



EBOOK

# The connectivity cloud

A way to take back IT and security control



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# Organizations are losing IT and security control

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Once upon a time, IT and security teams focused mostly on managing their organization's on-prem environment. But as business requirements changed, customer bases became global, and remote work took root, these technology teams were handed responsibility across more domains: **cloud deployments, SaaS applications, and the public Internet.**

Individually, each domain has more than its fair share of complex management and security considerations. But the loss of control is the result of several factors in combination:

- Each of these domains has a different core purpose, operating model, and security model. They are in effect super-silos which contain their own silos within them.
- Environments outside the firewall are inherently less visible to IT and security teams, as the infrastructure, access control points, and users are controlled by outside vendors, or in the case of the public Internet, not really controlled at all.
- “Any to any, always and everywhere” connectivity expectations produce combinations of hardware, software, services, protocols, standards, conventions, and regulatory requirements that are in practice infinite.

It's no surprise that technology teams have less and less control as they try to combine these disparate domains into something like a single environment to meet business needs.

This greatly complicates crucial tasks like managing employee access, setting global security policies, and monitoring and improving network performance. And it's hard to find an organization where such loss of control hasn't taken root.

**According to a recent Cloudflare survey conducted by Forrester Research, 99% of businesses say they require secure, performant, “any-to-any” connectivity more than ever before.**



New research shows the broader effects of this “control gap” on the business as a whole, through lost speed and productivity, increased risk, and greater costs.

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### Speed and productivity

**Loss of control slows organizations down.** Technology teams spend more time testing and securing complex systems. Tech debt and convoluted infrastructure requirements pile up. Delivery dates for new applications are delayed — giving nimbler startups a chance to win the innovation game.



### Risk

**Loss of control amplifies risk** in the areas of cybersecurity, legal and policy compliance, and operational stability. Such risk may accumulate slowly, but the consequences often strike suddenly and publicly: devastating ransomware, stolen data offered for sale publicly, or paralyzing logistical slowdowns.



### Cost

**Loss of control imposes a heavy opportunity cost:** the inability of technology teams to focus on efforts that add value to the business. Cost is also driven by the need to hire more people — and buy more tools — to bring some measure of order to complex technology environments.

**“The vast majority of our computer fleet runs MacOS, and many of our critical developers run Linux. [Our access management provider’s] limited Mac compatibility often delayed our releases, and their Linux functionality was non-existent.”**

[Head of Security, Cloud consultancy](#)

**“We were paying a lot of money, but we had no visibility into our global digital footprint. We didn’t have any information on how or when we were being attacked and we had no idea who was targeting us.”**

[Global Director of Governance, Risk, Compliance & Security, Auto parts supplier](#)

**“We’re growing very quickly, and international privacy regulations are continuously changing. We need agility and the ability to scale quickly and efficiently. The solutions we were using weren’t robust enough to handle our growth.”**

[Chief Technical Officer, Privacy tech company](#)

# The connectivity cloud:

A new way to connect, protect, and accelerate your business

Organizations won't fix the control gap in their IT environment with isolated optimizations and more point products. A new approach is needed.

They need a different type of cloud—one that delivers secure, performant, any-to-any connectivity. It has to integrate with all networks, give full programmability to support any use case, and deliver unified visibility and control across every domain IT is responsible for.

This new cloud model is called a **connectivity cloud**. Through programmable architecture, integration with all networks, built-in intelligence and innovations, and a unified interface, it gives organizations:



Security, networking, and performance resources that scale effortlessly to meet any business need



Seamless connectivity across every domain: on-premise networks, cloud deployments, SaaS apps, and public Internet



More resources and people-hours to invest in strategic IT and security innovation



More predictability when launching new products, services, and tech upgrades



Better experiences for customers, fueling competitive advantage



Better experiences for employees, resulting in better productivity, efficiency, and business agility





# The anatomy of a connectivity cloud

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As mentioned, a connectivity cloud is a new type of cloud that connects **everything** and **everyone** in the IT environment, **everywhere** they are.

But what it **isn't** is just as important. Many cloud-based platforms offer security, networking, or developer services from the cloud. But without spanning all of those use cases, or easily connecting to every domain in the IT environment, such platforms merely represent another silo.

The result is yet another tool to integrate, worse visibility, and more inconsistency in management — all common examples of loss of control.

