

# IRR Operational Model

~ IR hierarchy model

/ Cooperate with whois ~

JPNIC IRR Planning Team

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# History of US (1)

- ◆ 2000 Jan ... JPNIC IRR Workshop started
  - Investigation and research in the environment surrounds IRR
- ◆ 2000 Mar ... Apricot Meeting in Korea
  - Indication of the problem based on results of an investigation
  - Proposal of solution
- ◆ 2001 Oct ... APNIC Meeting 10<sup>th</sup>
  - APNIC decided to operate IRR
- ◆ 2001 May ... NANOG in Scottsdale
  - Rough consensus that 3RIR(s) do IRR and mirror

# History of US (2)

- ◆ 2001 Aug ... Workshop moved to “JPNIC IRR Planning Team”
  - As a tidy organization
- ◆ 2002 Feb ... NANOG Meeting in Miami
  - JPNIC Update at RR BOF provided by Merit

# Goal

## ◆ To make “Ideal IRR Operational Model” in AP Region

- Coordination of AP Region’s IRR
- To make a guideline for IRR users
- Encouragement to use our model

## ◆ JPNIC also use the model

- Trial IRR Service for JPNIC Members
- Propose an authorization model

# Current IRR Problems

## ◆ Many IRR servers distributed

- The number of mirror-paths of IRR increases enormously
- Dispersing IRR information is now in progress

## ◆ Appropriate information cannot be acquired from IRR

- About 50% of “full routes” are not registered to public IRRs etc..

## ◆ Week Authorization mechanism

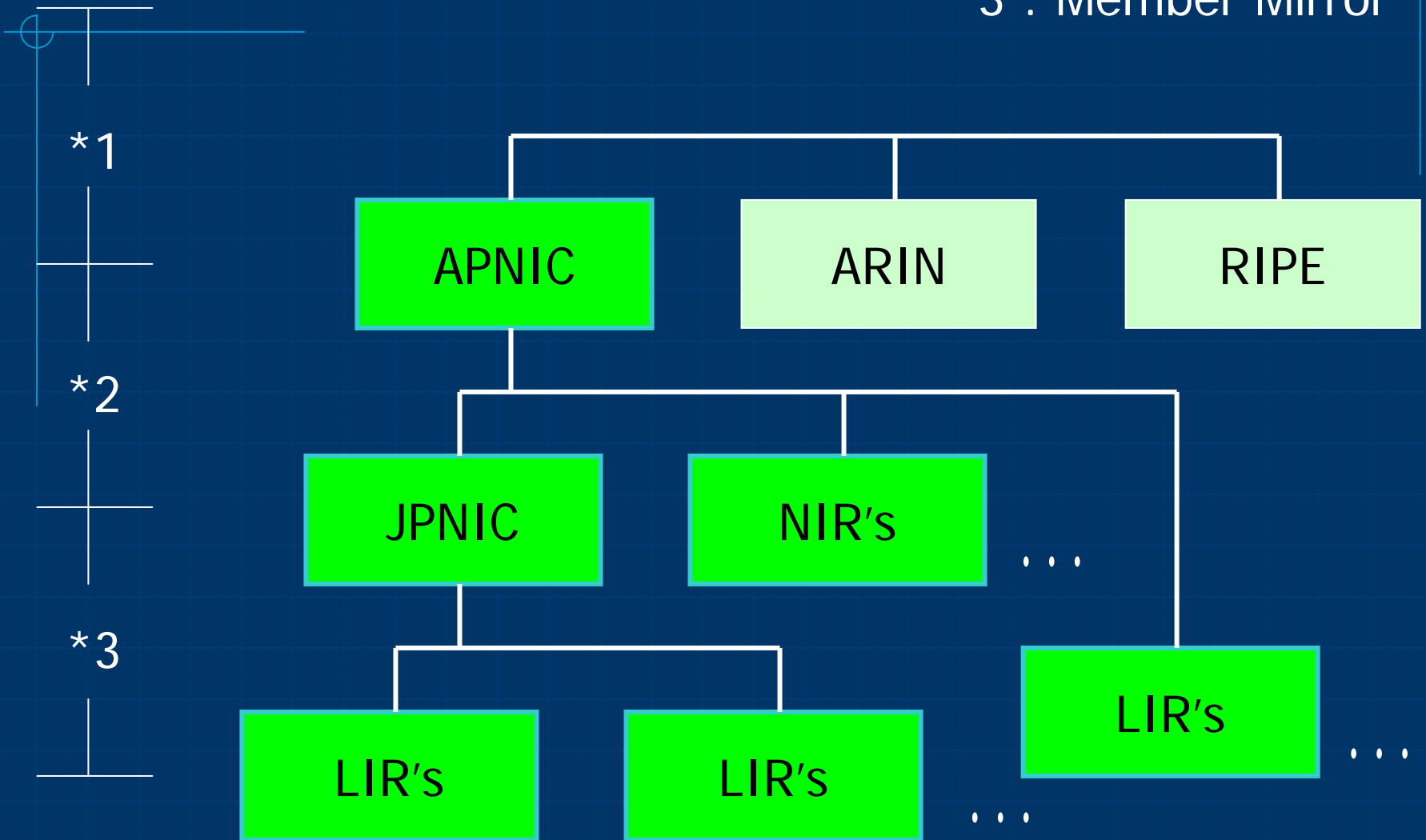
- Anyone will be able to register to IRR
- IRR cannot judge whether information is right or

