Akamai optimizes the content delivery in France with France-IX

Convergence hub

September 2012

Akamai, one of the founding members of France-IX association, is an avid user of the internet exchange points.

By connecting to these infrastructures, Akamai improves its distributed network and reduces the latency to the end users.

Akamai's business

With a Cloud platform built on on more than 100,000 servers in 80 countries in the world, Akamai positions itself as the leader in security, acceleration, and delivery of content on the internet.

www.akamai.com

NEED

The core business of **Akamai** consists in bringing the web content as close as possible to end users who draw this content while surfing the Web. **Akamai's** infrastructure is thus built on a distributed caching system.

This service, **Anycast-like,** is based on a proprietary algorithm that helps **Akamai** to select the servers that will best respond to requests on the basis of their performance, connectivity and proximity to the end user.

Through this network, **Akamai** optimizes time to access to pages (aka the latency) and the content requested by the user.

As traffic levels are still raising exponentially, it is important to find a cost effective and scalable way to deliver this traffic.

SOLUTION

Peering services offered by the internet exchange points such as **France-IX** enable content delivery networks such as Akamai to reach a large number of internet operators via a single interconnection instead of multiplying external paths to these partners.

Thanks to the routes servers, **Akamai** accesses the roads broadcasted by the other members of point in open policy, that is to say more than **70%** of the global traffic on France-IX, the equivalent of thousands of **IPv4** and **IPv6** routes.

This solution represents a significant cost gain since transit demand is then diminished. Also, the latency is improved because there is no intermediary between **Akamai** and other members except the **France-IX** infrastructure.

Organisation	ASN	Pop	Type Port	Routes servers
1&1	8560	Telecity-Courbevoie	1GE-LX	oui
AFNIC	2484	Interxion-1	1GE-LX	oui
AFNIC	2486	Telehouse-2	1GE-SX	oui
AIC Network	47332	via LYONIX	N/A	oui
Accelance	16073	via LYONIX	N/A	oui
Acropolis Telecom	29513	Telehouse-2	1000M	oui
Adeli	43142	via LYONIX	N/A	oui
Adenis	51985	Telehouse-2	100M	oui
Akamai	20940	Interxion-5	10GE-LR (x4)	oui
Alionis	34997	Telecity-Courbevoie	1GE-LX	oui
Altitude Infrastructure Exploitation	49594	Telehouse-2	1GE-LX	oui

70% of the members use the Routes Servers service

Akamai's connection to the routes servers benefits all-members connected to the **France-IX,** as with just one BGP session to the servers, every new network can get Akamai and all the other participating AS's.
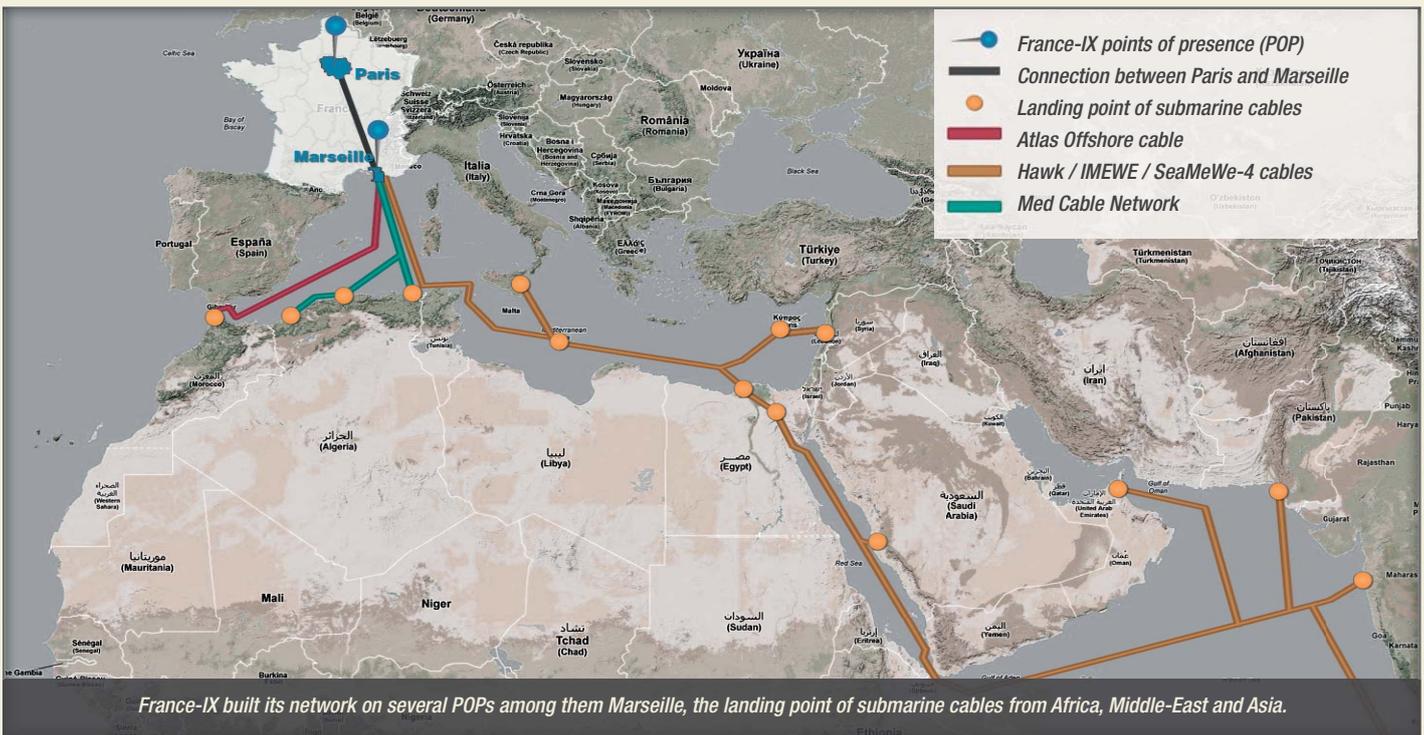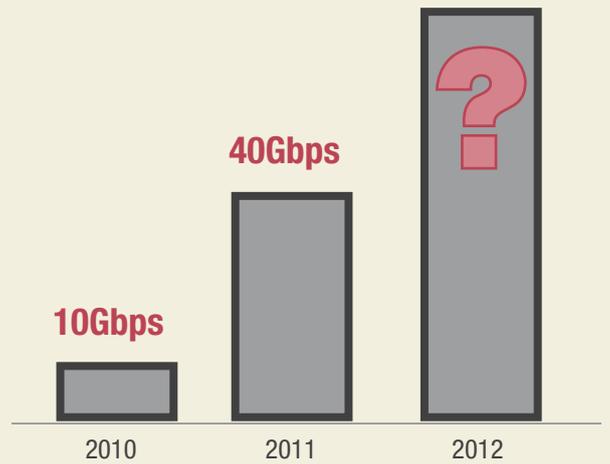
They optimize their resources and reduce their consumption of **IP transit**.

