the rise and the enterprise can now expect a bill of at least $2.5 million every time they become a victim.”
Maintaining a strong security posture requires a proactive strategy that adapts to changing infrastructure needs and cybersecurity threats. Cloud vendors are not business security partners, so you can’t expect them to provide immediate protection when a new threat vector is discovered or robust defense when you’re under attack. To proactively manage security, you need consistent defenses and visibility across your entire network.

Delivering over 95 exabytes of data across billions of devices for over 6,000 of the largest online companies, Akamai has tremendous visibility into huge quantities of legitimate and malicious traffic around the world and within industries. In total, Akamai experienced 15,965 attack events throughout 2017, according to the Q4 2017 Akamai State of the Internet / Security report.

The Akamai cloud delivery platform’s machine learning engines are designed to leverage this data to fortify your security by stopping attacks before they reach your data center or cloud infrastructure. Powerful, automated protection reduces your effort to secure web applications and ensures that your websites, mobile infrastructure, and API-driven requests are protected from malicious attacks across all cloud environments. Uptime is maximized with 24/7/365 monitoring and management from experts worldwide.
Akamai saw a 31% increase in DDoS attacks from the U.S. in Q4 2017 compared to the same time the prior year. Capable of delivering over 60 Tbps of traffic, the Akamai cloud delivery platform is built to handle the largest and most sophisticated DDoS attacks. Akamai provides 0-second DDoS mitigation through globally distributed security operations and control centers, staffed with industry experts that provide always-on monitoring, scrubbing, and DDoS mitigation services without rerouting traffic for minimal disruption.

In addition to DDoS activity, Akamai saw 146 petabytes of traffic in November and 145 petabytes in December of bot traffic alone, which translates to approximately 550 Mbps. The Akamai cloud delivery platform provides solutions to easily analyze the business and IT impact of bots, and stop bad bot activity that can lead to fraud. Using advanced behavior anomaly detection, sophisticated bot management solutions effectively manage bot activity without blocking legitimate users.
Akamai solutions help your security strategy by supporting safe, agile development — and DevSecOps — with open APIs for continuous integration and delivery (CI/CD), seamless incorporation into automation routines, and real-time operations. Deploying a cloud-based web application firewall (WAF) applies and manages security controls before traffic reaches applications, unburdening developers without increasing your attack surface.

All of these capabilities are delivered together with superior insight into how sites, apps, and APIs are being delivered and secured. Akamai’s security analytics bring DDoS, application security, and endpoint protection into a unified set of dashboards and drill-down reports that ensure security teams can detect, understand, and enable threat defense. Integration with security information and event management (SIEM) further enhances corporate security analytics.
SHIFT FROM AVAILABILITY TO PERFORMANCE

Cloud providers are optimized for availability, not performance. You can move apps to the cloud for unlimited storage and compute resources. Scaling with the Akamai platform brings your apps closer to users across the globe, allowing you to maximize availability, reliability, and performance, while decreasing complexity and costs.
Slow-performing apps and websites reduce customer engagement, revenue, and brand value. Locations far away from hosted cloud apps often experience sluggish performance, but replicating apps in multiple regions requires additional architecture complexity and costs as well as increased investments in performance and security. For example, most public clouds auto-scale based on demand, but it takes several minutes to spin up new instances. With 53% of visits to mobile sites abandoned if pages load in more than 3 seconds, this delay can be disastrous.

The most pervasive, highly distributed content delivery network (CDN), Akamai has more than 240,000 servers in over 130 countries within more than 1,700 networks around the world. Delivering low latency for customers across the globe with a 100% uptime SLA, the platform directs content via optimized Internet routes, avoiding congestion points and outages.
Akamai’s content delivery network allows you to assemble dynamic content closer to users for better scale and performance. The Akamai Intelligent Platform™ caches assets and application fragments at the edge to enable personalized experiences without server calls taxing back-end infrastructure. Even if your back-end infrastructure goes offline, Akamai provides uninterrupted availability so users can continue to browse.

Akamai delivers performance at the device level with segmentation policies that enable pre-positioning of content on devices and adapt to changing network and device conditions to ensure the best possible user experience. Content is proactively pushed to devices and pages are prioritized for performance, leveraging HTTP/2 and adaptive acceleration to learn user behavior and automatically adjust.

To deliver the rich, engaging user experiences that today’s online users demand, Akamai provides built-in optimizations for content and images. Image optimizations include auto-adjusting image resolution and creating derivative images that maintain quality for rapid visual rendering. In addition, advanced offload delivers dynamic content more efficiently.
A Fortune 500 technology retailer needed the scale to support 10x traffic without relying exclusively on infrastructure growth. It leveraged the Akamai cloud delivery platform to increase offload and reduce origin requests, while boosting reliability. The retailer deployed Akamai's advanced caching capabilities, such as dynamic page caching, in front of its cloud deployment. In one incident, Akamai continued serving content from the edge during an 8-hour outage — 99% of requests from Akamai to the origin failed, but 85% of requests from end users to Akamai were successfully served from the cache, achieving business continuity and brand protection.
SHIFT FROM SAVINGS TO VALUE

Even though the tools and services from cloud vendors are cost-effective, expenses can increase quickly as you spin up additional instances to support more customers, or respond to an unexpected traffic surge such as a market event or DDoS attack. With better control over your content, you can leverage all the savings that cloud vendors provide — such as free transit between data storage infrastructure and servers in the same region — then offload additional traffic to Akamai to get more value out of your cloud deployments.
Imbalanced traffic distribution leads to unnecessary consumption and unanticipated costs. For example, load-balancing solutions from cloud providers only balance traffic on the same cloud platform, where all of the decisions are handled without accessing another provider or your on-premise data centers. In hybrid cloud environments, you need a method for overseeing utilization across all platforms.

