



NEW ORLEANS | 2-5 APRIL 2017

WHOIS Accuracy

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What is Accurate Whois Data?

- Comprehensive
 - **All required data is registered and complete**
- Correct
 - **Data has been verified by staff as being accurate**
- Current
 - **Data has been confirmed to be up to date or recently updated**

Why is Accurate Whois Data Important?

- Internet operability and stability
 - **Helps network operators identify other network operators to resolve technical and/or abuse issues**
- Public safety
 - **Used by law enforcement in investigations and to identify the responsible party for service of process**
- Protection from number resource hijacking
 - **Hijackers often target stale or inaccurate data**
- Key responsibility of the RIRs (per RFC 7020)
 - **“A core requirement of the Internet Numbers Registry System is to maintain a registry of allocations to ensure uniqueness and to provide accurate registration information of those allocations in order to meet a variety of operational requirements”**
- Contractual requirement
 - **Accurate data is required under ARIN’s Registration Service Agreements (RSA/LRSA)**

Could IPv4 Depletion Affect Data Accuracy?

- Under current policy, ISPs are required to register their customer reassignments in Whois (/29 and larger for IPv4, /48 and larger for IPv6)
 - **Since there is no longer IPv4 space in the free pool, it is likely that fewer ISPs will feel motivated to continue to register and/or maintain their customer data**
 - **Once an ISP receives an IPv6 block, they may not have a need to come back to ARIN for more space, and therefore may feel less motivated to register and/or maintain their IPv6 customer reassignments**
- New ideas/approaches may be needed to keep data accuracy from degrading over time

What is ARIN Doing Currently to Obtain/ Maintain Accurate Data?

- *Policy*
 - **NRPM 3.6 Annual POC validation**
 - **NRPM 4.2.3.7.1 and 6.5.5.1 Reassignment Information**
- *Business Practice*
 - **All organizations must be legally registered entities in region to be registered in Whois and receive resources**
 - **Organizations requesting services/resources must be vetted every 12 months**
 - **Service/resource requests accepted only from registered contacts**
- *Contract (RSA)*
 - **Must comply with all policies (1.c)**
 - **Must provide and maintain accurate registration information in Whois for themselves and their customers (3.b)**

Overall POC Stats

- **743,839** total POCs registered in ARIN's database
 - **177,742** are ***validated**
 - **243,192** are **non-validated**
 - **322,905** are ****orphaned**

**Validated POC – has either responded to ARIN's annual POC validation email or updated their POC record within the past 12 months*

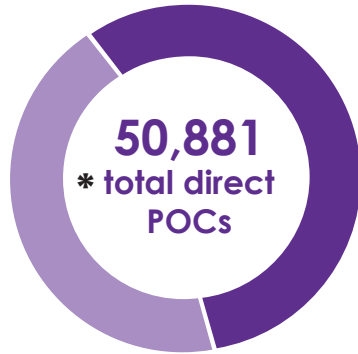
***Orphaned POC – not associated with any number resources*

Orphaned POCs and Orgs

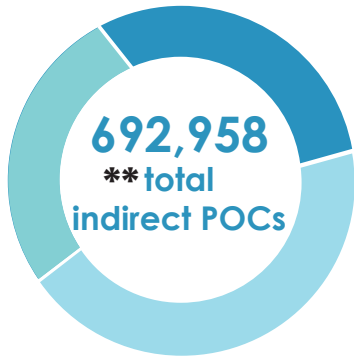
- **743,839** total registered POCs
 - **322,905 are orphaned (43%)**
- **754,430** total registered Org IDs (customer records not included)
 - **304,922 are orphaned* (40%)**
- Deleting some of this erroneous data could improve the quality and integrity of ARIN's Whois
 - **Community consultation coming in the near future**

**Orphaned ORG – not associated with any number resources*

Direct/Indirect POC Validation Stats



- 28,555 validated (56%)
- 22,326 unvalidated (44%)

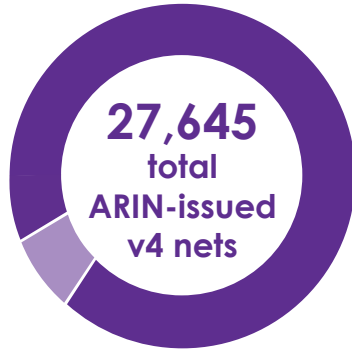


- 149,187 validated (22%)
- 220,866 unvalidated (32%)
- 322,905 orphaned (46%)

* Received resources from ARIN or Predecessor

** Customer reassignments received from an upstream ISP

ARIN Issued vs Legacy Stats



- 25,648 (93%) have at least one validated POC
- 1,997 (7%) have no validated POC



- 11,773 (47%) have at least one validated POC
- 13,201 (53%) have no validated POC

What Else Can ARIN do to Obtain/Maintain Accurate Data?

- Possible Staff Actions
 - **Have staff confirm POC and ORG data anytime they deal directly with a customer (face to face, phone)**
 - **Leverage the “Resources with non-validated POCs” report**
 - Staff could start tracking down organizations on this list in order to obtain updated contact information
 - **Provide more training to the community on data accuracy requirements**
 - Webinars, blogs, outreach, website enhancements, short videos and visuals, publications, etc.
 - **Develop new auditing procedure that targets all organizations with direct resources from ARIN**
 - Staff could conduct on-going outreach to direct customers to verify data

What Else Might be Done to Obtain/Maintain Accurate Data?

- Strengthen RSA terms and conditions
 - **Clearly highlight the requirements for accurate data at all times and add repercussions for not doing so**
- Create new policy
 - **Could require Whois data to be updated and accurate at all times**
- Introduce new Federal law
 - **Could require ISPs to provide and maintain updated and accurate contact information at all times for themselves and their customers**

In Summary

- Accurate Whois data is vital to the operation of the Internet
 - **We know some amount is inaccurate today and could get worse going forward**
 - **Inaccurate data can affect a network operator's ability to quickly fix operational and/or abuse issues**
 - **Accurate data contributes to the overall safety and stability of the Internet**
- Staff continues to work on ways to improve data accuracy and integrity but would like to hear feedback from the community on other ways we can attack this problem