The list above is uncomplete. To access the extensive list of the connected entities, please visit our website www.franceix.net

EVOLUTION

In 2010, **Akamai** established its connection to **France-IX** via one line-rate 10Gbps port. Enjoying a rapid growth of the exchange with the other members, Akamai upgraded its traffic to 4 x 10Gbps line-rate ports.

Akamai expects a steady growth based on the trends of the past several years and therefore considers adding new ports for its connectivity to **France-IX**.

Moreover **France-IX** owns a point of presence (POP) in Marseille, the landing point of many submarine cables coming from **Asia**, **Africa** and the **Middle East**. This POP particularly interests **Akamai** who potentially plans to install a cache there in the coming months.

40Gbps

10Gbps

2010 2011 2012

France-IX points of presence (POP)
Connection between Paris and Marseille
Landing point of submarine cables
Atlas Offshore cable
Hawk / IMEWE / SeaMeWe-4 cables
Med Cable Network

France-IX built its network on several POPs among them Marseille, the landing point of submarine cables from Africa, Middle-East and Asia.
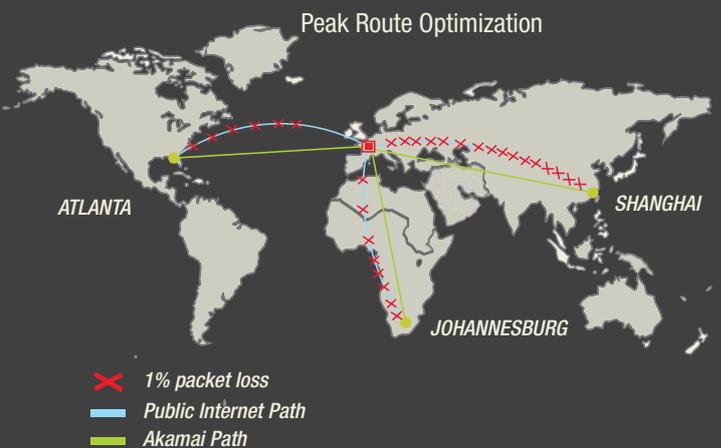
The story in the History

The origin of **Akamai** is closely related to the origin of the http Protocol. The two came up from the **MIT - Massachusetts Institute of Technology** - in the United States in the 1990s.

In 1998, the professor **Tom Leighton** and the student of the university **Daniel Lewin** anticipated the problem of bottlenecks likely to occur if everyone would visit the same page at the same time.

The idea to distribute content in different servers and caches took form and **Akamai** was born.

Peak Route Optimization

ATLANTA
SHANGHAI
JOHANNESBURG

1% packet loss
Public Internet Path
Akamai Path

«With **HD videos** and more and more devices we will also see more and more traffic coming and in this case, internet exchanges are one answer to the question: *'How can we deliver that traffic in a cost-effective way in the future?'*

Christian Kaufmann
Director Network Architecture, Akamai

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