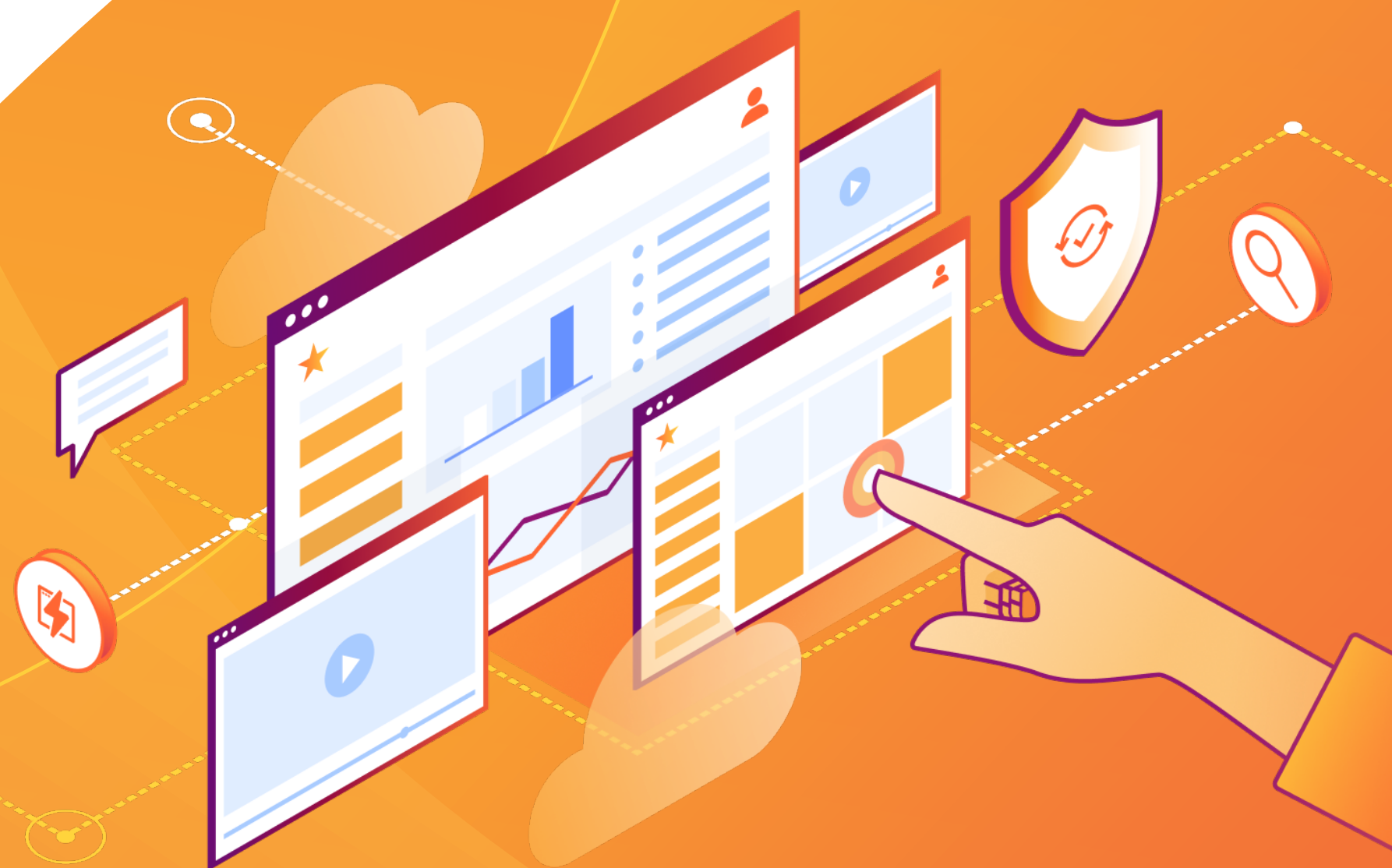# CLOUDFLARE

EBOOK

The CXO's guide to superior application performance and UX

Why application performance can make or break your business — and how a connectivity cloud can help

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User experience depends on application performance — for better or worse

It's no secret that customer retention and business growth depend on a good user experience. Customers want reliable, secure results from web and mobile applications, expect fast load times even during peak traffic periods, and are quick to abandon online purchases and experiences in the face of outages or attacks.

