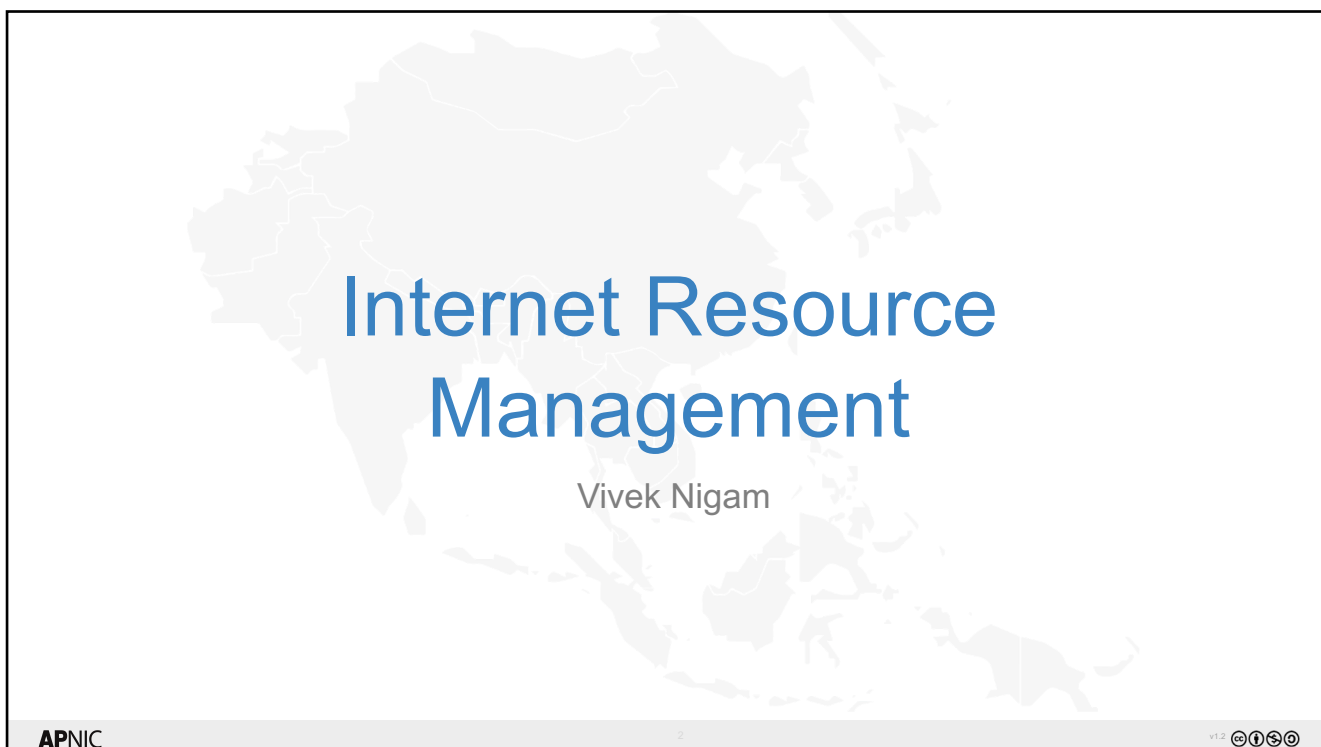


1



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Overview



- Introduction to APNIC
- Membership and Resource Application (Demo)
- APNIC Whois database and IRR
- MyAPNIC (Demo)

What are registries



- Organizations running registry services
 - With authority for registration of some 'public resource'
- Public databases describing status of resources
 - Land titles
 - Vehicle registrations
 - Domain Names
 - Internet Number Resources (INRs) – IPv4, IPv6, ASNs
- Internet address registries
 - RIRs, NIRs, LIRs

About APNIC

"A global, open, stable, and secure Internet that serves the entire Asia Pacific community"

```

graph TD
    A[Asia Pacific Network Information Centre] --> B[Neutral]
    A --> C[One of the five Regional Internet Registries (RIRs)]
    B --> D[Membership based organisation]
    C --> E[Not for profit operations]
    D --- E
  
