



# IRR Scalability

Kuniaki Kondo

IRR Workshop Chair, JPNIC

IIJ

# For improving IRR environments

- ★ Aggregation of IRR servers
  - ★ Encouragement of IRR information registration
  - ★ Update of information
- ⇒ However, it is very hard to solve all of these problems in parallel
- ⇒ We need to set priorities
- ⇒ Today, we will focus on “Aggregation of IRR servers”

# What is aggregation of IRR Servers?

- ★ IRR users would be able to choice near IRR servers easier
  - Need of IRR servers list
  - Need of clarify IRR support area
  - IRR data would be aggregated among 5 or less servers

# Proposal

## ★ Placing IRR server(s) at APNIC for AP region

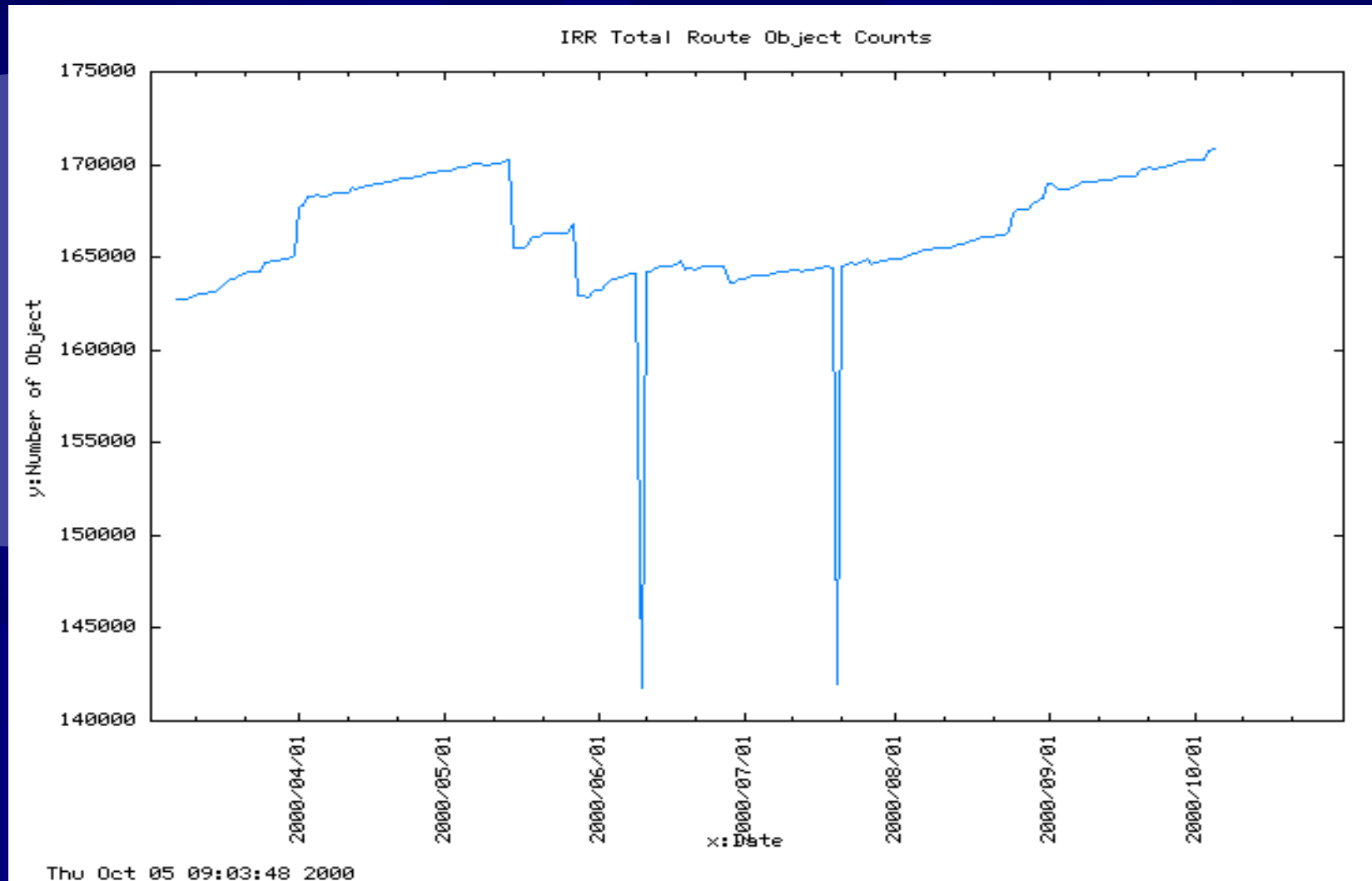
### ★ Because...