# Basic concept of “IRR Operational Model”

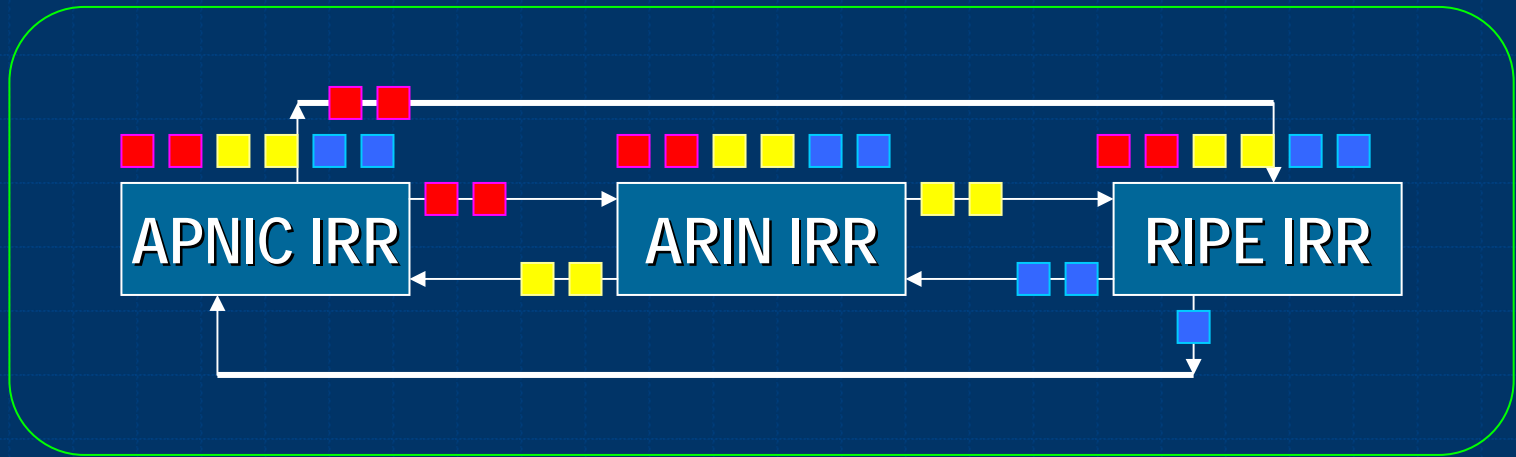
- ◆ IR should operate IRR server
  - IR can only ensure whether the IRR information is right or not
- ◆ The same model as the hierarchy model from IR is adopted
  - Each IR maintain their delegation blocks and mirrored each other
  - Easy to migrate of IRR information and whois database