But for today's businesses, guaranteeing a smooth user experience (UX) represents an ever-shifting target — as sprawling cloud environments, sluggish networks, and evolving cyber attacks threaten to degrade application performance.

At worst, poor application performance (and by extension, unreliable UX) can diminish user engagement, damage brand reputation and customer trust, and shrink revenue. In fact, one study found that **88% of users will not return to a website after a negative online experience**.

As businesses scale, these issues only grow more pressing — and more difficult to combat across expanding and dispersed customer bases. Maintaining optimal application performance and a frictionless user experience requires an agile solution, one that can help guarantee uptime during peak periods, ensure application availability at scale, and drive business growth.

"Convenience and consumer peace of mind are the most important services we provide. Although the process looks very simple, there are many underlying complexities."

Marut Singh,
CTO, CARS24

3 challenges of optimizing application performance and user experience

Customers expected high application performance and availability — in fact, [47% of users](#) won't wait longer than two seconds for a website to load before they abandon it. But ensuring optimal application performance is often hampered by complex architectures, inefficient networks and application services, and attack-related outages.

Traditional application services are not designed for flexibility — or growth

Critical data and applications exist across an ever-expanding combination of on-premises infrastructure, public clouds, and SaaS environments, making it difficult for businesses to manage and expand their operations (and competitive advantage) in an efficient manner.

Sluggish application performance can drive down sales by the billions

Slow-loading application experiences — often caused by network inefficiencies and traffic-related outages — not only frustrate customers, but impact conversion rates as well. And the loss of user engagement is only growing: an estimated [$2.6 billion](#) is lost in sales every year due to lagging load times.

Cyber attacks are more sophisticated (and costly to stop) than ever

DDoS attacks, malicious bots, phishing, and other cyber threats can slow down applications or even cause downtime, driving away customers and costing businesses millions of dollars to remediate. But staying ahead of these attacks — without disrupting the user experience or slowing business growth — is difficult as attacks become increasingly frequent, tailored, and adaptive.

Where traditional application solutions fail

① Hardware solutions and legacy edge networks

On-premises hardware appliances and legacy edge networks often come with security and performance trade-offs — driven in part by an "innovation through acquisition" model — that can degrade application performance and availability, as well as user experience. With hardware solutions, businesses face:

- **Lack of scalability:** The limitations of underlying hardware hamper them from scaling to match business growth — or handling recurring periods of peak traffic

- **Lack of flexibility:** These limitations also make it impossible for hardware solutions to work in multicloud environments

- **Poor network performance:** Traditional network deployments introduce latency through bottlenecks, which are often created by backhauling traffic and combining services owned by different vendors

- **Diminished visibility and insights:** Businesses lack visibility and actionable insights into network issues and attack patterns

As a result, users experience:

- **Slow load times:** Users see sluggish site performance during peak traffic periods

- **Geographical constraints:** Users face increased latency in certain parts of the world, as businesses may not be able to scale as quickly as their customer bases

- **Data risk:** Unexpected outages and attacks can compromise the safety and privacy of users' personal data

② Public cloud solutions

As business needs grow and the application landscape becomes more complex, finding a cloud vendor that excels in both performance optimizations and web application security can be challenging.
Businesses often face:

- **Vendor lock-in:** Stringent contracts prevent businesses from adopting best-in-class solutions

- **Lack of flexibility:** Public cloud solutions do not support multicloud or hybrid cloud deployments, forcing businesses to either migrate their apps and services to a single vendor or maintain separate on-premises and multicloud deployments

- **Diminished visibility and insights:** Public cloud solutions cannot share intelligence across platforms — hampering visibility and remediation efforts for network and security incidents

- **Lack of integration:** Public cloud solutions provide their own security suites, but come with significant limitations and often do not offer coverage across multicloud deployments

- **Unexpected costs:** Hidden costs and egress fees can accrue based on platform usage