- ★ APNIC is a non-profit organization
- ★ APNIC has already collected information similar to IRR
  - Those information possibly divert to IRR
- ★ Support area of APNIC is clear enough

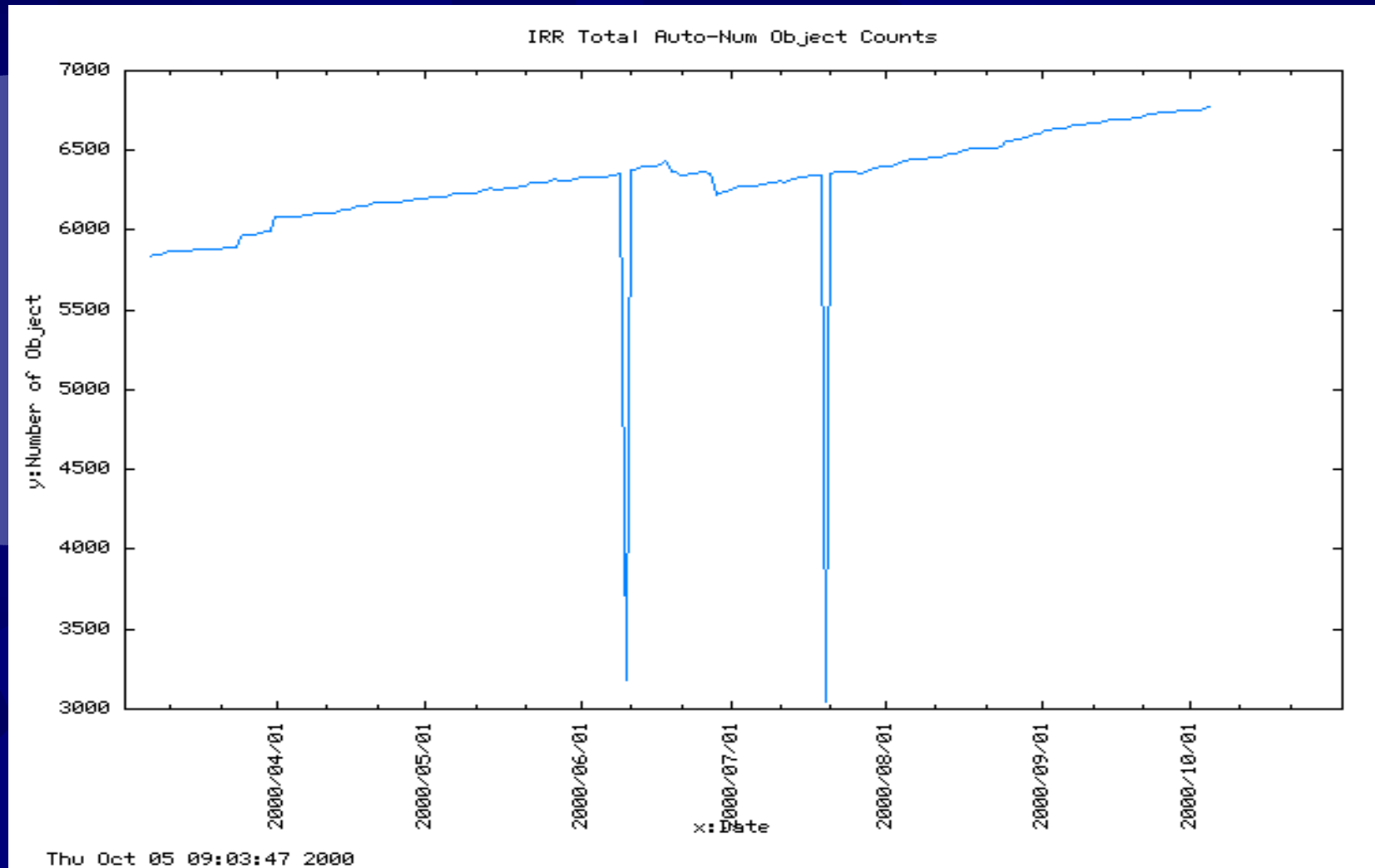
# IRR Current Status

- ★ 37 or MORE IRR servers worldwide
  - ★ Including ONLY 29 possible to mirror
- ★ Dispersing IRR information is now in progress

