Database Update

Kaveh Ranjbar
Database Department Manager, RIPE NCC

RIPE Database statistics

- Operational stats:
  - https://www.ripe.net/data-tools/stats/ripe-database
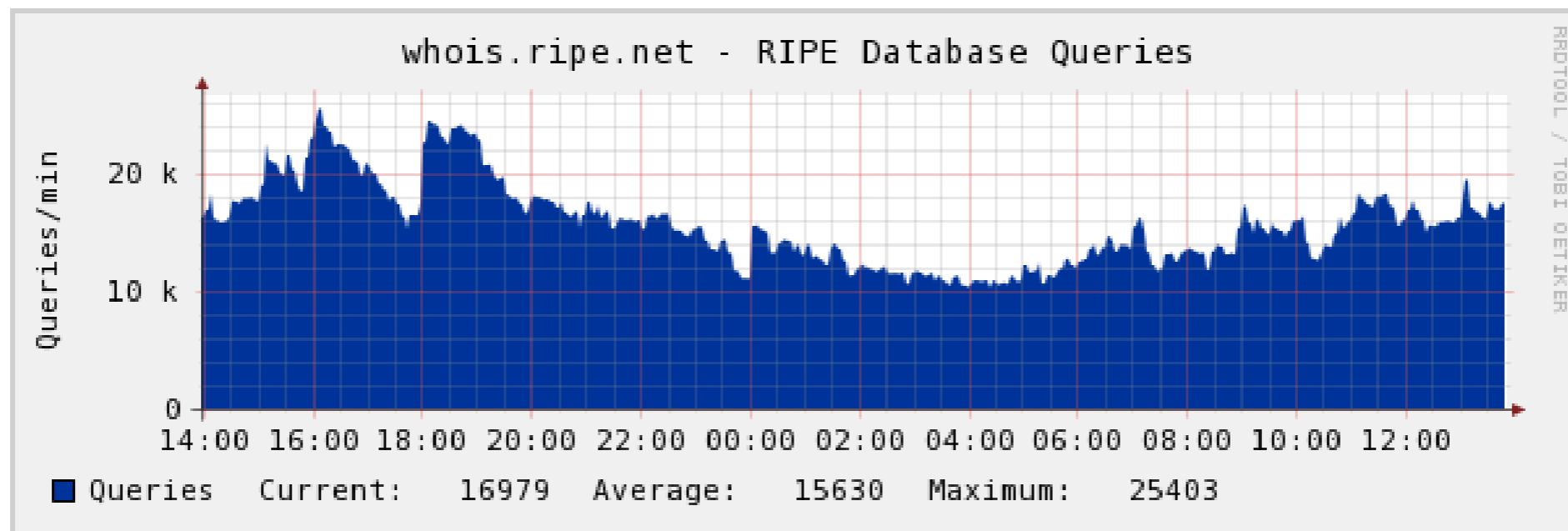
On uptimes

- We have looked into different solutions to monitor reachability, that included using RIPE Atlas, monitoring from other RIRs or using a third party service

- RIPE Atlas is unrivaled in collecting reachability data and more importantly to aggregate results, we will use Atlas to monitor reachability

On reporting issues and change mgmt

- Full transparency, everything is announced on:
  - http://www.ripe.net/lir-services/service-announcements

- Issues with possible notable impact on our users will always be announced on mailing lists

- RIPE DB Documentation will be completely revised after the redevelopment project

- Version numbers are added, web platform for public change log is ready and will be up shortly