By contrast, a connectivity cloud has the following **architectural qualities**, and serves the following users and domains:

## Architectural qualities:

- Native, ubiquitous integration with the Internet
- Cross-functional intelligence and innovations built-in
- Composable and programmable architecture
- Unified and simplified interface

## Domains and users connected and protected:

- Hybrid and on-premise employees
- Developers
- Customers
- Partners and contractors
- Multi-cloud deployments
- Hybrid and on-premise networks



# Deep-dive: Connectivity cloud architecture

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## Composable and programmable architecture:

A connectivity cloud is built from the ground up to be adaptable and compatible. Specifically:

- Every connectivity method and cloud service is interoperable with each other in every network location
- Layer 1 through 7 connectivity is fully API programmable everywhere
- Decoupled from tech stack (at extremities) and location
- Build your own API-enabled serverless functions on the exact same servers as every other service in the connectivity cloud

### As a result, organizations can:

- Not compromise on security, networking, and innovation as they switch between clouds (IaaS, PaaS, SaaS), on-prem networks, or users (customer, employee, partner)
- Orchestrate and automate services with any third-party system
- Customize data locality rules to meet compliance, privacy and sovereignty requirements



## Native, ubiquitous integration with the Internet:

A connectivity cloud's architecture is deeply integrated with the Internet. Specifically, it provides:

- Infrastructure sitting in many global cities and IXPs — not just a few data centers per region
- Complete control of a request from source to destination — not just a via software-defined overlay or underlay
- Network connectivity that scales infinitely on demand across every location, with no configuration during setup or operation
- Services that are always available from every server — and agnostic to cloud providers and geo-locations across every origin
- Connectivity from any source automatically routed to every data center to ensure 100% service availability

### As a result, organizations benefit from:

- Low latency for every Internet-connected user, application, and network infrastructure
- No hardware or virtual appliances to activate, manage, or scale
- A control plane for all services running on all servers, providing 100% operational consistency



## Built-in intelligence and innovations

### A connectivity cloud offers:

- No inter or intra data center service chaining
- Security, performance, privacy, and compliance functions are all built-in, rather than bolted-on
- Cross-functional threat intelligence that sees most existing attacks and what you're trying to protect
- Cross-functional network intelligence that sees all Internet paths and accelerates any request along the fastest route

### As a result, organizations get:

- Better threat intelligence, particularly via continually enhanced machine learning models
- Better connectivity and end-user experiences
- No trade offs — e.g. having to deactivate security services to ensure application availability or compliance
- Faster development, since security, performance, and compliance are built into new serverless applications



## Unified and simplified interface

### A connectivity cloud offers:

- One unified management interface across an integrated product platform
- Consolidated logging, with integrations with any cloud log storage and analytics platform (e.g. SIEM)

### As a result, organizations benefit from:

- Simplified policy updates, user account creation, and other day-to-day security tasks
- Simplified setup and management of any business resource (on-prem or in the cloud), along with other day-to-day networking tasks
- Faster employee training
- Simpler troubleshooting and customer support
- More efficient vendor consolidation



# Connectivity cloud use cases

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To understand how a connectivity cloud can help an organization efficiently connect everything and everyone in its IT environment, consider the hypothetical fashion retail company Acme Inc. Acme's operations span seven countries, including 40 brick-and-mortar locations and a thriving ecommerce presence. The company has seven corporate offices and employs 3000 people, about 30% of whom are partially or fully remote.



## Use case: Streamline corporate network security

Acme's multinational operations and hybrid workforce are fertile breeding grounds for loss of control. Establishing secure connectivity across a variety of locations, devices, applications, and infrastructure can quickly become an endless time-sink.

With a connectivity cloud, Acme can both secure and connect all of these network components on a single platform, without complex integrations and workaround — perhaps in keeping with a Secure Access Service Edge (SASE) approach.



## Use case: Create consistent security posture across online portfolio

Acme manages many websites for its various brands and regions — not to mention a host of APIs connecting those sites to critical third-party services. Without a unified security infrastructure, Acme will likely lack an accurate, consistent view of threats across its entire online portfolio — a classic example of loss of control.

With a connectivity cloud, Acme can track every variety of threat from a single pane of glass — and efficiently apply new protections and policy changes across the entire portfolio.



## Use case: Accelerate development and testing

Acme continually launches new features and experiences across its online portfolio. But engineers and web managers risk of being bogged down with application sizing, security and performance integration, and other time-consuming deployment tasks — ultimately pitting control and speed against one another

With a connectivity cloud, all of the above considerations are either integrated or fully automated, making it simpler for Acme teams to focus on building and testing.




## Use case: All of the above

Unlike many services, a connectivity cloud can meet all of the above use cases with the same infrastructure and UI. In such a situation, the efficiency would compound. More efficient network security would help IT and web teams manage the online presence more easily. Integrated security, performance, and development would make the whole organization's innovation engine more nimble. The connectivity cloud becomes a platform for all of Acme's digital transformation goals.