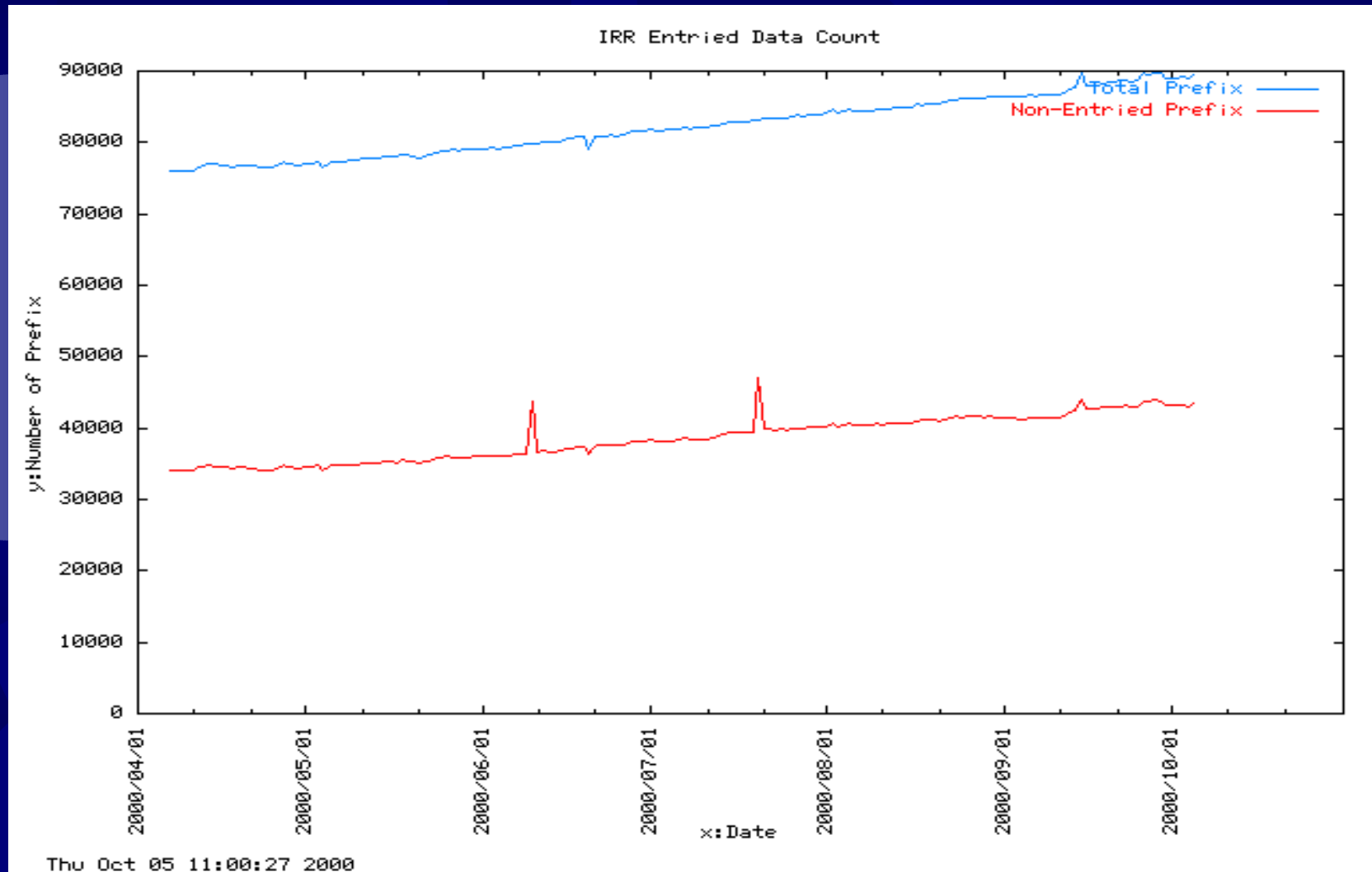
# Total number of route objects in 29 IRRs



# Total number of AS objects in 29 IRRs



# Un-registered routes are increasing in 29 IRRs





# What are we doing for improving?

- ✦ We need public IRR server
  - ✦ IRR server should be managed appropriately
- ⇒ We need APNIC IRR server

# How to be used APNIC IRR?

- ★ Registration of APNIC IRR objects would be done by AP region users
  - Needs of making a basic policy for registration and operation
  - Needs of promoting registration activity and updating information

# Possible IRR operation policies

## ★ Registration Policy

- ★ APNIC has responsibility for uniqueness of IP Address and has administrative information of address blocks WHOIS
- ★ APNIC doesn't have responsibility for routing information and internet reachability IRR

