American Registry for Internet Numbers (ARIN)

Submission to the House of Commons Standing Committee on Industry, Science and Technology

Statutory Review of the Copyright Act

December 2018

ARIN and Copyright Enforcement

The American Registry for Internet Numbers (ARIN) is a non-profit corporation responsible for the allocation of Internet Numbers in Canada, the United States and parts of the Caribbean. ARIN is established under United States law and headquartered in Washington, D.C., operating under arrangements with the US Department of Commerce and with Internet Corporation for Assigned Names and Numbers (ICANN). We work in collaboration with four other Regional Internet Registries (RIRs) across the globe.

In short, ARIN is responsible for allocating blocks of Internet Protocol (IP) numbers to large users (e.g. IBM, Microsoft, Google), intermediaries (such as Internet Service Providers (ISPs) like Bell or Rogers) and internet registrars (e.g. TuCows and the Canadian Internet Registration Authority (CIRA)).

IP numbers are the basis of all communication on the internet. Internet servers do not recognize names, such as Google.com, but rather the numbers associated with servers or individual computing devices. Large entities, such as Bell or Telus, or government departments, may have millions of IP numbers allocated to their use.

ARIN controls the allocation of IP numbers, based on need, to the user community. Under the Terms of Service, entities to which IP numbers have been assigned are required to report their allocation of IP numbers to large groups of users for display in ARIN's Whosis database. For example, if Bell allocated a large block of IP numbers to the University of Ottawa, that would be captured and recorded in ARIN's Whois. However, only the organizations given an important number of these resources are captured along with their point of contact. The allocation of an IP address to an individual is not included in Whois, ensuring that privacy is maintained.

ARIN's Whois database plays an important role in copyright and law enforcement. When copyright infringing material or other illicit content is found online, Whois is often the first point of investigation of the source. Law enforcement agencies and private parties with a legal interest can access the Whois database either in accordance with the registrar's policies, or under judicial order. Police and security agencies use the information to identify the origins of suspect communications. Private parties access the Whois database to identify the origins of copyright infringing material, cyber bullying or defamatory postings. The information gathered

in the first step of consulting the Whois database allows private or law enforcement users to then take further measures to have infringing or illicit content removed, request payment of royalties or even have those responsible prosecuted.

What has changed?

The allocation of IP addresses and the maintenance of ARIN's Whois database is set by the policies determined by ARIN's user community. In the jurisdictions where ARIN operates, there is no government involvement, nor any government requirement that the records on who has been allocated IP number be maintained. However, these largely voluntary and contractual arrangements are increasingly facing technological challenges on an unprecedented scale. The 'carrot and stick' approach that has ensured ISPs and others maintained and updated the records in Whois during the first 30 years of the internet will soon be lost.

Previously, ARIN allocated what were known as IPv4 numbers, of which there were a potential 4 billion internet numbers. That limited supply encouraged compliance with maintaining Whois requirements, as allocations of numbers were made on a limited basis on demonstrable need (allowing no 'warehousing' of numbers to create artificial scarcity). If an ISP or other user requested a new batch of numbers IPv4 from ARIN (the carrot) but had not recently updated their Whois records, ARIN could request that they do so in order to receive their new allocation (the stick).

However, those IPv4 numbering resources are now exhausted, and the transition is in full swing to IPv6 numbering resources. Whereas IPv4 numbering resources were exhausted in a generation, it is thought that IPv6 numbers will continue to be available for several hundred years. It is this plenitude of supply and the enormously expanded time frame during which the IPv6 numbering system will persist that poses the challenge to the internet registration system. ISPs and others will be able to request large blocks IPv6 numbers and may not need to return to ARIN for replenishment for several years.

As a result, ARIN will no longer have a mechanism to require compliance with maintaining up to date records of IP dispersals. As no other regulatory or other mechanisms exist that would require this information be updated and preserved, it is likely that many organizations will rarely or never do so.

The requirements to maintain records of IP address distributions date back to the founding of the internet and the policies set by the initial community of internet users. Since then, the integrity of the numbering and registration systems at the heart of the internet have relied on voluntary mechanisms, community consensus and – at least in the Western world – a minimum of government oversight and regulation. It cannot be expected that the rules that governed the pioneer generation of the internet can be replicated as it matures and evolves. The internet community is now staggeringly large, with engineers and scientists having given way to consumers, businesses and government.

The engineered functioning of the internet – the basic protocols for the addressing and transmission of packets retains a large element of self-government: simply put, a message that is not addressed in accordance with those protocols cannot be delivered, so there is no room to deviate from minimum engineering protocols.

However, the registration function is not essential to the technical functioning of the internet. Maintenance of Whois is the means by which physical persons can identified and held to social account for their conduct on the internet. The failure of persons entrusted with the assignment of internet numbers to third parties to maintain accurate records as to the users of those numbers and basic identifying information could wreak havoc in the ability of society integrate the internet into legal, political and business norms.

The real danger posed to the current Whois system are the combined issues of cost and time. The recording and updating of information is time consuming and expensive. If failure to maintain the Whois function reduced costs, then there are clear incentives to neglect the Whois function in favour of more immediately profitable activity. If the government and Members of Parliament believe that the registries of internet numbers should continue, there needs to be mechanisms in place that make the Whois database an essential rather than an optional element of business conduct.

Recommendation

Given the importance of Whois in investigating and stopping the dissemination of copyright infringing material and other forms of illegal activity, ARIN encourages that the House of Commons Standing Committee on Industry, Science and Technology recommend that :

1. The federal government should require that those receiving large blocks of numbers maintain an up-to-date registry of the assignment of internet numbers; and

2. That legislative or regulatory action be taken to ensure that, as the internet expands and evolves, organizations who have the ability to assign internet numbers to third parties be charged with a legal duty to maintain up-to-date Whois information.

Ultimately, by applying a legislative or regulatory requirement to all internet number providers, it ensures that the burden of compliance falls on all stakeholders and that non-compliance cannot lead to a competitive advantage that diminishes the reliability of Whois information and impeded copyright and legal investigations.