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Developments

What we did and what we are working on
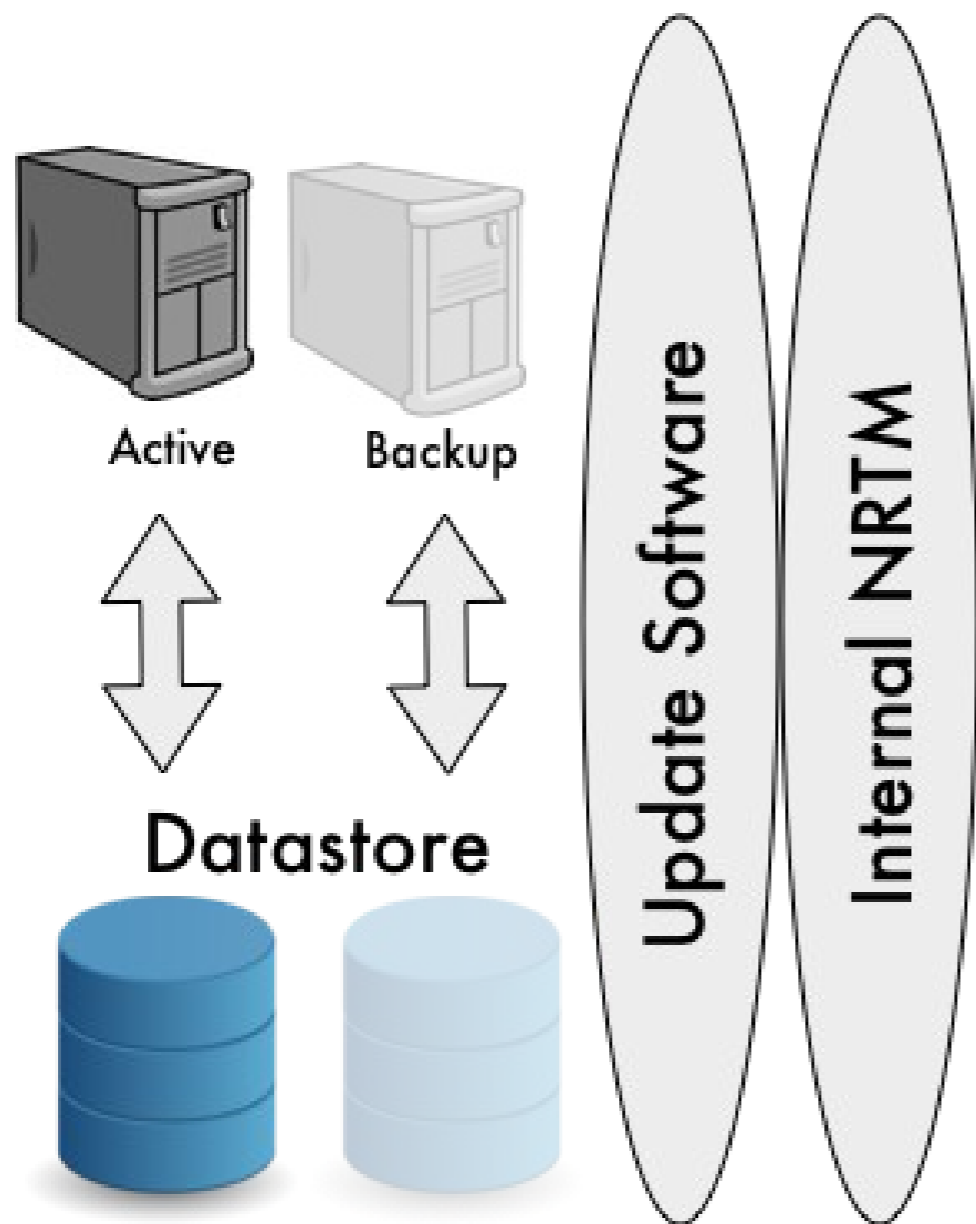
Ongoing – Redevelopment of Whois

- Our main focus is on developing new whois backend software

- All queries to the RIPE Database are handled by new software now, the old query software is decommissioned