## ★ Those two consideration would be separated

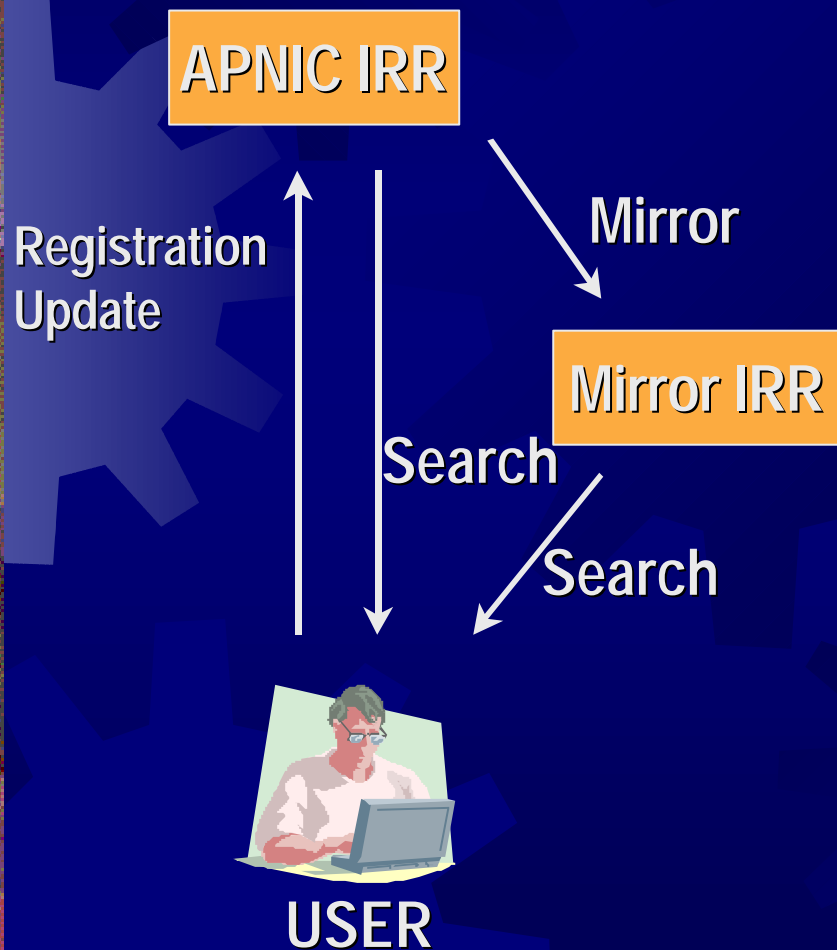
# Possible IRR operation policies

- ✦ Maintainer object registrations would be managed by APNIC
  - ✦ APNIC members and IR members under the APNIC hierarchy such as JPNIC, KRNIC, and TWNIC can register to APNIC IRR
- ✦ Route Object registrations which are allocated by IRs are managed by each IRs?

# Possible mirroring/registration/ searching method

- ★ APNIC IRR support searching and registration function (Type1)
  - APNIC IRR is the central IRR server in AP region
  - Allow searching from any users
  - Allow registration from registered users
  - Allow mirroring from any users
- ★ APNIC IRR support only registration (Type2)
  - APNIC IRR is the central IRR server in AP region
  - Don't allow searching from any users
  - Allow registration from registered users
  - Allow mirroring from any users

# Mirroring Method(Type1)



- ✦ Registration/Update are allowed only APNIC IRR
- ✦ User can search APNIC and mirrored IRR
- ⇒ APNIC IRR need enough resource for search

# Mirroring Method(Type2)



- ★ Registration/Update are allowed only APNIC IRR
- ★ User can search only mirrored IRR
- ⇒ APNIC IRR don't need resource for search
- ⇒ APNIC are needed to maintain list of mirror IRR servers

# Promotion of registration/update

- ✦ Need the registration/update guideline
  - ✦ Including registration/update policy
- ✦ However, this issue is not scope
  - ✦ We need to continue discussion




# Introduction of IRR workshop

## ★ Purpose of this workshop

- ★ Examination of useful and reasonable IRR environment
  - Where is the best place for IRR server?
  - What do need IRR users for IRR server? .....

## ★ Activity of this workshop

- ★ Estimation of the number of IRR objects which can be mirrored
- ★ Comparison btw real routes and registered objects
- ★ Research on use of IRR information
- ★ Analysis on IRR systems
- ★ Analysis on Difference btw IR whois system and IRR system



Thank you for everyone  
Please continue this  
discussion on  
[routing-sig@apnic.net](mailto:routing-sig@apnic.net)