ISPCP members attend historic NETmundial Meeting

The city of Sao Paulo (Brazil), was host to NetMundial, a milestone Internet event held on April 23/24 at the Grand Hyatt Hotel. More than 800 participants from all over the world convened for these two days, to discuss the future of Internet Governance, at the invitation of President Dilma Rousseff of Brazil. Representatives from the government, private, technical/academical and civil society sectors, presented proposals on the way forward for Internet Governance, which resulted in the Sao Paulo statement, see **http://netmundial.br/netmundial-multistakeholder-statement/**

The event was introduced by a panel of distinguished speakers which included President Rousseff and the Brazilian Ministers of the tech sector, Tim Berners Lee and Vinton Cerf.

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What attendees are saying

"I was particularly impressed by the organization of this event, wherein successive panels of experts on the podium, took note of (and coordinated), a great number of comments from the floor, which had four microphones with their respective lines of people wishing to speak. Each sector (government, private, technical/ academic and civil society) had their own line, and were prompted to speak in round robin sequence, two minutes maximum per person. Thus a high ranking government officer or minister, had equal treatment vis-a-vis a university professor, a business person or an NGO. This methodology, in my opinion, reinforced the predominant support for preserving the multistakeholder model for Internet Governance, all sectors on equal footing."

- Tony Harris (CABASE – Argentina)

Internet Governance

– the road ahead and what that means for ISPs

"We welcome NETMundial as a strong endorsement of the multistakeholder approach, which will drive forward the development of Internet governance. The infrastructure operated by the European ISPs is the enabler for business and our services are also key to consumers and their rights to privacy, freedom and expression. We therefore welcome the strong focus of the outcome document on human rights and will stay engaged in the global process of Internet Governance "

- Oliver Sume (Euroispa)

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- Maemura Akinori (NIC-JAPAN)

NETmundial, can be considered a success for the Internet community, in it we have seen a truly multistakeholder community deciding on the future of Internet governance. Participating in this meeting we saw persons from business, civil society, governments and the Internet technical community, all discussing on the same footing.

NETmundial manage to reach an agreement on a set of non-binding principles and a roadmap for the future development of the Internet governance, something that seemed impossible a few years ago.

I hope NETmundial's example and results will be followed in other international forums so that we can have a truly democratic Internet, available to all with adequate security.

- Osvaldo Novoa, (ANTel) Uruguay

Internet Governance issues have never been the focus of so much attention as they are today. As many ISPs and connectivity providers concentrate on their core business, across the globe intense dialogue involving all sectors of the Internet ecosystem continues apace. Whilst Internet related issues were always going to be debated at events such as the IGF (internet Governance Forum) and even at the ITU Plenipotentiary Conference, since the Montevideo statement (http://www.icann.org/en/news/announcements/announcement-07oct13-en.htm on the future of Internet Cooperation was published in October 2013 the level of activity has exploded.

For ISPs the results of these discussions will have major consequences, yet their level of direct engagement remains low. Within the ISPCP many of our members are actively working to ensure the impact on our industry isn't damaging and the benefits that the Internet brings as an open, globally distributed network are maintained.

In order to achieve that it's of prime importance that the Internet continues to be administered by a number of autonomous groups, each bringing to the table their own specific areas of expertise and focus as part of the International multi-stakeholder model. The benefits that have already accrued from this model, exemplified by the rapid growth of the Internet as vehicle that now supports global business, education, and almost every aspect of social well-being and advancement, proves quite clearly that the sum of the whole is far greater than the sum of the parts. In the more traditional centralised, heavily regulated model for industry with governments solely at the helm, that rapid growth and the benefits accrued could not have been achieved.

The Montevideo Statement

(http://www.icann.org/en/news/announcements/announcement-07oct13-en.htm which was signed by the

organisations responsible for coordination of the Internet's technical infrastructure in October 2013, recognised the Internet and the World Wide Web have brought major benefits in terms of social and economic development. Yet it also recognised the need for on-going effort to address Internet Governance issues as the Internet evolves and continues to grow. The need to increase the pace of globalisation of ICANN and IANA was recognised as a part of that and its essential the Internet community, in which ISPs play a big part, stand up to that task.

