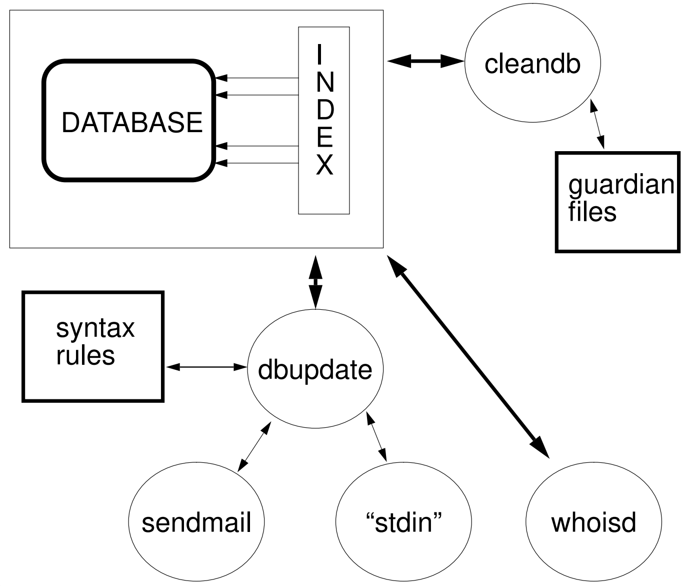
Database SW Details

- ❍ design overview
- ❍ update mechanism
- ❍ syntax checks
- ❍ cleanup procedure
- ❍ guarded attributes
- ❍ examples
- ❍ the near future



Update Mechanism

- ❍ on the fly
  - ❍ database is locked/unlocked
  - ❍ changed/new data is appended
  - ❍ old data is made obsolete
  - ❍ index in updated (old out, new in)
  - ❍ cleaned up once a day
- ❍ various servers work on the same database
  - ❍ whoisd immediately picks up changes
  - ❍ multiple updates at the same time (locking)
  - ❍ no updates during cleanup
- ❍ all updates+acknowledgements logged
- ❍ "LONGACK" in Subject: gives verbose output

Syntax Checks

1. object definition check
   - ❍ check object type
   - ❍ check for unknown/mandatory attributes
2. syntax check
   - ❍ values per attribute
   - ❍ strong syntax enforcement
   - ❍ need guidance from this group on syntax
   - ❍ common errors corrected on the fly
3. update check (old vs. new object)
   - ❍ reset guarded attributes if necessary
   - ❍ check changed dates
   - ❍ in future some more heuristics

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Cleanup Procedure

- remove obsolete information
- add guarded attributes
- re-index
- takes ~ 30 minutes currently (5.6M database)
- database locked during whole period
- whois server still answers of course
- runs automatically at 6 AM currently
- keeps last 7 copies of the database
- cleans up all logs and stuff

- set up to move back fast to previous database

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Guarded Attributes

- Guarded attributes ?
  - attributes that cannot be changed through normal update procedure
  - objects that need such attribute are specified in files at NCC maintained by guardian
  - ONLY guardian has change control on these values
  - changes sent in through normal update procedure will be reset to guarded values

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Guarded Attributes

- added once a day to DB at cleanup time
- remain unchanged for that whole day
- network blocks are split
  - split if guardian values demand so
  - split into largest sub-blocks possible
  - notification sent to “last changed” email with Cc: to NCC
  - no reverse split (i.e. aggregation)

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Examples

Guarded attributes

- suppose aut-sys is guarded
- net 192.87.45.0 has guarded value AS1104

1. update sent in with aut-sys: AS1104
   - no warning/error, OK
2. update sent in without aut-sys attribute
   - aut-sys: AS1104 preserved in DB
   - warning generated to tell you
3. update sent in with aut-sys: AS786
   - aut-sys: AS1104 preserved in DB
   - warning generated to tell you

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E x a m p l e s

Acknowledgement mails

```
To: Nandor Horvath <horvath@sztaki.hu>
From: RIPE Database Management <ripe-dbm@ripe.net>
Subject: Re: Sent to the bad address (assign) as
Reply-To: ripe-dbm@ripe.net

Your e-mail:

>   From: Nandor Horvath <horvath@sztaki.hu>
>   Subject: Sent to the bad address (assign) as
>   Date: Thu, 9 Sep 1993 16:49:47 +0200
>   Msg-Id: <199309091449.AA29964@sztaki.hu>

has been processed by the automatic update procedure at the RIPE
NCC.
Diagnostic output follows:


No error/warnings were found in your database update.
Congratulations.

Sincerely Yours,

RIPE Database Maintenance Department (Automatic Section)
```


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E x a m p l e s

Acknowledgement mails

```
Your e-mail:

>   From: Hostmaster@germany.eu.net
>   Subject: LONGACK Internet number assignments
>   Date: Thu, 09 Sep 1993 15:59:29 +0200
>   Msg-Id: <199309091359.PH00386@ns.Germany.EU.net>

has been processed by the automatic update procedure at the RIPE
NCC.
Diagnostic output follows:

Update OK: [inetnum] 193.99.144.0 - 193.99.145.0
Update OK: [person] Irene Heinen
Update OK: [person] Juergen Seeger


No error/warnings were found in your database update.
Congratulations.

Sincerely Yours,

RIPE Database Maintenance Department (Automatic Section)
```


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```
Diagnostic output follows:

Update FAILED: [inetnum] 193.115.4.0 - 193.115.5.0

inetnum: 193.115.4.0 - 193.115.5.0
netname: PLASMON
descr: Reflection Systems Ltd
descr: Saxon Way,
descr: Melbourn,
descr: Herts,
descr: SG8 6DN.
country: GB
admin-c: Mark Broadbent
tech-c: Mark Broadbent
connect: RIPE EU
changed: bmm@Britain.EU.net 930823
source: RIPE
*ERROR*: update is older than original

Update NOOP: [person] Mark Broadbent

Objects that just generated a WARNING have been updated as
shown.
Objects that generated an *ERROR* have NOT been updated as
requested.
Please re-submit corrected objects.
```