```

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Services We Provide

Resource Delegations	IPv4, IPv6, AS number delegations
Resource Transfers	Due to merger/acquisitions, IPv4 & ASN transfers
Whois Database/RDAP	Accurate Whois registrations, Internet Routing Registry
RPKI	Secure routing, also known as Resource Certification
Reverse DNS	APNIC manages reverse DNS for IPv4 and IPv6

APNIC

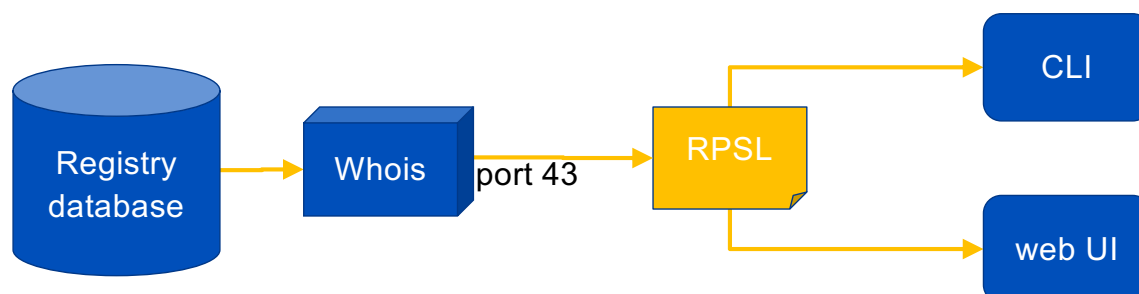
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APNIC database and the Internet Routing Registry (IRR)

- APNIC Whois Database
 - Two databases in one
- Public network management database
 - Whois information about networks and contacts (IP addresses, ASNs and so forth)
- Routing Registry (RR)
 - Contains routing information (routes, filters, peers and so forth)
 - APNIC RR is part of the global IRR

Whois at APNIC



- Query service on TCP port 43 (RFC 812, 1982)
- Very simple, limited service

Public Network Management Objects



```

inet6num
inetnum
aut-num
organisation
role/person
maintainer
irt
...
  
```

Organisation Object



Contains only business information about an organization

```

organisation:  ORG-B0B1-AP
org-name:     Bank of Bhutan Limited
country:      BT
address:      Norzin Lam
phone:        +97502334333
e-mail:       sangum.chhetri@bob.bt
mnt-ref:      APNIC-HM
mnt-by:       APNIC-HM
last-modified: 2020-05-28T12:58:51Z
source:       APNIC
  
```

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Maintainer Object



Contains details of the authorized agent able to make changes to APNIC Whois Database objects

```

mntner:       MAINT-BANKOFBHUTAN-BT
descr:       Bank of Bhutan Limited
country:     BT
admin-c:     BOBA2-AP
upd-to:      abuse@bob.bt
auth:        # Filtered
mnt-by:      MAINT-BANKOFBHUTAN-BT
referral-by: APNIC-HM
last-modified: 2020-06-03T05:37:02Z
source:     APNIC
  
```

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Maintainer Object



Contains details of the authorized agent able to make changes to APNIC Whois Database objects

```
mntner:      MAINT-BANKOFBHUTAN-BT
descr:      Bank of Bhutan Limited
country:    BT
admin-c:    BOBA2-AP
upd-to:     abuse@bob.bt
auth:       # Filtered
mnt-by:     MAINT-BANKOFBHUTAN-BT
referral-by: APNIC-HM
last-modified: 2020-06-03T05:37:02Z
source:     APNIC
```

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Role Object



Contains details of technical or administrative contacts as represented by a role

```
role:      Bank of Bhutan administrator
address:   Norzin Lam, Thimphu Thimphu 11001
country:   BT
phone:     +97502334333
e-mail:    abuse@bob.bt
admin-c:   BOBA2-AP
tech-c:    BOBA2-AP
nic-hdl:   BOBA2-AP
mnt-by:    MAINT-BANKOFBHUTAN-BT
last-modified: 2020-06-03T05:37:02Z
source:    APNIC
```

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IRT object



Incident Response Teams (IRTs) are specialized teams that specifically resolve computer security incidents

```
irt:          IRT-BANKOFBHUTAN-BT
address:      Norzin Lam, Thimphu Thimphu 11001
e-mail:       abuse@bob.bt
abuse-mailbox: abuse@bob.bt
admin-c:      BOBA2-AP
tech-c:       BOBA2-AP
auth:         # Filtered
remarks:      abuse@bob.bt was validated on 2020-06-22
mnt-by:       MAINT-BANKOFBHUTAN-BT
last-modified: 2020-06-22T11:53:14Z
source:       APNIC
```