# IRR Mirroring Model

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



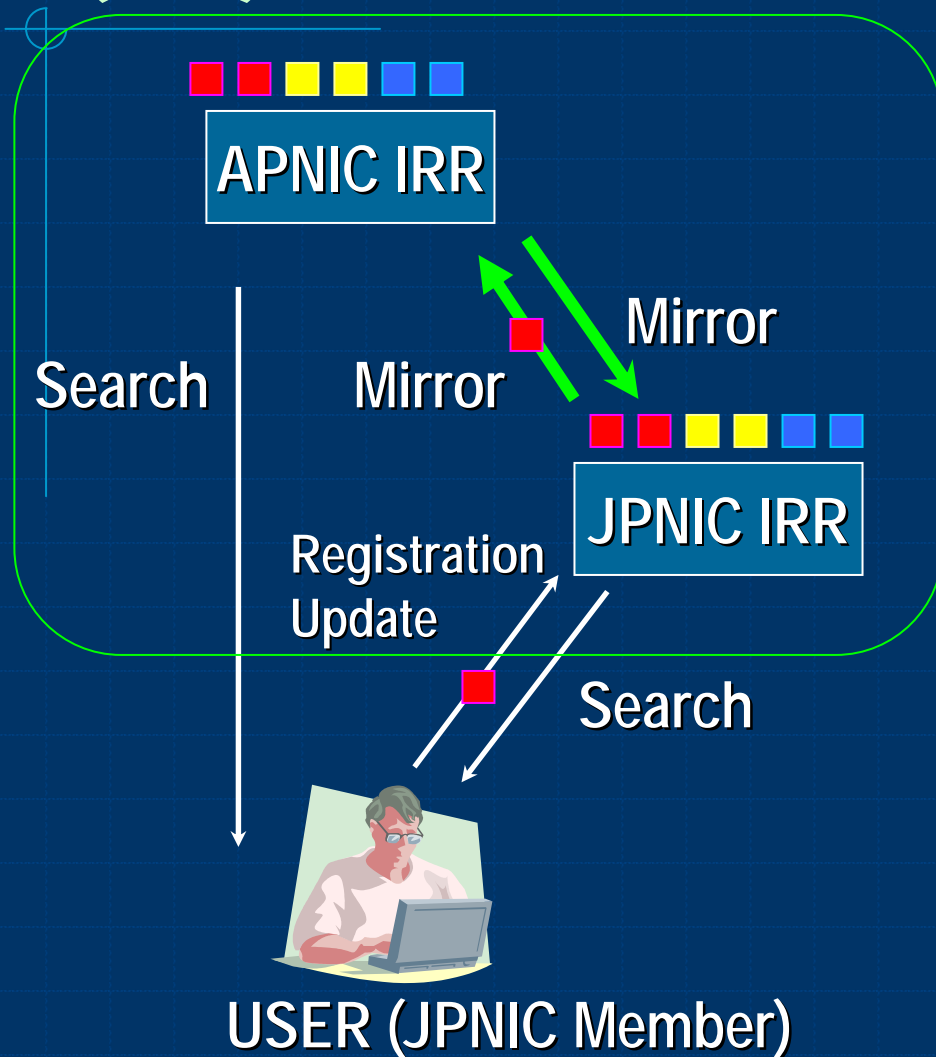
# (\*1) Inter-RIR Mirror



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

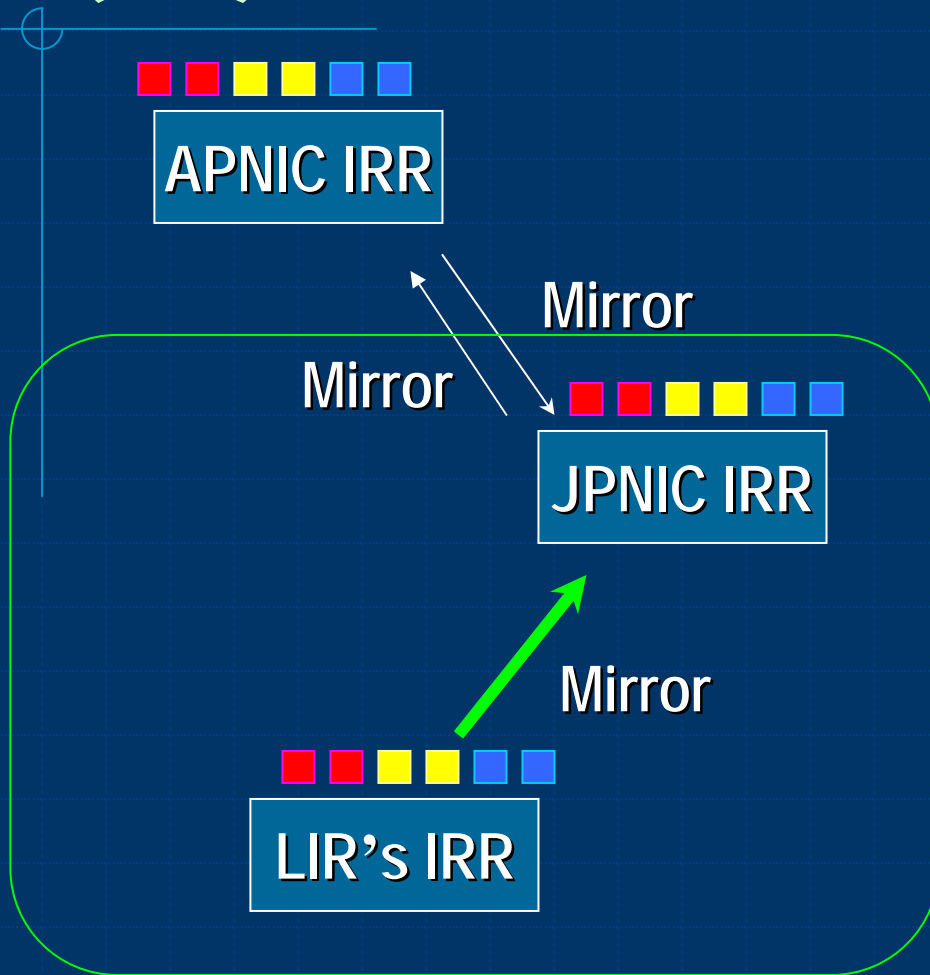


# (\*2) Inter-IRR Mirror



- ◆ Bi-directional mirroring between RIR and NIR
- ◆ NIR's IRR mirror all IRR data from its super-ordinate RIR's IRR

# (\*3) Member Mirror



◆ Uni-directional mirroring from IR

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

# JPIRR (JPNIC IRR)

## ◆ What is JPIRR

- NIR's IRR
  - ◆ Mirror with RIR (APNIC) and Supplied of data
  - ◆ Providing IRR service for LIRs and users
- Experimental IRR

## ◆ Purpose of JPIRR

- Verification of this model
- Providing experimental service for JPNIC members
- The validity check of a guideline