As a result, users experience:

- **Inconsistent performance:** Inefficient solutions can slow down websites and applications or create inconsistent user experiences

- **Unreliable customer support:** Legacy solutions or poor-performing cloud solutions may not be able to guarantee quick remediation in the face of an outage or attack
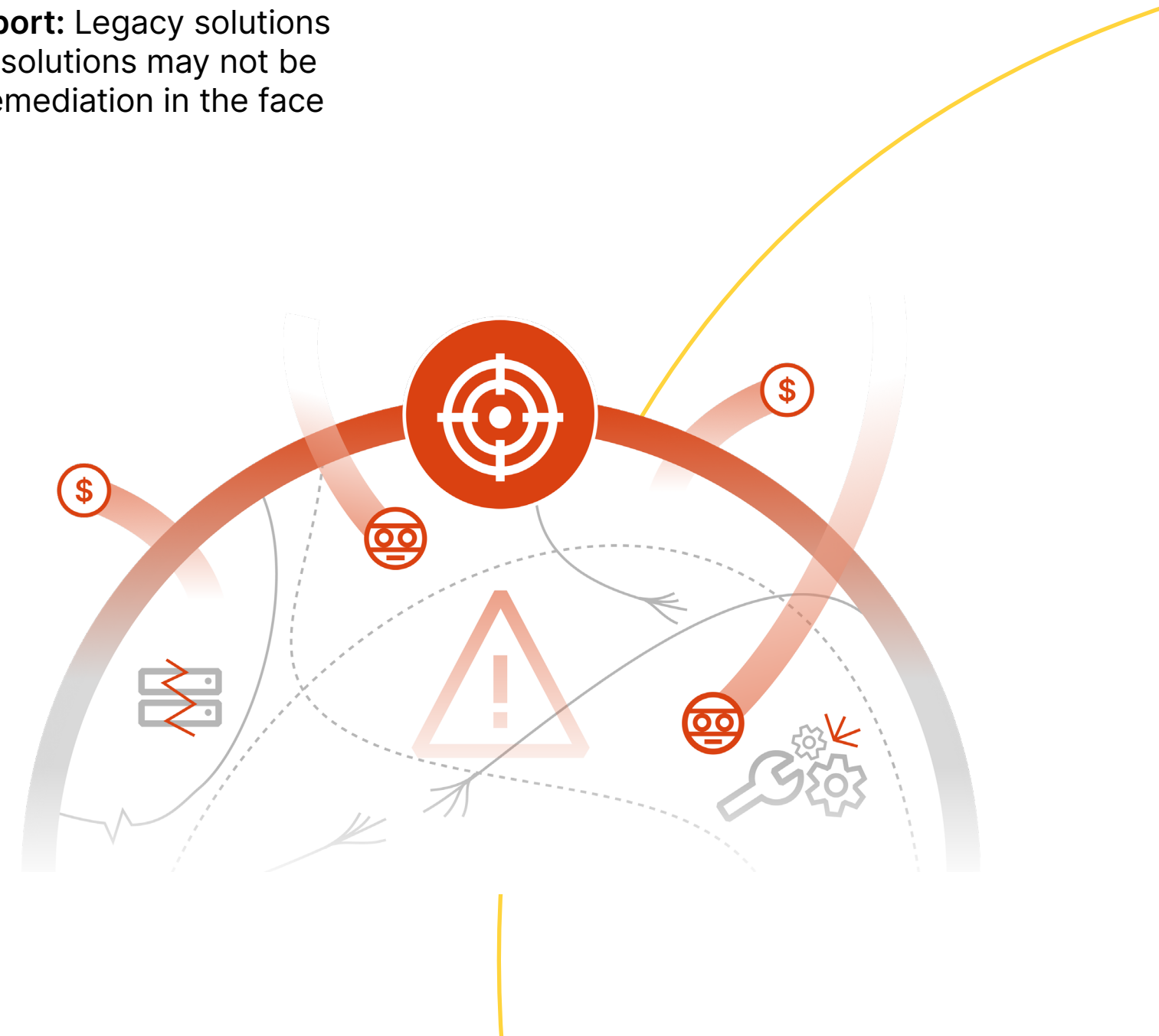
Kathmandu®

"I have a small engineering team. We have a million things to do. We don't have time for an overly complex performance platform."

