

# **Whois & Data Accuracy Across the RIRs**

# Terms

- **ISP** – An Internet Service Provider is **allocated** address space by an RIR for the purpose of providing connectivity and address space to their downstream customer's network
- **End-user** - an organization that is **assigned** addresses by an RIR for use exclusively within its own internal networks
- **Local Internet Registry (LIR)** - term used in some RIR regions to describe an ISP member
- **Legacy space** - numbering resources issued prior to the establishment of the RIR system (Class A, B and C addresses fall into this category)
  - Originally issued without a contract
  - Currently maintained by the RIRs
  - Target for hijackings and criminality

# What is “WHOIS”?

- A general purpose registry directory service
- Used by various types of registries
  - Number resource registries
  - Domain name registries and registrars
  - Routing registries (collect routing policy)
- WHOIS service differs in usage and content depending on the type of registry

# What Information Does an RIR WHOIS Include?

- Registration information about
  - IP addresses and AS numbers issued by an RIR
  - IP addresses and AS numbers issued prior to the establishment of the RIRs (**legacy space**)
  - Original registration date
  - Organizations that hold these resources (ORGs)
  - Points of Contact for resources or organizations (POCs)
  - Customer reassignment information (from ISPs to their customers)
  - Routing information (**AFRINIC, APNIC and RIPE NCC**)
- Referential information
  - To the authoritative RIR
  - To an ISP's RWhois server (**ARIN**)

# What Information is Not in an RIR Whois?

- Domain names
- Certain end user customer reassignments
  - Those registered in Rwhois server
  - Some very small customer reassignments (per RIR policies)
  - Some customer reassignments (per RIR privacy policies)
- Accurate geographic location of the network or end user customer
  - The main purpose of Whois is to record registered users or assignees of an Internet resource

# WHOIS Tips

- Data accuracy
  - Responsibility of the registrant to update their information and their customer information
  - Legacy space rarely updated (no contractual obligation)
  - Not all customer reassignments in WHOIS
- If you need data not shown in WHOIS (e.g. financial transactions), may need court order or legal process

# Whois Accuracy Requirements

# Data Accuracy Requirements per Contract

RIR	Registration/Membership Agreement Requirements
<b>AFRINIC</b>	*Must comply with all policies and Internal business processes *Must provide and maintain accurate contact information in Whois
<b>APNIC</b>	*Must comply with all policies *Must not provide falsified information *Must notify APNIC of any change in material information
<b>ARIN</b>	*Must comply with all policies *Must provide and maintain accurate registration information in Whois for themselves and their customers
<b>LACNIC</b>	*Must comply with all policies
<b>RIPE NCC</b>	*Must comply with all policies *Must provide complete, updated and accurate information necessary for the provision of services *Must assist RIPE NCC with audits

# Repercussions for Contractual Non-Compliance

RIRd	Repercussions for non-compliance
<b>AFRINIC</b>	* Termination of Registration Services Agreement
<b>APNIC</b>	*Termination of Membership Agreement if non-compliance not rectified *Resources are deregistered
<b>ARIN</b>	*Suspension of services *Termination of the Registration Services Agreement 60 days after written notification
<b>LACNIC</b>	*Suspension of services *Termination of Standard Service Agreement following 125 day revocation process
<b>RIPE NCC</b>	*Suspension of services *Termination of Standard Service Agreement *Resources are deregistered

# Data Accuracy Requirements per Policy

RIR	Policy Requirements
<b>AFRINIC</b>	<ul style="list-style-type: none"><li>*All customer assignments must be registered in Whois</li><li>*Registration must be correct at all times</li></ul>
<b>APNIC</b>	<ul style="list-style-type: none"><li>*All customer assignments larger than /30 or /48 must be registered in Whois (option to remain out of public database)</li><li>*All assignments and allocations must be registered in Whois</li></ul>
<b>ARIN</b>	<ul style="list-style-type: none"><li>*All customer assignments larger than /29 or /64 must be registered in Whois or RWhois (exception-private residence)</li><li>*Annual Point of Contact validation required for every registered user in Whois</li></ul>
<b>LACNIC</b>	<ul style="list-style-type: none"><li>*All customer assignments larger than /29 or /48 must be registered in Whois (exception-private residence)</li></ul>
<b>RIPE NCC</b>	<ul style="list-style-type: none"><li>*Correct assignments and allocations must be registered in Whois</li><li>*Original criteria for the assignment must remain valid</li></ul>

# Repercussions for Policy Non-Compliance

RIR	Repercussions for non-compliance
<b>AFRINIC</b>	*No additional resources issued until all customer reassignments are registered
<b>APNIC</b>	*Termination of Membership Agreement if non-compliance not rectified *Resources are deregistered
<b>ARIN</b>	*Suspension of services until POC information is validated *No additional resources issued until all customer reassignments are registered
<b>LACNIC</b>	*Suspension of services *No additional resources issued until all customer reassignments are registered
<b>RIPE NCC</b>	*Suspension of services *Resources are deregistered *Termination of standard services agreement

# Data Accuracy Requirements per Business Practice

RIR	Business Practice Requirements
<b>AFRINIC</b>	<ul style="list-style-type: none"><li>*All members must have a legal presence in region</li><li>*Members are contacted to ensure registration data is current and accurate</li><li>*Service/resource requests accepted only from registered contacts</li></ul>
<b>APNIC</b>	<ul style="list-style-type: none"><li>*All members must be legally registered entities; must provide legal documentation for verification purposes</li><li>*Accounts are renewed every 12 months</li></ul>
<b>ARIN</b>	<ul style="list-style-type: none"><li>*All organizations must be legally registered entities in region to be registered in Whois</li><li>*Organizations requesting services must be vetted every 12 months</li></ul>
<b>LACNIC</b>	<ul style="list-style-type: none"><li>*All organizations must demonstrate their legal presence and use of Internet resources in the region</li><li>* Must provide document proving the legal representation of the agreement signer</li></ul>
<b>RIPE NCC</b>	<ul style="list-style-type: none"><li>*Number resources are registered only to legal or natural persons</li><li>*Audits done to ensure contact registration data is kept up-to-date and correct</li></ul>

# Repercussions for Business Practice Non-compliance

RIR	Repercussions for non-compliance
<b>AFRINIC</b>	*Membership not approved unless organization demonstrates their legal presence in the region *Will provide services/proceed with resource evaluation only if the contacts have been updated
<b>APNIC</b>	*Membership application not approved or processed if they are not a legally registered entity
<b>ARIN</b>	*Will not register or provide services to organizations that cannot demonstrate legal presence in region *Will not continue to provide services if organization does not vet at 12 month review
<b>LACNIC</b>	*Will not approve/assign resources if they cannot demonstrate legal presence or use of resources in the region
<b>RIPE NCC</b>	*Suspension of services *Resources are deregistered *Termination of standard services agreement

**Questions?**