- New system has helped us to deploy a fault tolerant and easy to maintain infrastructure
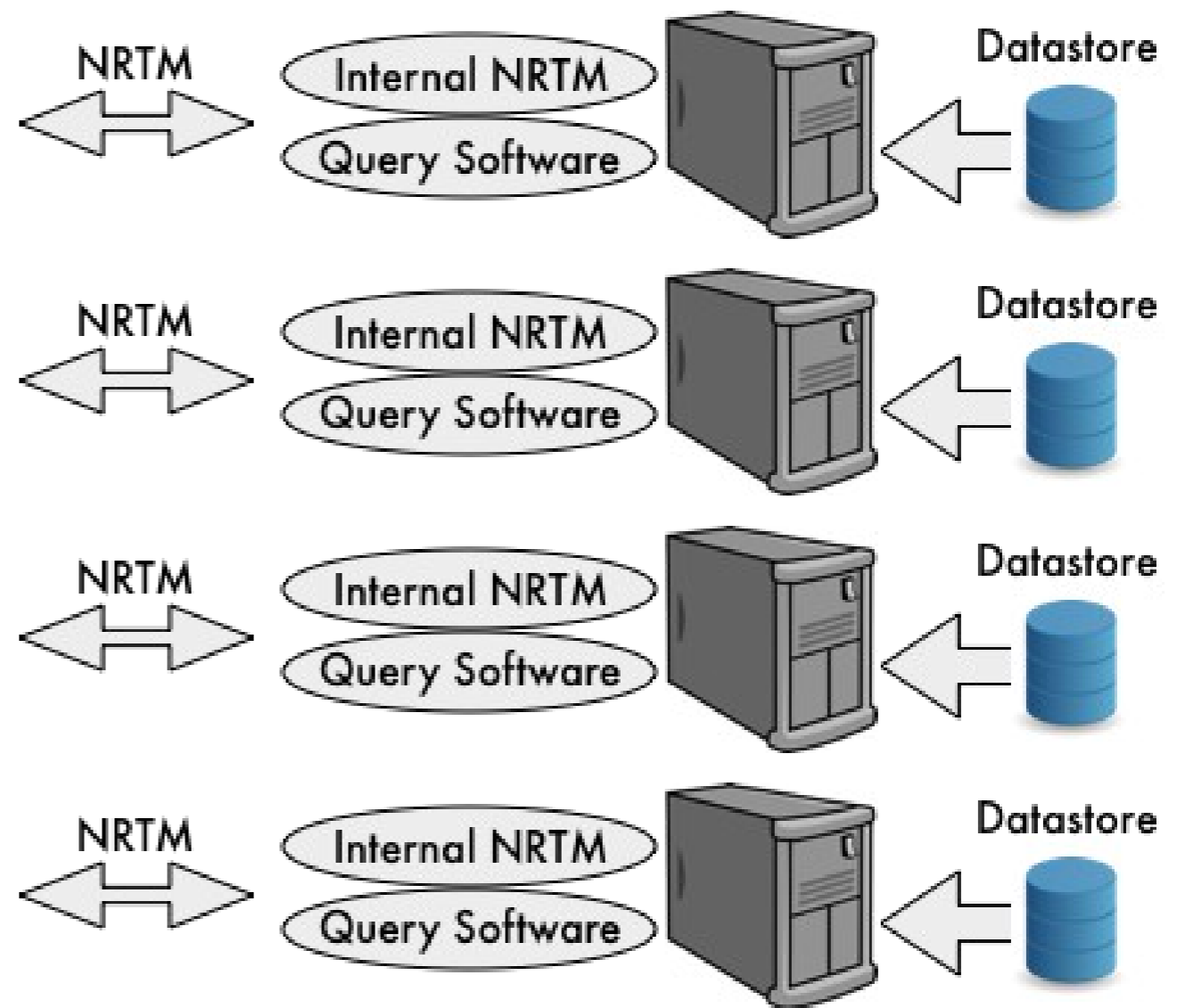
Redevelopment project - Queries

- Sane behaviour in sorting output, option-handling, simplifying complex behaviour

- Fast, simple and a lot more flexible
  - Maintainer hash change took our team about a week on legacy to implement test and deploy, same process took about 3 hours on new software

- Plan to provide code to other RIRs, open source, possibly combining efforts with other RIRs to add new features

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Example infrastructure change - BEFORE