James Deane,
Web Development Manager, Kathmandu

Introducing the connectivity cloud:
A simple method to improve application performance

Connectivity cloud

Modern businesses need to scale seamlessly while ensuring high application performance and a reliable user experience. And that requires a more flexible approach than either hardware or cloud-based point solutions currently offer. This new approach is called a **connectivity cloud**: a unified platform of cloud-native services designed to help businesses regain control over their IT environments.

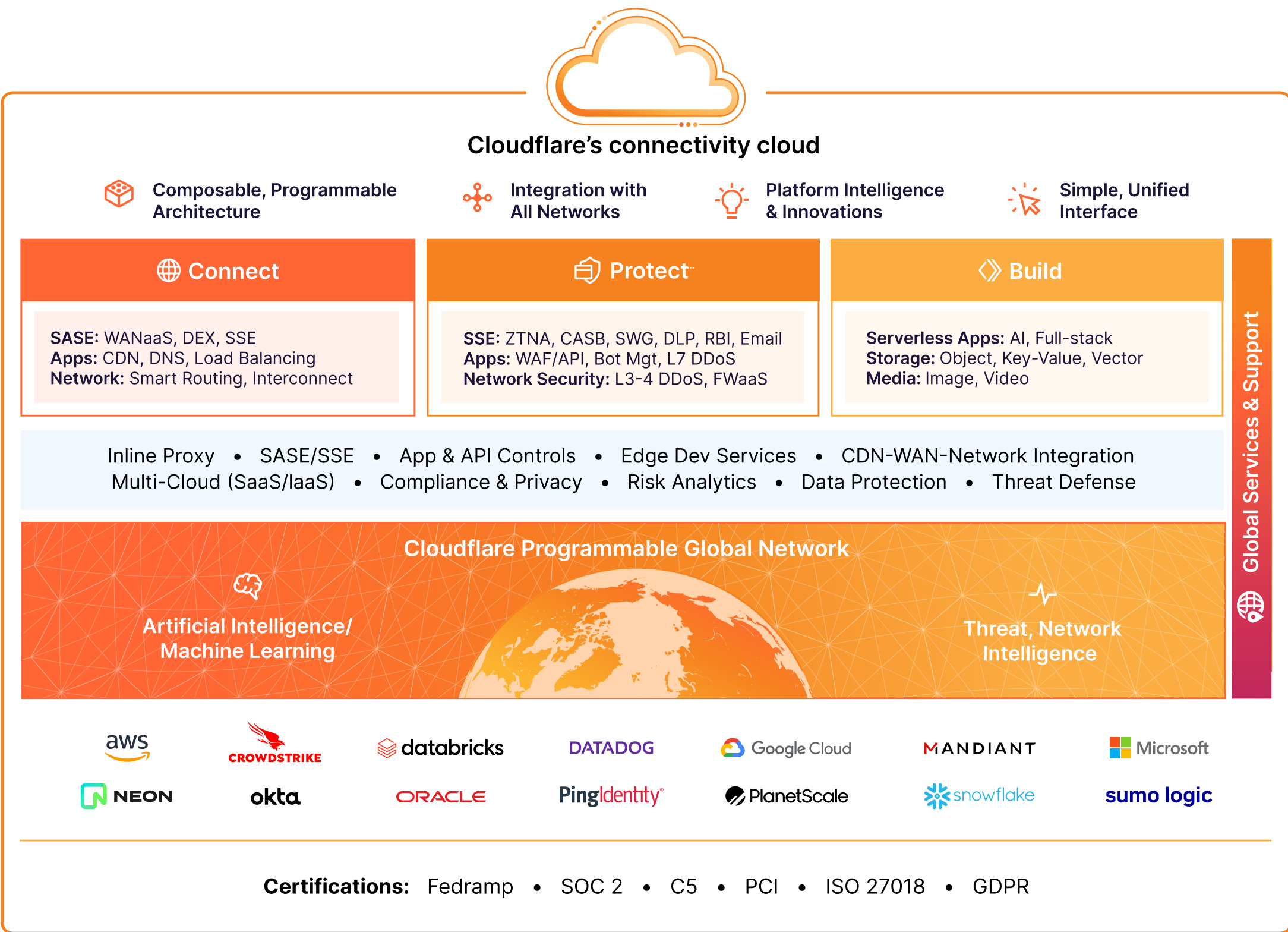| Key capability	Business benefit	User benefit
Infinite network scalability and connectivity	Allows businesses to scale applications alongside expanding user bases	Ensures optimal application performance and smooth UX even during unexpected peaks
Consistent application performance and reliability	Maintains business continuity via high application availability and fault tolerance	Helps avoid downtime for users by failing over in near real-time during outages
Limitless interoperability	• Supports multicloud deployments and allows businesses to easily add services — increasing TTV and ROI compared to legacy and public cloud solutions • Integrates application services with a "security-first" approach • Increased programmability helps reduce key person dependencies and professional services	• Avoids uprooting existing application deployments or infrastructures • Ensures optimal performance, complete security, and compliance
Shared threat intelligence and actionable insights	• Provides intelligent insights into attacks and outages across the entire network • Uses actionable insights to learn from — and stay ahead of — emerging threats • Automatically eliminates malicious bots to ensure only clean traffic consumes bandwidth • Supports cutting-edge, automated performance solutions and technologies (including AI)	• Protects user data and peace of mind during attack-related interruptions • Helps maintain customer trust by quickly remediating threats and minimizing outages
Customizable networking	Satisfies compliance with localization and data sovereignty regulations, without sacrificing productivity or efficiency	Safeguards user data according to local privacy regulations
Reduced total cost of ownership (TCO)	Eliminates high operational costs, upgrade expenses, and egress fees that come with legacy solutions and major public cloud vendors	Avoids unnecessary expenditure overages and maximizes ROI