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Inet6num Object



Contains details of an allocation or assignment of IPv6 address space

```
inet6num:     2001:360::/32
netname:      V6TELSTRAINTERNET-AU-20011211
descr:        Australian National Telephony descr:
and IP carrier
country:      AU
org:          ORG-TC6-AP
admin-c:      TIAR-AP
tech-c:       TAN2-AP
abuse-c:      AT1005-AP
status:       ALLOCATED PORTABLE
notify:       routing@telstra.net
mnt-by:       APNIC-HM
mnt-lower:    MAINT-AU-TIAR-AP
mnt-routes:   MAINT-AU-TIAR-AP
mnt-irt:      IRT-TELSTRA-AU
last-modified: 2020-12-09T23:15:36Z
source:       APNIC
```

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Inetnum Object



- Contains details of an allocation or assignment of IPv4 address space

```
inetnum:      103.151.231.0 - 103.151.231.255
netname:      BANKOFBHUTAN-BT
descr:        Bank of Bhutan Limited
country:      BT
org:          ORG-B0B1-AP
admin-c:      BOBA2-AP
tech-c:       BOBA2-AP
abuse-c:      AB978-AP
status:       ASSIGNED PORTABLE
mnt-by:       APNIC-HM
mnt-routes:   MAINT-BANKOFBHUTAN-BT
mnt-irt:      IRT-BANKOFBHUTAN-BT
last-modified: 2020-06-04T02:14:45Z
source:       APNIC
```

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Aut-num Object



Contains details of the registered holder of an Autonomous System number and their routing policy for that AS

```
aut-num:      AS24021
as-name:      APNICRANDNET-TUI-AU
descr:        TUI experiment
country:      AU
import:       from AS1221
action        pref=100;
accept        ANY
import:       from AS109
action        pref=100;
accept        ANY
export:       to AS1221
announce      AS24021
export:       to AS109
announce      AS24021
default:      to AS1221
action        pref=10;
networks      ANY
```

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Routing Registry Objects



- route
- route6
- as-set
- aut-num
- rtr-set
- filter-set
- peering-set
- ...

Route and Route6 Object



Represents a single IPv4/IPv6 route injected into the Internet routing mesh

```
route6:      2001:df2:ee01::/48
descr:      Prefix for APNICTRAINING LAB DC
origin:     AS45192
mnt-by:     MAINT-AU-APNICTRAINING
last-modified: 2016-06-23T14:32:38Z
source:     APNIC
```

```
route:      202.125.97.0/24
descr:      Prefix for APNICTRAINING LAB DC
origin:     AS45192
mnt-by:     MAINT-AU-APNICTRAINING
country:    AU
last-modified: 2016-06-16T23:23:17Z
source:     APNIC
```

As-set Object



- A group of Autonomous Systems with the same routing policies.

```

as-set:      AS17821:AS-APNICTRAINING-ISP
descr:      AS-SET for APNIC Training ISP
tech-c:     AT480-AP
admin-c:    AT480-AP
mnt-by:     MAINT-AU-APNICTRAINING
members:    AS131107, AS45192, AS135541, AS135540, AS135533
members:    AS135534, AS135535, AS135536, AS135537, AS135538
last-modified: 2018-12-28T02:41:05Z
source:     APNIC
  
```

Out of Date Route Objects



whois -h whois.radb.net 203.76.192.0/24

```

route:      203.76.192.0/24
descr:      Proxy-registered
origin:     AS55821
source:     NTTCOM
  
```

```

route:      203.76.192.0/24
descr:      Proxy-registered
origin:     AS17970
source:     RADB
  
```

```

route:      203.76.192.0/24
descr:      REACH (Customer Route)
origin:     AS23944
source:     REACH
  
```

RPKI: ROA



- ROA (Route Origin Authorization) is a digitally signed, cryptographic object which is generated by the Resource Certification service.
- What's contained in a ROA?
 - The AS number you have authorized
 - The prefix that is being originated from it
 - The most specific prefix (maximum length) that the AS may announce

<https://www.myapnic.net>

Thank You!