Across the next couple of years a number of key events take place which will shape the future. One such event that occurred in April was the ITU's World Tele-communications Development Conference (WTDC) held in Dubai, which enabled developing nations within the UN family to focus on Telecommunications related priorities across the next 4 years (https://www.icann.org/en/news/announcements/announcement-11jan14-en.htm). Those discussions invariably included Internet issues and it's of prime importance that nations who may feel disenfranchised or disengaged from the current Internet environment are given every help and assistance as they strive to engage and become meaningful participants. In many developing countries the capabilities provided by ISPs are minimal for a wide variety of reasons. It's essential that our part of the multi-stakeholder model engages and assists in helping those who feel left behind. Unless that happens it is far too easy for the governments of those countries to call for a greater degree of control over the Internet and its critical resources.

In April ISPCP members also engaged in the Global Multi-Stakeholder meeting on Internet Governance in Brazil known as 'NETmundial' (https://www.icann.org/en/news/announcements/announcement-11jan14-en.htm). Chaired by the Brazilian Minister of Communications and organised by the Brazilian Internet steering Committee and ICANN, this meeting focused on Internet Governance Principles and the development of a future road map that will assist in charting the way forward. The 1net mailing

list (http://1net.org) provided a platform where all sectors of the community discussed many of the issues prior to that event. During the meeting significant effort was directed towards finding common ground. The output statement from the conference http://netmundial.br/wp-content/uploads/2014/04/NETmundial-Multistakeholder-Document.pdf shows that a remarkable level of consensus was achieved across a very diverse set of stakeholders which bodes well for the future, with pointers for further discussion beyond NETmundial also clearly indicated. An amazing step forward for a two day meeting covering such a wide set of issues.

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We certainly mustn't overlook the next Internet Governance Forum (IGF) meeting in Istanbul in September (http://www.intgovforum.org/cms/) as this always allows all stakeholders to freely express their views on internet governance. Due to the increasing pace of the debate in a wide variety of forums, this particular meeting is expected to be very intense and to quickly focus on areas which remain particularly challenging such as data privacy, security and accountability of organizations who undertake core activities within the Internet's ecosystem.

The ITU's Plenipotentiary Conference (PP-14)

http://www.itu.int/en/plenipotentiary/2014/Pages/default.aspx) takes place in Korea in October. The ITU's top policy making conference is held every four years and sets the agenda for the ITU through its Resolutions and policies. The desire of the ITU to become more engaged in managing the Internet and its critical infrastructure has been well documented. It clearly has the potential to totally change the landscape for ISPs and Connectivity Providers by changing the existing environment to a heavily regulated space, where governments exercise strong control over both infrastructure and services.

Across this period there will also be discussions within a number of existing forums including but not limited to ICANN meetings, Regional Internet Registry meetings and a number of UN/ITU administered forums.

All of these activities lead us towards the WSIS+10 event in 2015, which is a review process looking at the rate of progress achieved against agreed Action Lines determined when the World Summit on the Information Society (WSIS) took place in 2005. Many of the conclusions and agreements made at that time have been open to interpretation, raising a number of questions that are now likely to result in difficult negotiations moving forward. The proceeding set of meetings including all those mentioned above will help shape that space, for better or worse.

What is clear is that the debates and discussion on Internet governance are likely to result in changes that will impact all of us. As the Internet continues to grow and evolve it is of course important that the current structures and governance arrangement also evolve to meet those needs. That means some of the really tough questions such as the oversight of IANA, the role of the Regional Internet Registries in the IPv6 environment, and indeed the role of governments need to be addressed. For all of the above meetings there are also long and involved preparatory processes, most of which members of the ISPCP Constituency are involved in, both within ICANN and in other organisations.

It's essential for our part of the industry that ISPs are actively engaged, because the results of those discussions will shape the future operational environment. Yet day to day business requirements often have to take precedence, limiting the ability to contribute. One way to help address that is through membership of the ISPCP. Through participation in our conference calls, meetings and through awareness of our statements you can not only keep up to date, but actively contribute to the ongoing discussions with minimum overhead.