# Remaining Issues

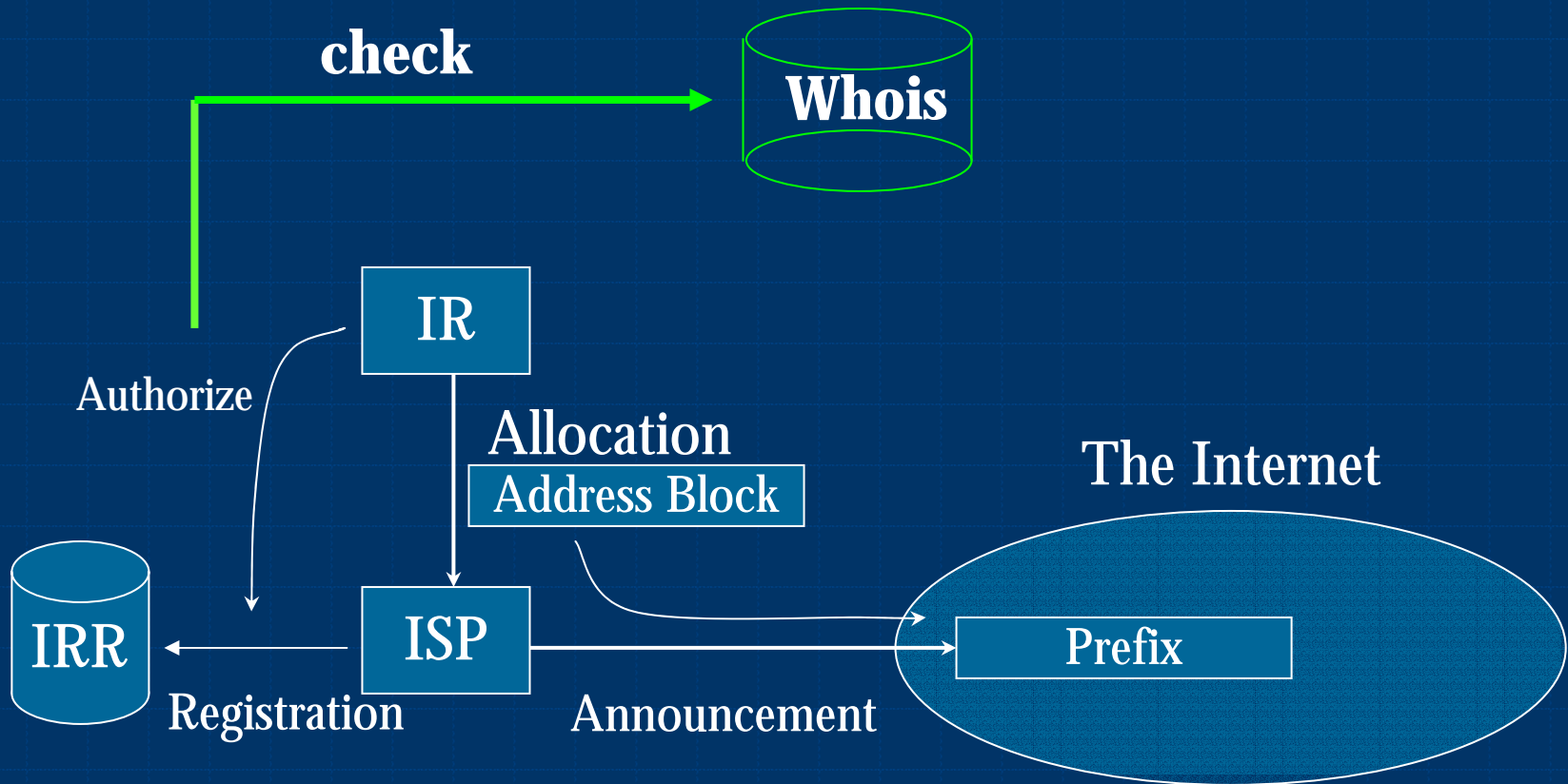
## ◆ Need to make an appropriate authorization mechanism

- Cooperate or migration with WHOIS?
  - ◆ Implementation is to be discussed
- Any other ideas?