Example infrastructure change - AFTER

Update Servers

Query Servers

Active   Backup

Datastore

Standard MySQL Replication

Datastore

Datastore

Datastore

Datastore

Query Software

Query Software

Query Software

Query Software
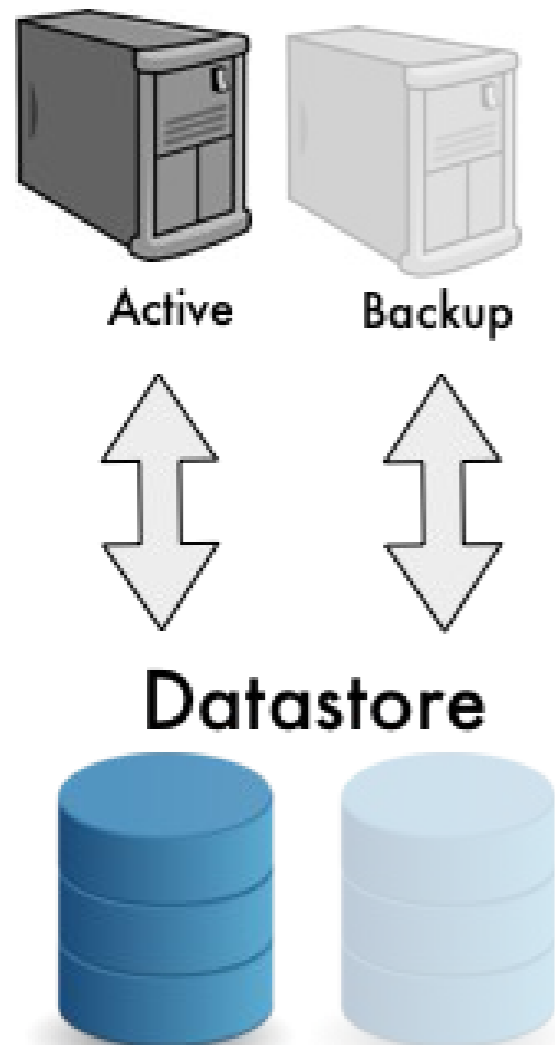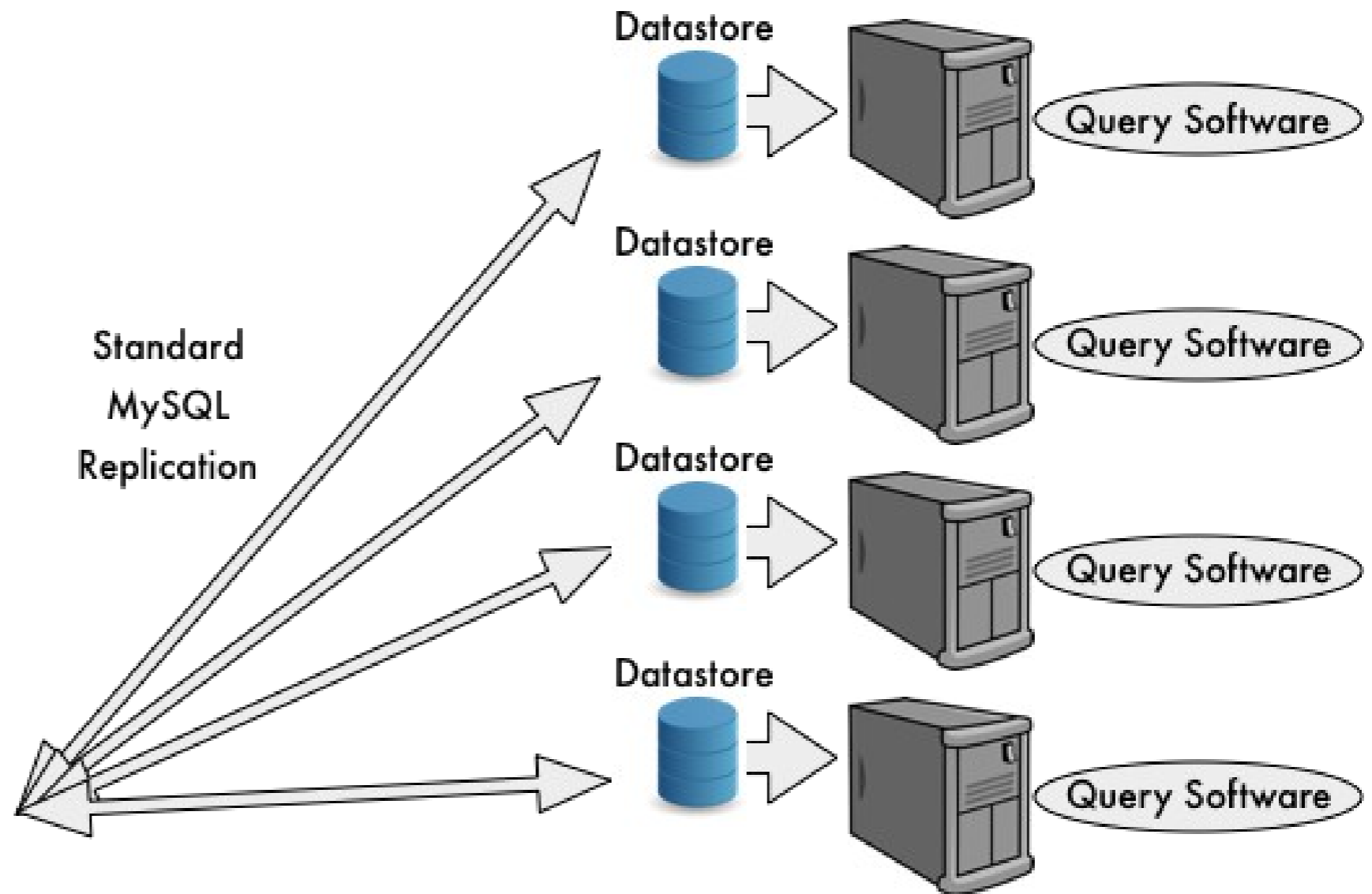
Standard based, Easy to maintain and upgrade approach

