# Core Registry & Related Services
## Product Family Update

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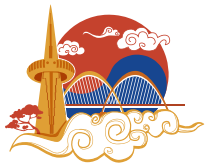
APNIC

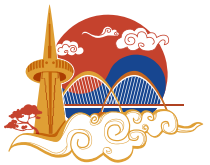




# APNIC registry services

- The services which support our primary role: ***responsible management of Internet Number Resources (INR)***
  - Maintenance of the database of resources (“core” registry database)
  - Public query services (**WHOIS, RDAP, WHOWAS**)
  - Reverse-DNS delegation (**ip6.arpa & in-addr.arpa**)
  - Resource Public-Key Infrastructure (**RPKI**)
- Public interfaces to manage all these registry elements
  - “MyAPNIC” and API endpoints for scripted management & integration
- Registry is a set of Authority statements
  - What we did, applying address policy to resources
  - Our records of *“we distributed resources to”* events
  - Delegations into internet-wide information & registration services

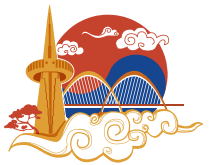




# Current registry services

- IP address & ASN delegations and transfers
  - Our fundamental record keeping
  - Includes “pool management” for the ranges we have assigned authority over (from IANA, and transfers in from other RIR)
- Whois Database (including Internet Routing Registry)
  - A Public view of Registry records
  - Includes data submitted by delegated authorities
    - Mixture of authority and non-authority statements in one service





# Current registry services (continued)

- Reverse DNS
  - Anchor and sub-delegation in the in-addr.arpa and ip6.arpa DNS tree
- Registration Data Access Protocol (RDAP) (NEW since 2015)
  - JSON structured data over HTTP (replacing WHOIS)
- Resource Public Key Infrastructure (RPKI) (since 2010)
  - Cryptographically verifiable statements about INR

# Registry Accuracy

- Apply current public records standards to all data including block allocations to NIR
  - Complements Organization and PoC update activity in APNIC
    - Review of KRNIC block transactions underway
    - Delegated, transfer and related stats files will change
    - Other NIR will follow in 2019
- Continuous Improvement goal from strategic plan
  - We are auditing software paths which update registry
  - We are adopting an event log model of transactions and changes

# rDNS improvements

- **Problem**: NIR historical blocks, some entire /8 are not available for rDNS delegation unless resource is maintained inside the NIR
  - but we now have transfers which can go out of economy or to management in APNIC
- Discussing improvements to support reverse-DNS zone sharing with NIR
  - Leverage existing inter-RIR API
- **Goal**: equivalent rDNS functionality for any INR in any NIR or APNIC, irrespective of who holds the address ranges
- Operations Improvements in rDNS logging, service delivery and reporting

# WHOIS improvements

- **Goal**: consistent WHOIS data at APNIC for all resources irrespective of which NIR or APNIC maintains the INR
- Mirrors of all NIR data offered from APNIC whois
  - Continuing activity from 2018
- **Problem**: IRR (radb) flag support not working well for some tools used by BGP operators
  - Discussing deployment of NTT ‘irrd’ as a discrete service
    - Offers integration with RPKI activities, data consistency checks
  - We **propose** to relocate all IRR data into a new stand-alone WHOIS which will be mirrored by APNIC whois services, but run as a discrete SOURCE
    - To be discussed with the community

# RDAP/WHOWAS

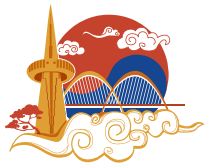
- JSON based public record system, closely aligned between number and name based services
  - WHOWAS tracks historical states, RDAP shows current head state
- Globally connected
  - HTTP(s) protocol with 302 redirection and steerage map
  - Consistent data format for all servers worldwide
- **Goal**: implement RDAP for all APNIC/NIR WHOIS records
  - Continuing activity from 2018
- Standardization work in IETF
  - Bulk data, Search

# RPKI

- **Goal**: consistent RPKI service for all eligible INR holders in APNIC region
  - Three NIR operate a local service under APNIC RPKI
  - Four NIR operate in APNIC RPKI services through MyAPNIC for their subaccount holders
- Anysigner: a CMS model of signing arbitrary data with RPKI
  - In github, test client and web services will deploy in 2019
- Standardization work
  - Progress ‘validation reconsidered’ deployment draft inIETF
  - ‘anysigner’ model related draft in IETF
  - NRO ECG coordination on counting/measuring RPKI

# Questions?





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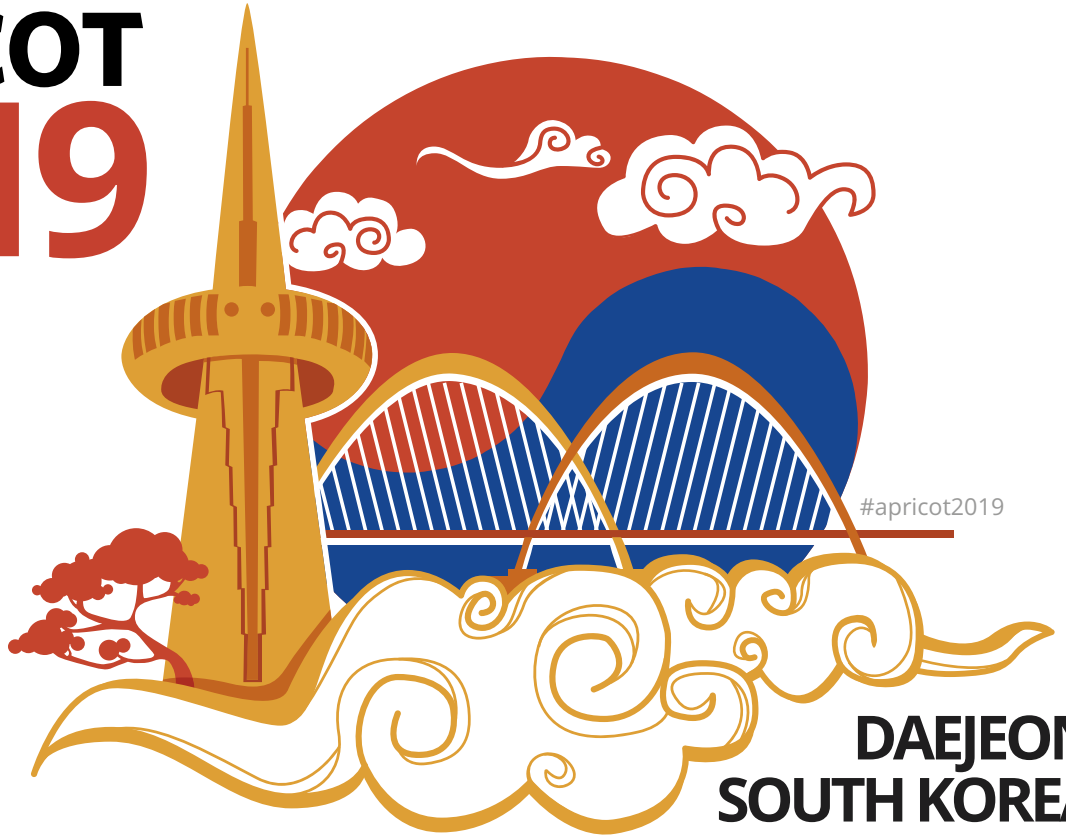

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