Other parties, some of whom don't share our views and perspectives, are already heavily engaged. What is of prime importance is the continuation and evolution of a multi-stakeholder governance structure drawn from the private sector, civil society, governments and academia at the International level, who will work collectively to create shared policies that maintain the Internet's global interoperability for the public good, thereby facilitating a sustainable and competitive market in which ISPs can operate.

The issues at stake are far too important to ignore!

IPv6 to secure business continuity

Every few months somewhere somebody will tell you that the sky is falling and the end of the Internet is close. The reasons brought up vary through a broad spectrum from superior technology to the lack of capacity. To a large extent people in the industry have become immune to these messages, for they are either unrealistic or in cases where the threat was real, the Internet responded in its usual resilient ways, adapting to the changing environment. It is this remarkable flexibility and the constant search for optimization that has made Internet seep into every little corner of our lives and businesses.

The story behind the exhaustion of IPv4 is no different from others. Some twenty odd years ago some people predicted that one day, the Internet would be full. With only four billion addresses for what are now seven billion people it is clear that a true global network based on the technology of the time would be impossible. Engineers in the IETF set out to do what they do best, finding solutions

to problems, and came up with a slightly altered Internet Protocol, which was eventually standardised as IP version 6.

That was 1995 and ever since there have been awareness campaigns to try and persuade people to switch to IPv6, which with its unimaginably large address space would really ensure that everybody would be able to join in the Internet and with every device or machine you can think of. And just as with other cases where people warn about possible capacity issues, the alerts about the Internet running out of addresses were mostly ignored or pushed down the priority list of over-worked network engineers. For the first 15 years of its existence, IPv6 remained something for the techies to play with and, with a few rare exceptions, it didn't see any large scale commercial use.

Back to the reality of today, and the once hypothetical case of the Internet being 'full' is rapidly becoming reality. The Internet Assigned Numbers Authority (IANA), which maintains the global pool of IPv4 addresses, depleted its supply of available addresses in 2011. The Regional Internet Registry for the Asian Pacific, APNIC, as well as the RIPE NCC, which allocates IP addresses in Europe, the Middle East and parts of central Asia, have both depleted their available pools as well. What remains in both regions is a very small number of addresses, which are distributed under special policies which only allow for small allocations. This means that fast growing markets in Asia, Eastern Europe and the Middle East are no longer capable of getting the IPv4 addresses they are looking for to expand their businesses.

The situation in North and Latin America is equally grim, with both LACNIC and ARIN getting very close to depletion of their remaining available address pools. While AFRINIC, the RIR for Africa, still has a pool of addresses left, it is clear that that supply is nowhere enough to connect an entire continent.

The only means to obtain additional IPv4 addresses that will soon remain is to enter the marketplace in search of unused address blocks which can, for a substantial fee, be transferred to your company. A marketplace that will be crowded by other companies which find themselves in a similar situation. And with an ever increasing demand for an ever decreasing supply of resources, one can expect prices to only rise. Building your business based solely on IPv4 will soon become very expensive, if not impossible.

So what about IPv6, which in the past has not been considered a viable alternative. Well, the good news is times are changing and in wake of IPv4 depletion more and more companies are switching to the new protocol. When I say switching, I mean adding IPv6 capabilities to their network. Right now for the majority of services and businesses it is unthinkable to switch of IPv4. And nobody says you should switch it off, all IPv6-enabled hardware and software will still support IPv4 as well and (provided you still have some addresses) you should offer the same service over both protocols.

This approach is known as dual stack and it allows for the whole Internet to make a smooth transition to the new protocol, slowly abandoning IPv4 to the point where it can be relegated to the history books.

The big challenge in this approach is cooperation in the alignment of goals and milestones. Adding IPv6 to your content delivery or hosting service is useless when the customers looking at it don't have IPv6 available. Similarly an access provider is less likely to invest in IPv6 when all of the services and content that its customers access are only available over IPv4 - the response of many providers has been to make substantial investments in additional IPv4 address blocks and address sharing technologies, technologies that, in the long run, will harm innovation and impede the ongoing expansion of the Internet.