Redevelopment plan

- Now working on updates, I/O interfaces re-written:
  - Mail and Sync Updates for TEST DB are now received by new code, most content still passed to legacy code

- Now tackling each object type separately:
  - If the update is for a MNTNER, we process it completely with the new software
  - ROLE and PERSON are in testing and ORGANISATION is to follow

- Planning to implement all objects types by next RIPE Meeting

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Benefits

- Much cleaner code, easy to understand and maintain

- Concentrated modules for:
  - Authentication
  - Syntax Checking
  - Business Rules
  - Error Handling and Reporting
  - Data Presentation

Vision

Longer term plans and ideas for improving the RIPE Database

Ideas for Organisation clarification

- Think of a new object type, i.e. "resource-org:"
  - Maintained by NCC and only editable partially by users
  - All of the current organisation objects with type LIR will be migrated to this type
  - All of the organisations that got resources through our members and we have received contracts for -based on 2007-01- will be moved to this type

- Any resource that is or will be allocated/assigned by RIPE NCC should have a reference to one of these "resource-org:" objects

Ideas for Organisation clarification
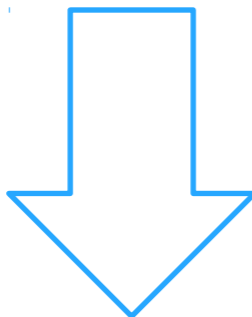
Current Structure

```
aut-num:        AS3333
as-name:        Example-AS
descr:          Example aut-num object

   ... Import/Export lines are removed ...

admin-c:        EX2-RIPE
tech-c:         EX1-RIPE
mnt-by:         RIPE-NCC-END-MNT
mnt-by:         EXAMPLE-GIS
source:         RIPE
```