# How better control over the IT environment benefits the business

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 <b>Connectivity cloud capability</b>	 <b>Technology team benefits</b>	 <b>Broader business benefits</b>
<b>Better connectivity across any user, app, and network</b>	<ul style="list-style-type: none"><li>• Users can easily use preferred tools</li><li>• Fewer IT support tickets</li></ul>	<ul style="list-style-type: none"><li>• Easier adoption of innovative technology</li><li>• Reduced risk from shadow IT</li></ul>
<b>Simpler day-to-day security and networking tasks</b>	<ul style="list-style-type: none"><li>• Easier to manage security policy, user profiles, routing rules, etc</li></ul>	<ul style="list-style-type: none"><li>• More time for innovative technology work</li><li>• More agile response to emerging threats</li></ul>
<b>Better threat intelligence</b>	<ul style="list-style-type: none"><li>• Faster, more effective threat response</li></ul>	<ul style="list-style-type: none"><li>• Reduced organizational risk</li></ul>
<b>Easily switch between clouds or on-prem infrastructure</b>	<ul style="list-style-type: none"><li>• Apply any security service to any infrastructure</li><li>• Faster integrations</li></ul>	<ul style="list-style-type: none"><li>• More efficient digital transformation</li><li>• Easier control of critical data</li></ul>
<b>Manage and automate services with any third-party system</b>	<ul style="list-style-type: none"><li>• Faster integrations</li><li>• Easier to adopt best-of-breed cloud services</li></ul>	<ul style="list-style-type: none"><li>• More efficient digital transformation</li><li>• Better employee productivity</li></ul>
<b>No virtual appliances to activate, manage, or scale</b>	<ul style="list-style-type: none"><li>• More efficient software development</li></ul>	<ul style="list-style-type: none"><li>• Faster digital product launches</li><li>• Better digital customer experiences</li></ul>
<b>A control plane for all services running on all servers</b>	<ul style="list-style-type: none"><li>• Easier IT and security management</li><li>• Reduced security alert fatigue</li></ul>	<ul style="list-style-type: none"><li>• More time for innovative technology work</li><li>• Reduced organizational risk</li></ul>
<b>No tradeoffs between security, performance, and compliance</b>	<ul style="list-style-type: none"><li>• Easily meet compliance requirements</li><li>• No need to switch off security services to prevent compliance risk</li></ul>	<ul style="list-style-type: none"><li>• Easier regional and vertical expansions</li><li>• Reduced organizational risk</li></ul>

# Cloudflare delivers on the connectivity cloud promise

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Cloudflare's global network and platform represent the world's first connectivity cloud. It helps enterprise technology leaders reduce the time, risk, and cost of managing their people, devices, systems, apps, clouds, and networks. It was designed from the ground up to deliver a unified experience for organizations' customers, workforce, and developers amidst a vastly complex, distributed compute, storage and application environment.

## It does this through:



**Composable and programmable architecture:** All Cloudflare services can run on every server in our network, and are fully abstracted from any specific hardware. In addition, it's easy to customize routing rules, access policies, and code with our serverless development service, Workers — which runs everywhere our other services do.



**Internet-native, global, ubiquitous reach:** The Cloudflare network spans over 300 global cities and interconnects with over 12,500 ISPs, cloud services, and enterprises — allowing it to sit within 50ms of 95% of the world's Internet-connected population.



**Cross-functional intelligence and innovations:** Cloudflare serves approximately 20% of all web traffic, and stops over 140 billion threats per day. This network and threat intelligence powers our entire portfolio of security, performance, privacy, compliance, and development services.



**A unified and simplified interface:** Which lets you manage Zero Trust security, network connectivity, application security and performance, development, compliance, privacy, and more — all through a single pane of glass.



# Global enterprises use Cloudflare to regain control of their IT and security

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“Cloudflare’s security insights technology shows me exactly what’s happening across the entire digital footprint...it’s exceptionally powerful to walk into the boardroom and say, ‘these are the attacks we’re experiencing, here’s where they are coming from, and this is how we’re blocking them.’”



“We know if a device on the network has malware. We can instantly cut a connection, secure our important systems, and remediate an affected machine. The Cloudflare integration with Crowdstrike strengthens our overall security posture...We have [also] seen benefits like happier developers and simplified maintenance.”



“Because Cloudflare Workers is a highly distributed architecture, I don’t have to spend time with my team figuring out how to build features to be highly available. Our time to market has dramatically sped up, and we know that anything we code through Workers will meet our service-level agreements (SLA) for high availability”

**onetrust**

“Cloudflare is streamlining our migration from on-prem to the cloud. As we tap into various public cloud services, Cloudflare serves as our independent, unified point of control — giving us the strategic flexibility to choose the right cloud solution for the job, and the ability to easily make changes down the line.”

**Handelsblatt**  
III MEDIA GROUP





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