CDN & ISP Collaboration Trends

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TWNOG 26th
What is CloudFlare?

CloudFlare makes websites faster and safer using our globally distributed network to deliver essential services to any website

- Performance
- Content
- Optimisation
- Security
- 3rd party services
- Analytics
How does Cloudflare work?

Cloudflare works at the network level

- Once a website is part of the Cloudflare platform, its web traffic is routed through our global network of 82+ data centres.

- At each edge node, Cloudflare manages DNS, caching, bot filtering, web content optimisation and third party app installations.
How does CloudFlare work?

How does it work?
- DNS Query - to anycast DNS address
- DNS result returned with Anycast IP
- Client makes connection to returned IP
- CloudFlare replies, session established

What happens in the event of an outage?
- Anycast prefixes are withdrawn from problematic PoP
- Traffic re-routes to next closest PoP
  - TCP session resets at this point
CloudFlare works globally

CloudFlare protects globally

- DDoS attack traffic is localised and lets other geographic areas continue to operate
Taipei: CloudFlare’s 77th Data Center is Now Live

11 Apr 2016 by Nitin Rao.

台北：CloudFlare的第七十七個數據中心已經上線喔！

We are excited to announce the launch of our Taipei data center, which is our 28th data
Why do we need a POP in Taiwan?
KEEP CALM AND IN-COUNTRY
Latency Matters!
Why in-country matters?

Ping RTT between Taiwan ISP and CF Asia POP

<table>
<thead>
<tr>
<th></th>
<th>CF NRT POP</th>
<th>CF HKG POP</th>
<th>CF SIN POP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taiwan ISP A</td>
<td>67ms</td>
<td>25.2ms</td>
<td>52.4ms</td>
</tr>
<tr>
<td>Taiwan ISP B</td>
<td>47.1ms</td>
<td>24.6ms</td>
<td>82.4ms</td>
</tr>
<tr>
<td>Taiwan ISP C</td>
<td>73.9ms</td>
<td>25.8ms</td>
<td>111.9ms</td>
</tr>
</tbody>
</table>
Connectivity between Taiwan and Asia

- Limited capacity between HiNet and all Asia providers
- Observed congestion during peak hour between CF Japan and Hong Kong POP
- Some Taiwan traffic was served in US due to poor route policy

Source: https://blog.gslin.org/archives/2015/01/22/5546/%e5%b0%8d%e4%bb%98%e6%9c%80%e8%bf%91-hinet-%e5%88%b0-cloudflare-%e4%b8%ad%e5%ae%9a%e7%9a%ae%e6%a8%80%e6%b3%81/
After April 9th!

source:https://blog.gslin.org/archives/2016/04/12/6493/cloudflare-%e6%ad%a3%e5%bc%8f%e5%85%ac%e9%96%8b-taipei-pop-%e4%ba%86/
How could an ISP collaborate with content provider?
Colo at Neutral Data Center

- Easier to have PNI with other local ISP and Content provider
- You might be able to connect to Internet exchanges easily
- More transit providers are available in neutral data center
- Visit [https://www.peeringdb.com](https://www.peeringdb.com) and take a look!
Connect to Internet Exchanges!

- Connect to local and other Asia Internet exchanges like TPIX, HKIX, Equinix IX
- Content providers usually connect to IXPs and they are willing to peer!
- Peer with Route Server and keep your peeringDB up-to-date!

TPIX Taipei Internet eXchange - Traffic

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Weekly' Graph (30 Minute Average)
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![Graph of network traffic over a week]
Questions?

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