Coordination is key, across large communities like those surrounding ICANN and the RIRs, but also on a more regional and local level, via Network Operator Groups and national IPv6 task forces. Such

gatherings can be used to exchange ideas, experiences and technical knowledge, but can also bring together different stakeholders who can work together to facilitate the deployment of IPv6 across a nation or industry sector.

In general terms, what can you do to deploy IPv6? Of course no matter how big or small your company is, it will take time and the sooner you start, the better. A good starting point is to make an inventory of the current situation: do you have any IPv4 addresses left unused? Projecting your current growth, how long will those addresses support your business d emands?

At the same time try to establish an overview of the IPv6 readiness of your current network equipment and services, assessing how much effort it will take to deploy IPv6. Don't forget to take into account your staff, who need to learn about IPv6 as well! The RIRs, as well as a number of other (commercial) organisations, offer training courses targeted at different groups and experience levels - you can use these to bring the necessary knowledge into your organisation.

Consider enabling IPv6 for any new services you introduce - this is often cheaper and easier than trying to retrofit IPv6 to existing installations and it will give you a great opportunity to get some more experience, as well as ensuring long-term continuity for your business. Such a strategy might seem to add additional risks, but several large providers are exactly doing just that, for instance, addingIPv6 to their newly-built 4G mobile networks.

Such green field deployments also mean you are no longer alone. In certain countries, such as Belgium (22 %), Germany (10%) and the United States (7.5%), a significant proportion of Internet users can already access IPv6-based services. And those numbers are growing rapidly. Offering your products and services over IPv6 means that those customers can avoid address sharing and translation techniques that might slow down or in other ways negatively impact their experience.

Keep in mind that, while there are many solutions that allow you to connect multiple customers via a single IPv4 address in access technologies like DSL, cable and GSM,

the options to do this in hosting services are very limited.A major feature of Carrier Grade NAT, as these technologies are often called, is that it blocks incoming connections. While this is often considered a virtue in access products, adding to the security, it is the nemesis of the hosting industry, which relies on that very property. Sharing an IPv4 address while offering DNS, web or mail services is difficult, if not impossible.

For hosting providers especially then, it is important to start deploying IPv6 as soon as possible to avoid really running out of IPv4 addresses. Deployment will also require your customers yo adapt to this new situation, creating new challenges for your organisation's support and central management of your services. In virtual server and colocation environments your clients will need to be aware in advance, as they might need to alter their firewall settings or fine tune their servers. In shared hosting platforms you have to be aware that not all scripts and custom web applications are IPv6 aware or capable of handling the new address layout in, for instance, local logging and access technologies. It is essential that these customers are offered assistance in testing and adapting their applications to support IPv6.

Coordination and sharing of information is essential, not only in between industry players, but with customers as well. IPv6 awareness and adoption is something that has to be taken into account throughout the whole Internet value chain and across all stakeholders. It cannot be done in isolation and cooperation is the key to a successful global deployment of IPv6.

More information can be found on http://www.ipv6act-now.org (operated by the RIPE NCC) or via your Regional Internet Registry (see http://www.nro.net/ipv6).

