Proposal: NIR Operated IRR

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IRR Current Status

- IRR = Internet Routing Registry
- RADB already mirror with over 50 IRR servers
  - http://www.irr.net/docs/list.html
  - IRR user cannot mirror with all servers
  - It is difficult to found the target object among all servers
  - Many IRR objects are not kept up-to-date

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Utility of IRR data

- Some ISPs make a prefix/AS filter
  - Using RAToolSet or other own made Tools
  - Other organizations
    - They can not collect enough IRR data
      - There are too many servers
      - Many IRR objects are not kept up-to-date

- AS operators search:
  - Prefix contact information
  - AS contact information

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RIR operated IRR

- RIRs already reached consensus that they operate IRR server in NANOG22 BoF.
  - RIPE/NCC had operated
  - APNIC started to operate in last year
  - ARIN is coordinating with Merit(RADB)

  - Their IRR server mirror with each other to look up other IRs IRR data.
    - This makes added value for their member to give routing information with allocation/assignment information.

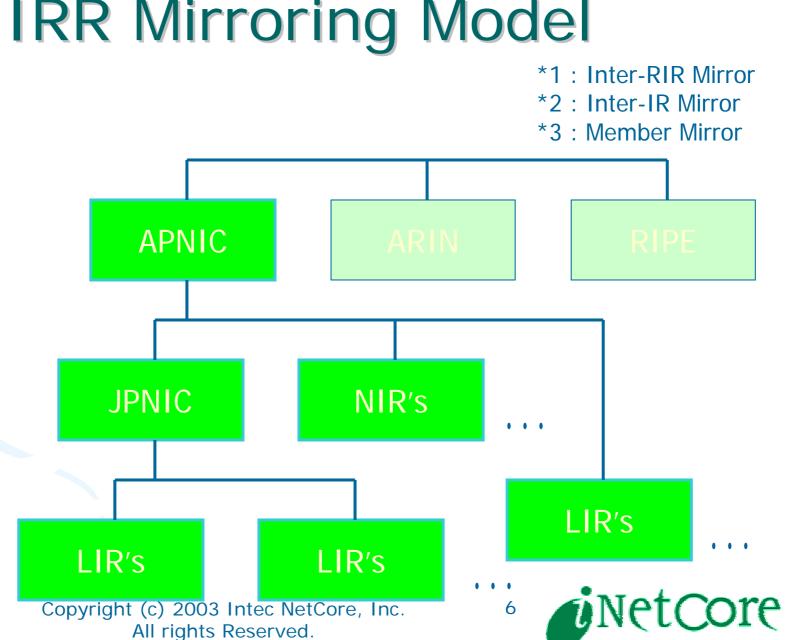 - JPNIC Team have something to do with this movement

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Original Proposal from JPNIC Team

- IRs operate IRR server and these IRR should mirror with each other according to IRs hierarchy.

  – The server should interact with their WHOIS server, if they can.

    - It makes that IRR data is kept correct contents.
    - IRR users search all IRR object including other IR's IRR data.
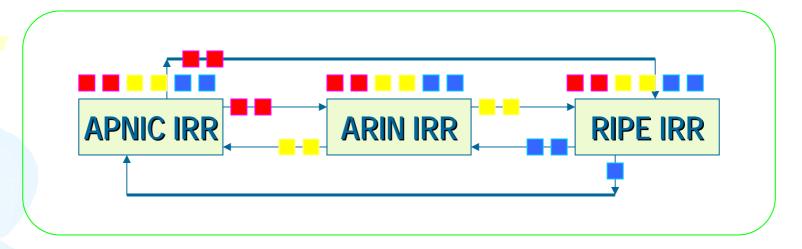
- Next slides show our proposing model

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IRR Mirroring Model

*1 : Inter-RIR Mirror
*2 : Inter-IR Mirror
*3 : Member Mirror

*1

*2

*3

APNIC

ARIN

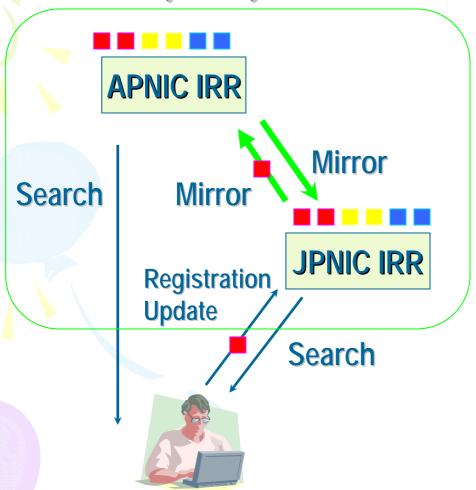RIPE

JPNIC

NIR's

LIR's

LIR's

LIR's

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(*1) Inter-RIR Mirror

- Bi-directional Mirroring among RIR
- Includes the information replicated from Inter-IR mirror
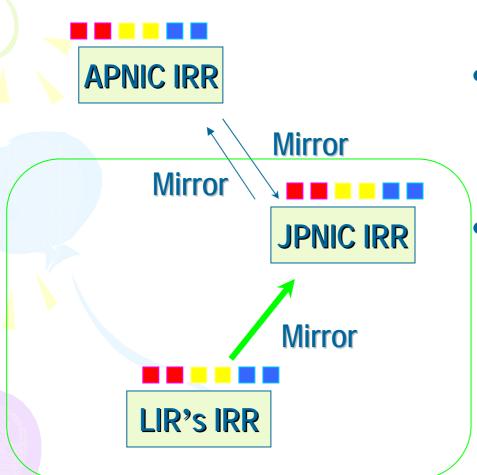- Full-mesh topology

(*2) Inter-IR Mirror

APNIC IRR

Mirror

Search

Mirror

JPNIC IRR

Registration
Update

Search

USER (JPNIC Member)

- Bi-directional mirroring between RIR and NIR

- NIR's IRR mirror all IRR data from its super-ordinate RIR's IRR

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(*3) Member Mirror

APNIC IRR

Mirror

Mirror

JPNIC IRR

Mirror

LIR's IRR

- Uni-directional mirroring from IR

- LIR's IRR dose not have a repository, only get information from RIR or LIR

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JPNIC Team model implementation

- JPNIC started JPIRR service to investigate our model in co-operation with APNIC
  - We really appreciate it.
  - Currently, we found that IRR server needs some newly implementation.
    - It is IRR data propagation mechanism.
    - IRR data check mechanism, but we defined this mechanism should implement in next phase.
  - We avoid this problem using redundant configuration for IRR server.

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Proposal(1)

- NIRs start to operate IRR server
  - These servers should mirror with APNIC IRR server.

  - NIRs can collect National routing information.
    - It is useful for statistical analyze and checking that allocated block is used appropriately. (Puching-holed?, Re-allocate?)
  - NIR members get benefit what they search IRR routing information smoothly and correctly.

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Actual operational model for NIR

- DISCUSSION ☺

- Conceivable method:
  - NIRs operates IRR separately their WHOIS database.
  - NIRs assume that APNIC IRR is NIR's IRR ☺
    - However, NIR operate mirror server of APNIC IRR.

  - Criteria of choice is:
    - How many ASes did NIR assign?
    - How many allocated blocks did NIR allocate?

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