## ◆ Operational issue

- Cooperate with ISP's IRR servers

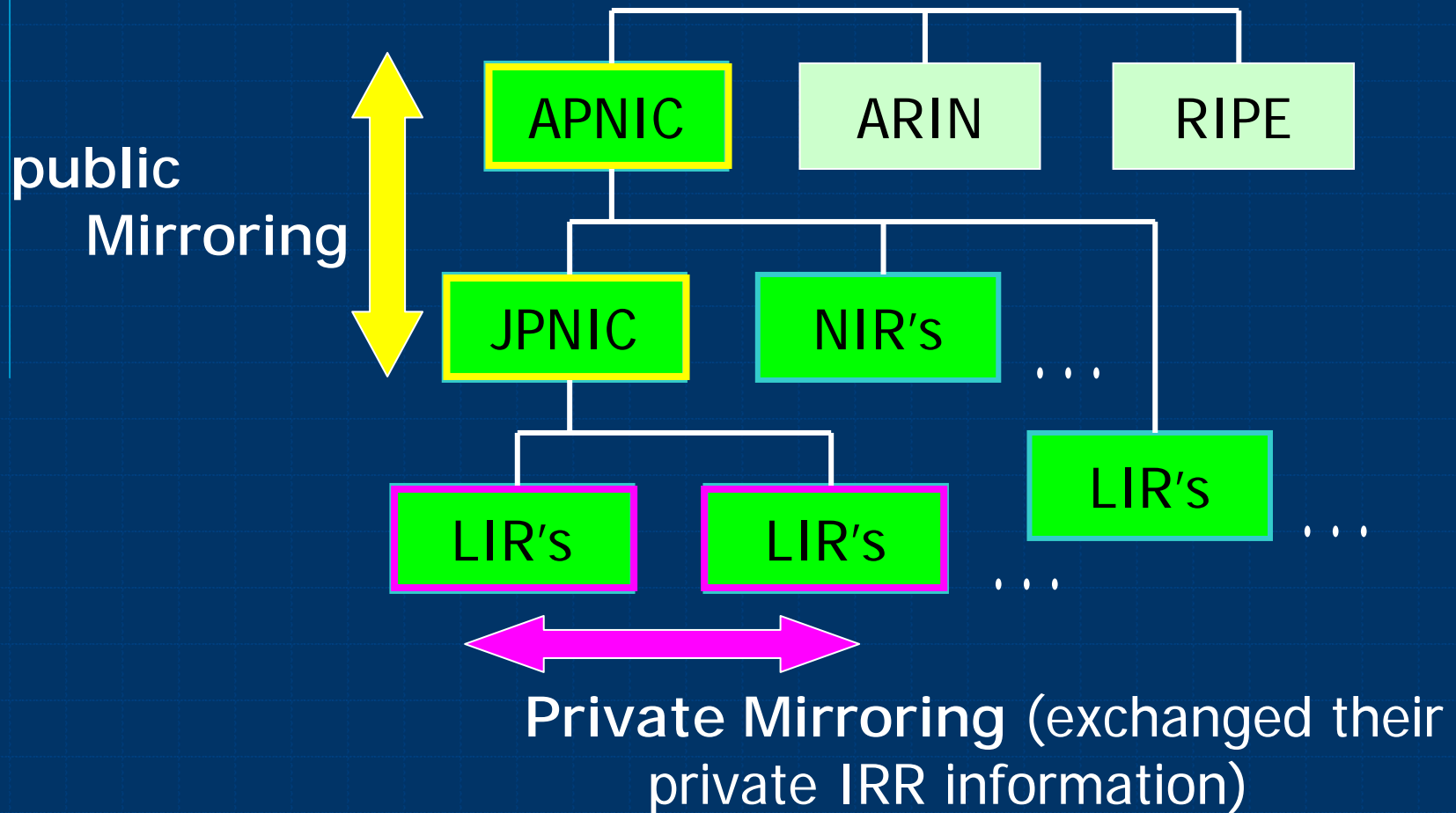
# authorization mechanism (just idea..)



# Remaining Issues

- ◆ Need to make an appropriate authorization mechanism
  - Cooperate or migration with WHOIS?
    - ◆ Implementation is to be discussed
  - Any other ideas?
  
- ◆ Operational issue
  - Cooperate with ISP's IRR servers

# Definition of Public/Private IRR Information



# Conclusion

- ◆ “IRR mirroring model“ is proposed
  - Adopted IR hierarchy model
- ◆ We need to get enough data
  - Mirroring Propagation test
  - The guideline is checked by using this model
- ◆ Other NIRs need to start IRR and mirror by using this model !!
- ◆ We have to discuss about remaining issues
  - To make an appropriate authorization mechanism
  - Operational issues (ISP’s IRR server)



Thank you for everyone  
Please continue this  
discussion on  
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