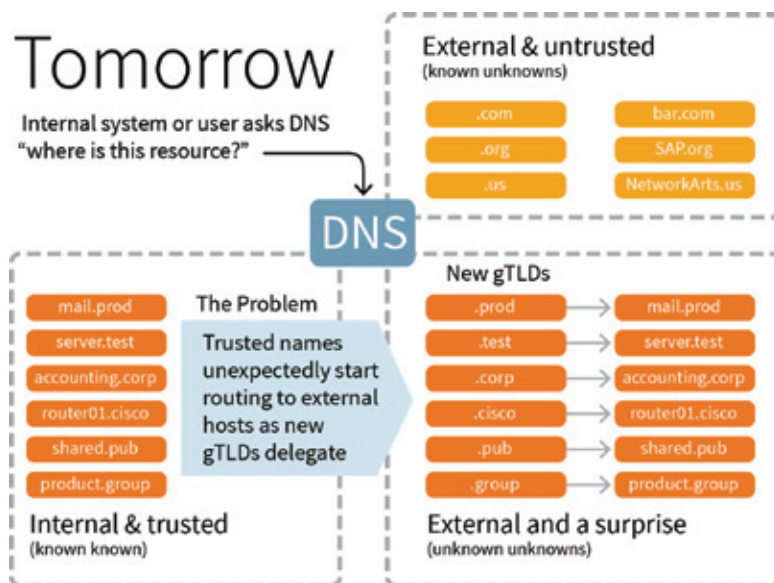## What is the "name collision" issue in a nutshell?

ICANN is in the process of issuing over 1000 new gTLDs, or 'generic top level domains' in the coming months. While this creates many opportunities for innovation in the use

Domain Name Collision

ISSUES ASSOCIATED WITH NEW gTLDs

of the DNS, there is also the possibility that names in a highly trusted local name space will unexpectedly start routing to unknown external hosts as new gTLDs, and second-level names in those gTLDs, delegate.

Why is this important to Internet Service Providers?

Your Customer Service Center may receive calls and complaints related to domain name collision issues. You should try to be in a position to understand the problem, and respond knowledgeably to your customer. Here are a few scenarios to consider:

• A bad actor acquires a 2nd-level name and harvests error traffic that is escaping local networks
• An old application is hard-coded to expect an NX-DOMAIN response from the root and fails when that behavior changes
• Hardware has a newly-delegated name imbedded in firmware that is difficult to modify or update

This problem may manifest itself in a number of different ways, with events spread out over a number of years as second level delegations come. This is also an issue that doesn't have a single resolution that will

address every issue that might arise, nor is there consensus around what types of systems may break. Broad awareness is our best tool to prevent or mitigate this problem.

What You Can Do

• Education and awareness raising are key to preparing for this issue. Getting the word out to your Customer Service Centers is vital. ICANN has issued a Guide to Name Collision Identification and Mitigation for IT Professionals which should be looked over: https://www.icann.org/en/about/staff/security/ssr/name-collision-mitigation-05dec13-en.pdf

• There are a number of stakeholders looking into different methods of pre-delegation testing, and data gathering from DNS resolvers and the global root to attempt to solve problems before they occur. If you are motivated to assist in this process, leadership in the ISPCP can assist you in connecting you to various groups to help the global effort to minimize the overall impact of domain collisions.

• Go to the ISPCP web site to learn more about this issue – www.ISPCP.info/gTLD-Collisions
• Sign up for the ISPCP weekly "Delegations" email bulletin
• www.ISPCP.info/Delegations
• http://www.ISPCP.info/icann-collisions-helpThe official ICANN name collision information page can be found at http://www.icann.org/en/help/name-collision.
• For frequently asked questions about name collisions, visit http://www.icann.org/en/help/name-collision/faqs.

If you have any questions, please contact New gTLD Customer Service at newgtld@icann.org.

The massive introduction of NEW gTLDS

Did you know that over 250 new top level domains have been added to the root zone since last October? Does your customer-support knowledge base have an up to date list? Are your engineers aware of the "name-collision" issue and the implications it may have on your operation? Are your front-line support people aware of all these new TLDs?

The ISPCP publishes a weekly email flash that lists the new top-level domains that have been delegated during the period (along with other helpful links). You can subscribe by following this link. www.ISPCP.info/delegations Why is this important to ISPs and Connectivity Providers ?

• If you resell domain names to your customers, the new gTLDs may well be of interest to these customers.

• Should there be any operational problems involving the new gTLDs (IDN scripts, name collision or universal acceptance issues), your help desks will be on the front line handling these trouble tickets, and need to be aware that these new gTLDs exist.

The full list to date can be seen at http://newgtlds.icann.org/en/program-status/delegated-strings.

250+ gTLDS and Growing!

ISPCP

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