By offloading content to Akamai, you can reduce unpredictable expenses and balance loads in hybrid environments. The Akamai cloud delivery platform provides automation, offloading, and optimization to help control costs. It also helps you manage uncertainties in cloud migration or new code releases.

To reduce risk in agile development, canary releases push new code to a subset of users in production. Configuring these settings at the load balancer or gateway router is difficult to manage, risky in production, and takes coordination across teams and functions. Akamai lets you control traffic across hybrid environments with the ability to gradually shift a percentage of users to a new software release and failover immediately with any challenges in production, accelerating time to market and reducing downtime without overloading infrastructure.
A leading global exchange planned to roll out new code in phases across its cloud infrastructure platform in a zero-downtime deployment. It decided on the Akamai Phased Release Cloudlet to gradually shift traffic while retaining the flexibility to failover immediately. The development team served a 50/50 traffic split between two origins. It planned to use the Cloudlet to move 100% of traffic to Origin A, while new code released to Origin B, then repeat the process in the opposite direction, before restoring the split. Akamai enabled granular control without overloading the origin to quickly and easily manage traffic shifts, while minimizing exposure and risk.
SHIFT FROM OPERATION TO DIFFERENTIATION

You know your needs: technology solutions that are fast, adaptive, and agile so you can take advantage of new opportunities before they disappear. Superior digital experiences win customers, increase revenue, and keep your business competitive, but the job of turning ideas into reality is complex and leaves little room for error. Supporting a variety of different business needs with multiple cloud technologies requires a shift in culture.
Cloud and DevOps strategies go hand in hand, and new solutions cannot introduce friction. Cloud-specific code limits portability, containerized deployments restrict the ability to benefit from advantages of any one platform, and traffic management from cloud vendors doesn’t work in hybrid architectures. In addition, the transition from a trial app to a full-production workload leads to hard-to-predict pricing that challenges business forecasting. The more effort put into building and operating your own systems, the more focus is diverted from differentiation.

The Akamai cloud delivery platform is compatible with all cloud providers, allowing you to pursue the optimal hybrid strategy for your business. Akamai solutions fit seamlessly into established DevOps processes by providing tools, integrations, and plugins to connect and integrate the platform into your automation workflows.

Using industry-standard tools such as Jenkins, you can programmatically manage configurations for your digital properties and deploy them like any other entities in your CI/CD pipeline. Akamai boosts the productivity of your development teams by seamlessly connecting to tools such as Varnish, Terraform, and WordPress. For example, changes on Varnish cache servers automatically translate to Akamai via the Varnish connector.
To iterate quickly, developers must work the way modern apps are created. Akamai’s cloud delivery solutions enable scripted and automated API management controls, allowing developers to integrate CX improvements and application security into existing DevOps toolchains, while securing deployments with robust API protection and cloud-based security. The Akamai platform delivers your content to customers quickly, reliably, and securely, so you can focus on creating differentiated digital experiences.

**CASE STUDY**

**MANAGING ZERO-DOWNTIME CODE DEPLOYMENT IN THE CLOUD**

One of the largest mutual fund companies in the U.S. empowered its application teams to utilize the cloud to best serve customers, regardless of platform. This multi-cloud approach allowed teams to select the right technology to achieve their business goals, rather than the other way around. To maintain consistent web performance and security across multiple cloud platforms, the company used cloud-agnostic web performance and security solutions from Akamai for centralized IT and security to scale, support, and respond to changing business needs. With this approach, IT was able to support application teams without putting the company at risk.
THE AKAMAI EDGE

The demands to stay ahead of the digital transformation curve are exploding, requiring increased value and growth from cloud technology investments. The Akamai cloud delivery platform complements existing cloud infrastructure to deliver superior user experiences that are instantaneous, rich, and secure. Vendor agnostic, Akamai enables you to adopt the cloud strategy that best supports your business goals, while maintaining security and performance at every point.

As the architects of the world’s largest cloud delivery platform optimized for security, accessibility, and performance, Akamai has the only globally distributed network capable of placing integrated compute, data, and experience optimizations closer to your end users and away from threats and critical infrastructure. The Akamai Intelligent Platform™ solves complex digital transformation challenges and provides the fastest route to capturing new opportunities — positioning you to find competitive edge in this hypercompetitive world of software, services, and devices.
To align your cloud strategy with your organization’s digital maturity, take the digital experience and security assessment at www.akamai.com/digitalmaturity. For more information about how Akamai can help you gain competitive edge in the cloud, contact sales@akamai.com.

Akamai secures and delivers digital experiences for the world’s largest companies. Akamai’s intelligent edge platform surrounds everything, from the enterprise to the cloud, so customers and their businesses can be fast, smart, and secure. Top brands globally rely on Akamai to help them realize competitive advantage through agile solutions that extend the power of their multi-cloud architectures. Akamai keeps decisions, apps and experiences closer to users than anyone — and attacks and threats far away. Akamai’s portfolio of edge security, web and mobile performance, enterprise access and video delivery solutions is supported by unmatched customer service, analytics and 24/7/365 monitoring. To learn why the world’s top brands trust Akamai, visit www.akamai.com, blogs.akamai.com, or @Akamai on Twitter. You can find our global contact information at www.akamai.com/locations.

Published 08/18.