Indirect Link
through admin,
tech or maintainer
contacts

Investigative or
guess work is
involved!

```
organisation:   ORG-EXAMPLE1-RIPE
org-name:       Example resource organisation
org-type:       LIR
address:        RIPE NCC Singel 258 1016 AB
Amsterdam Netherlands
phone:          +31 20 535 4444
e-mail:         ncc@ripe.net
admin-c:        AP110-RIPE
admin-c:        CREW-RIPE
tech-c:         CREW-RIPE
notify:         hm-dbm-msgs@ripe.net
mnt-by:         RIPE-NCC-HM-MNT
source:         RIPE
```
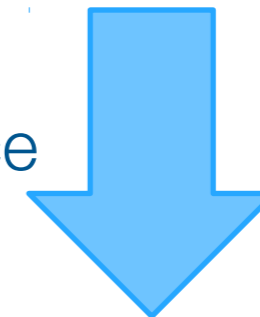
Proposed Structure

```
aut-num:        AS3333
as-name:        Example-AS
resource-org:   ORG-EXAMPLE1-RIPE
descr:          Example aut-num object

   ... Import/Export lines are removed ...

admin-c:        EX2-RIPE
tech-c:         EX1-RIPE
mnt-by:         RIPE-NCC-END-MNT
mnt-by:         EXAMPLE-GIS
source:         RIPE
```

Direct Link
to Resource
Holder

```
resource-org:   ORG-EXAMPLE1-RIPE
org-name:       Example resource organisation
org-type:       LIR
address:        RIPE NCC Singel 258 1016 AB
Amsterdam Netherlands
phone:          +31 20 535 4444
e-mail:         ncc@ripe.net
admin-c:        AP110-RIPE
admin-c:        CREW-RIPE
tech-c:         CREW-RIPE
notify:         hm-dbm-msgs@ripe.net
mnt-by:         RIPE-NCC-HM-MNT
source:         RIPE
```

Ideas for Organisation clarification

- Will give proper reference to an organisation for all assignments

- It will add clarity on queries, we can distinctively display what NCC has documentation for and what is user's entered data

- Will remove dependency on "description:" field

- Will solve issues with naming (Trademarks, etc.)

- Will pave the way for PI resource management as well as NCC and User quality audits

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Data Clean up

- After completing redevelopment of update software we will initiate a data clean up campaign

- We will start by picking object types one by one, proposing plans for that object type (including changes to syntax, business rules and existing data clean up) and will ask community for input, after that we will implement the changes and contact object maintainers where necessary

- Pre-set time frame for each object type

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Data Clean up

- For example:
  - Route object business rule changes
  - Aut-num structure change
  - Maintainer improvements
  - Any object not conforming to current syntax or business rules

- Finally we will initiate a new effort to look into the overall relation of different object types

Authentication review

- We want to review authentication process
  - Will add RIPE NCC's existing SSO functionality
  - Will improve flexibility and accountability
  - Will simplify multi layer authorisation
  - Will be backward compatible

- Will send a proposal to the community for review

Client tools and developer's area

- We would like to develop some modern client tools and provide them to the community, will start requirement gathering around next RIPE Meeting

- There is a developer's area on the RIPE website
  - http://www.ripe.net/developers

- Lots of interesting and useful data points and a lot of possibilities to connect the dots!

Geo-Location current status and stats

- Functionality introduced just before RIPE 64
  - As community discussed in RIPE 63, we have implemented only the core functionality
  - Lots of possibilities for further integration with RIPE NCC Tools and new query methods and for promoting this in our service region

- As of 19th September 2012
  - Out of 3,694,101 inetnum objects, 366 have geoloc:
  - Out of 105,155 inet6num objects, 5 have geoloc:

Action Items

Denis Walker
Database Business Analyst, RIPE NCC

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Action Items Open List

Two action items from RIPE 64

All completed

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AP57.2: Follow-up on domain: clean up

- Forward Domain clean up was finished before RIPE 64

- Some attributes became irrelevant:
  - sub-dom:, dom-net:, mnt-lower:, refer:

- They are not part of DOMAIN: syntax anymore
  - Not accepted through any update method
  - Existing data has been cleaned up

- Proposal to DNS WG to make nserver: required for reverse delegations

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AP64.1: Hiding maintainer md5 hash

- At RIPE 64 it was proposed and agreed that instead of hiding all auth: lines, we only filter out the hashes

- Thanks to new code, the change was implemented and went to production in the week after RIPE 64

- Still some issues, will address them during the proposed RIPE Database authentication review

Questions?