How Cloudflare helps deliver a superior customer experience

Cloudflare is the world's leading connectivity cloud. With a global network spanning over 330 cities in 120+ countries, we are uniquely architected to help businesses work, develop, and deliver everything everywhere while reducing complexity and cost.

Learn more

about how Cloudflare's connectivity cloud supports best-in-class application performance and user experiences.

Cloudflare's connectivity cloud

| 📦 Composable, Programmable Architecture | ⚛ Integration with All Networks | 💡 Platform Intelligence & Innovations | ⟋ Simple, Unified Interface |

🌐 Connect	🗊 Protect	⟨⟩ Build
SASE: WANaaS, DEX, SSE **Apps:** CDN, DNS, Load Balancing **Network:** Smart Routing, Interconnect	**SSE:** ZTNA, CASB, SWG, DLP, RBI, Email **Apps:** WAF/API, Bot Mgt, L7 DDoS **Network Security:** L3-4 DDoS, FWaaS	**Serverless Apps:** AI, Full-stack **Storage:** Object, Key-Value, Vector **Media:** Image, Video

Inline Proxy • SASE/SSE • App & API Controls • Edge Dev Services • CDN-WAN-Network Integration
Multi-Cloud (SaaS/IaaS) • Compliance & Privacy • Risk Analytics • Data Protection • Threat Defense

Cloudflare Programmable Global Network

Artificial Intelligence/ Machine Learning

Threat, Network Intelligence

Global Services & Support

aws · CROWDSTRIKE · databricks · DATADOG · Google Cloud · MANDIANT · Microsoft

NEON · okta · ORACLE · PingIdentity · PlanetScale · snowflake · sumo logic

Certifications: Fedramp • SOC 2 • C5 • PCI • ISO 27018 • GDPR

![indeed logo]

"Every day, Indeed connects millions of people to new opportunities. Operating this scale means control and simplicity are key, especially in how we run our IT and security teams. With Cloudflare, we're able to connect, secure, and optimize the digital experience of our 350 million monthly unique visitors in a connected, cloud-native manner."

Anthony Moisant,
CIO/CISO, Indeed