

## REPORT REPRINT

# Akamai unveils its cloud networking strategy

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Akamai has unveiled its cloud networking strategy to provide a reliable Internet for business applications and VPN services, featuring optimized Internet transport, universal SaaS and cloud acceleration, and secure Web gateway capabilities in a single offering. In conjunction, Akamai announced partnerships with Orange and T-Systems as two initial network service providers that will launch services based on Akamai cloud networking. Akamai's strategy addresses the challenges that motivate the SDWAN market broadly – being able to take advantage of disruptively inexpensive consumer broadband Internet connectivity, and increasing the agility of WAN deployment and management – while preserving the security and performance of an MPLS-based network.

Akamai's approach entails the use of the distributed server 'network' that it first deployed to implement the initial content-delivery network (CDN). Akamai's distributed server infrastructure gives it a differentiated understanding of how the various regions of the Internet are performing, and enables Akamai to route traffic around the problematic parts. It uses the servers at the edge of its network to perform communication-processing functions, including an innovative approach to distributed security.

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### THE 451 TAKE

Akamai's Cloud Networking offering is another important step beyond its initial CDN offerings, and makes excellent use of Akamai's unique set of distributed servers to optimize traffic across the Internet. Compared with other SDWAN offerings, Akamai is able to provide value in the Internet 'middle mile' by using good connectivity, and can thereby provide services with a lower cost than most competitive offerings. Akamai's existing centralized control system gives it a powerful and programmable control plane, and its large set of distributed servers gives it a unique platform for the rapid implementation and deployment of additional functionality. Akamai's biggest remaining challenge is moving its business model away from the large high-touch legacy projects and toward one that is more automated, customer driven and lower cost.

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### CONTEXT

Akamai's strength as an over-the-top network services provider is a consequence of its initial success in creating the CDN business. The initial Akamai CDN service was built to deal with the Internet-performance issues of the dot com period that were caused by 'flash crowds' going to a large Web-publishing site, creating traffic overloads (and packet loss and latency increase) at the peering connections of an access network. Akamai's solution was to install content-caching systems (small servers) in those edge access networks, and to build a centralized control system that directed user requests via DNS to the specific caching system that could most cost-effectively deliver improved access to the destination site. Although the flash crowds of 15 years ago are long gone, Akamai has continued to build out and refresh this set of distributed servers as it focuses on new services. Today Akamai operates roughly 200,000 servers in 3,110 locations distributed throughout the Internet.

Akamai's core strengths are: a large and profitable business with an established customer base, its distributed set of centrally controlled servers with the ability to rapidly evolve the software running on those servers and control their collective behavior, and state-of-the-art knowledge of the dynamic performance of the Internet and of network performance optimization technologies.

## PRODUCTS

Akamai is developing service offerings that incorporate optimized transport using the Internet, performance optimization for SaaS and cloud applications, and security added by new functionality in the Akamai edge servers in the form of a Secure Web Gateway. The new service (offered first in conjunction with Orange and T-Systems) complements the existing branch- and SaaS-acceleration solutions that Akamai has previously introduced in partnership with Cisco and Riverbed. The new offering will be used initially by Orange to enhance and extend its current Private WAN MPLS and Business VPN services by integrating Internet connectivity as needed to service specific customer requirements, such as adding a new branch more quickly or providing a high-capacity link.

Transport across the Internet is optimized by multiple dynamic paths and the use of established tunnels between sets of Akamai sites across high-quality portions of the Internet, enhanced by the use of route-optimization and existing WAN-optimization technologies, including protocol transformation (avoiding the performance limitation of TCP/IP connections as latency increases), object and byte caching, and the use of forward error correction where needed to reduce retransmission to an acceptably low percentage of traffic.

The offering will optimize access to cloud-based applications and service offerings by optimizing transport across the Internet to an Akamai server that is near the destination. Security and performance across these links are optimized by pushing functions to the node close to the origin server of the content so that malicious content can be blocked before it enters the transport part of the network.

When first introduced, the service will be accessed by creating a connection to one of Akamai's edge servers, serving as one component of a broader enterprise WAN. In later releases, a customer-premises-deployable node (physical or virtual appliance) will be added, and this node will be managed as part of the Akamai network of servers. In this second phase, the premises server can be used in conjunction with other SDWAN offerings, and to route traffic selectively over the Akamai optimized Internet or other available WAN links as makes sense.

## STRATEGY

Akamai's strategy is to incrementally build on very significant infrastructure (a large number of centrally controlled servers distributed throughout the Internet), its partnerships with equipment vendors (Cisco and Riverbed) that enable existing customer equipment (a Cisco edge router or Riverbed Steelhead appliance, for example), its partnerships with network providers (initially Orange and T-Systems) that enable these services to be marketed into those large installed base, and its existing relationship with enterprise customers.

There are two major differentiators in Akamai's strategy. First is Akamai's use of its distributed server network, which was first deployed to implement its content-delivery network and gives Akamai a differentiated understanding of how the various regions of the Internet are performing; this enables Akamai to route traffic around problematic parts of the Internet and to offer an SLA guaranteeing against latency, loss and jitter. Second, Akamai is embedding caching, WAN optimization and QoS coupled with secure Web gateway capabilities into Akamai's distributed network. This approach enables universal acceleration for SaaS and cloud-based applications, as well as for general Internet access.

## COMPETITION

The SD WAN market is nascent. Akamai is a strong entrant because of its existing resources and customer and partner relationships, as well as its differentiated ability to optimize traffic through the Internet. It has the inherent advantage of a multibillion-dollar, profitable company against new, much smaller startups. Compared with the existing network service providers that will leverage and acquire some of the SDWAN offerings, Akamai has the flexibility of being an over-the-top offering that does not own (and need to monetize) extensive network-transport assets, in addition to the potential for partnering with those providers. Akamai's biggest direct competition comes from newer-generation OTT providers (such as CloudFlare) that have created more customer-driven and automated systems, and minimized the cost of acquiring and serving smaller customers. Akamai also competes with the large-scale cloud providers that have the ability to build out comparable services for their own assets and provide them as a bundled part of the offering.

## SWOT ANALYSIS

### STRENGTHS

Akamai is a large and profitable company with existing account relationships with many enterprises, and is experienced in delivering mission-critical enterprise services. Its fleet of servers distributed throughout the Internet is an unmatched resource, as is its comprehensive and dynamic understanding of Internet performance.

### WEAKNESSES

Historically, Akamai's business model has been characterized by large high-touch customer engagements, which has left it vulnerable to newcomers that emphasize low-cost and customer-driven automation.

### OPPORTUNITIES

Akamai's opportunities will grow as more enterprise IT usage moves to mobile devices and cloud-based offerings. Its over-the-top, extensive and mature server network gives it a unique and valuable platform with which to go after the growing opportunities.

### THREATS

As its total addressable market grows, Akamai will face increasing competition from the large network operators. In the past, Akamai has successfully competed with their CDN offerings, but these new offerings are more strategically threatening.