ARIN IRR & RPKI Update

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Internet Routing Registry (IRR) Project Overview

- New IRR project started 2019 Q2
- Community stakeholder involvement
- Initial deployment 10 June 2020
- Initially will be two processes for creating objects
  - IRR-email using existing email template processor
  - IRR-Online using ARIN Online (new)

IRR Update Process

- IRR Data Migration

- Creation of new services for validated IRR entries within ARIN

- Integration of IRR into ARIN Online:
  - Development of user interface in ARIN Online for creating and editing new IRR objects

IRR Migration

- All existing objects will be migrated into one of two datasets:
  - **ARIN**: these objects are validated as meeting ARIN's requirements
  - **ARIN-NONAUTH**: unvalidated objects
- Validation includes:
  - Verification the organization is authorized to create the record
  - Verification the registration associated with the object is under an (L)RSA

Ongoing IRR-Email Integration

- The migration process will run daily to move objects created or updated in IRR-email to the new database.
  - Validated objects will be moved to the ARIN data set.
  - Unvalidated objects will be moved to the ARIN-NONAUTH data set.
- No new maintainers will be accepted in the IRR-email system

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Initial Deployment for Authenticated IRR Objects

- Users will be able to create, update,* & delete the following object types via ARIN Online:
  - route/route6
  - aut-num
  - as-set/route-set
- Existing users will be able to continue using the IRR-email interface

*Only IRR objects created in ARIN Online can be edited in ARIN Online

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Important Notes about IRR

- Existing users who continue using the IRR-email interface **must only** use the IRR-email interface.

- When submitting objects using the IRR-email interface users must use ARIN as the source.

- When the first IRR transaction is made via ARIN Online, access to IRR-email will be removed.

- Existing users of the IRR-email interface must acknowledge a warning message before being allowed to continue in ARIN Online

Differences in Service Between Authenticated/Unauthenticated IRR Objects

- Unauthenticated IRR Objects
  - Can only be modified using email templates
- Authenticated IRR Objects
  - Existing maintainers can continue to use email templates
  - ARIN Online can be used by:
    - Existing maintainers
    - New maintainers
- Both authenticated/unauthenticated will be published via FTP and NTRM

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Near Real-Time Mirroring (NRTM)

- ARIN will offer two NRTM streams using existing systems:
  - ARIN: validated IRR data
  - ARIN-NONAUTH: unvalidated IRR data
- Current users need to make configuration changes to pull from **both** of these streams to continue receiving all ARIN IRR data.
- The existing "ARIN" NRTM stream will have its serial number reset on deployment (10 June 2020).
- All Orgs using NRTM **must** use the new serial number.

FTP

- ARIN will offer two FTP sources:
  - ARIN: validated IRR data
  - ARIN-NONAUTH: unvalidated IRR data
- Current FTP users need to update their configurations to pull from both ARIN-NONAUTH and ARIN sources

Future IRR Functionality

- Creation of an Application Programming Interface (API) to manage IRR records (EOY 2020)
- IRR development is scheduled to continue throughout 2020 with a dedicated team

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Resource Public Key Infrastructure (RPKI) Update

RPKI Functionality Added in the Last Six Months

- Repository generation changed to run every 5 minutes
- Added RPKI Repository Delta Protocol (RRDP) support as an alternative to rsync for repository retrieval
- Changed the default validity period of a Route Origin Authorization (ROA) to 825 days
- Delegated RPKI server updated to support RFC 8083 Up/Down protocol
  - Much time spent testing the various delegated software implementations to ensure interoperability
- Added the capability to list and delete ROAs in ARIN's Registration RESTful Service (Reg-RWS)
  - This feature was requested as part of the ARIN Consultation and Suggestion Process (ACSP 2018.16)

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Future RPKI Functionality

- In the process of upgrading from an IBM 4765 to IBM 4767 Hardware Security Model (HSM) with these benefits:
    - Simplifying the interface between the HSM and the ARIN RPKI application
    - Removing architectural limitations of the old HSM that limited RPKI actions
        - For example, we will no longer have a limit on the existing maximum number of CRLS entries per organization
    - Simplifying our key signing ceremonies
- Adding additional enhancements such as:
    - Notification to Tech and Routing contacts for automatic ROA renewals
    - UI improvements in ARIN Online
    - Synchronization between IRR and RPKI

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Questions?