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Extensions to the ripe-dbase Whois software

Managing your IP Addresses with the ripe-dbase Whois.

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Some basic facts:

- Project started in 2001

- Developed in almost all parts by Arnd Vehling

- Extension to the ripe-dbase software to enable the Whois DB to manage IP Addresses in relation to their usage

- Scripts to use those extension

- Scripts to synchronize the Whois DB with other official Whois repositories

- Available for IPv4

- IPv6 within the next months

- Published under the GPL

The following objects were added to the ripe-dbase software:

- `facility`
- `purpose`
- `range`
- `registry`
- `ticket`

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A sample `facility` object:

```
facility:       POP-MUC
address:        POP Munich
address:        Landsbergerstr. 155
registry:       eu.en
as-num:         AS1273
mnt-by:         LOCAL-DB-MNT
changed:        tcremer@de.cw.net 20040404
source:         EUCW
```

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Defines the facility where the addresses are used.

- `address:  POP Munich`
  `address:  Landsbergerstr.  155`
  Gives information about the physical location.

- `registry:  eu.en`
  Refers to the `reg-id` object.

- `as-num:  AS1273`
  Defines the ASN the address space is used in.

- Attribute `remedyref` can be used to refer to other DB systems like Remedy.

The *purpose object*

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An example of the `purpose` object:

```
purpose:        CUST-RANGE
descr:          LAN assignments for customers
mnt-by:         EUCW-DB-MNT
changed:        tcremer@de.cw.net 20040404
source:         EUCW
```

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Some additional attributes of the `purpose` object

- `purpose:  CUST-RANGE`
  For what to use the addresses.

- `descr:  LAN assignments for customers`
  Describes the kind of utilisation.

- Some more attributes, but they should be well known

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A sample `range` object:

```
range:        10.0.47.0 - 10.0.47.255
netname:      CW-INTERN-NET
registry:     eu.en
descr:        reserved for cust-ranges POP-MCR
country:      DE
status:       ASSIGNED PA
location:     POP-MUC
usedfor:      CUST-RANGE
preference:   128
mnt-by:       EUCW-DB-MNT
changed:      rotherh@de.cw.net 20040624
source:       EUCW
```

The meaning of some attributes:

- `range:   10.0.47.0 – 10.0.47.255`
  The range of IP addresses.

- `registry:   eu.en`
  Refers to the object defining the X-NCC-Regid information.

- `location:   POP-MCR`
  Refers to the location object.

- `usedfor:   CUST-RANGE`
  Reference to the `purpose` object.

- `preference:   128`
  Defines with which preference the addresses will be used.

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A sample `reg-id` object

```
reg-id:        eu.en
window:        22
descr:         Main CW X-NCC-Regid
as-num:        AS1273
mnt-by:        EUCW-DB-MNT
changed:       tcremer@de.cw.net 20050426
source:        EUCW
```

Some Attributes of the `reg-id` object

- `reg-id:  eu.en`
  defines the X-NCC-regid the address space is used in

- `window:  22`
  defines the Assignment Window size

- Other attributes are self explaining.

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A sample `ticket` object

```
ticket:        CW-0815
netname:       CW-CUSTOMER-NET
registry:      eu.en
size:          /25
descr:         IP request of customer
created:       13.01.04
formurl:       /home/ipadmin/documentation/customer-10.0.47.0s25
mnt-by:        CW-IPGNOC-MNT
changed:       tcremer@de.cw.net
source:        EUCW
```

Some attributes of the `ticket` object

- `ticket:  CW-0815`
  The ticket number in your ticketing system

- `size:  /25`
  The inetnum size the customer applied for.

- `created:  13.01.04`
  The assignment date

- `formurl:  /home/ipadmin/documentation/...`
  Where the IP request template (ripe-315) is stored

- Other attributes are the same as in other "official" objects

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What is it all good for?

- Dedicate IP addresses to location or regions

- Tag addresses for special purposes

- Control which addresses are preferred

- May be used to tag IP address ranges for specific company parts with reg-id objects.

- Connect assignment and request with `ticket` object

- Result: Better management of IP address space $\Rightarrow$ IPv4 Space preservation

The `inetnum` object is changed as well:

```
inetnum:        10.0.47.0 - 10.0.47.127
netname:        CW-CUSTOMER-NET
descr:          Our customer
comment:        Anystreet 17
comment:        2035 Someplace
country:        DE
admin-c:        GNOC4-RIPE
tech-c:         GNOC4-RIPE
assigned:       13.01.04
remarks:        NO-EXPORT
status:         ASSIGNED PA
mnt-by:         CW-EUROPE-GSOC
changed:        tcremer@de.cw.net 20040113
source:         EUCW
```

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What the new attributes are doing:

- `comment:   Anystreet 17`
  `comment:   2035 Someplace`
  Additional attribute to store internal information.

- `assigned:   13.01.04`
  The date of the assignment.

- `remarks:   NO-EXPORT`
  May have the value NO-EXPORT

- `registry` is the same as in `range` objects.

Work with IP addresses using `aisst`

- Acronym for *A*utomatic *I*P address *S*pace *S*election *T*ool

- Command line tool written in Perl.

- Simple Web interface available, needs to be extended

- GUI Development and close integration into existing ticket management or provisioning systems possible

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What `aisst` can do:

- Selects IP addresses from location and purpose.

- Lists free or assigned addresses or all assignments.

- Returns inetnum template for a given size

- If requested size isn't available, `aisst` is subnetting automatically.

- Can check for exceeding A/Ws

- Statistical functions.

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`aisst` can be used to display a range overview

```
bash$ aisst-ng -a EUCW -f POP-MCR -p CUST-RANGE -list
----------------------------------------------------------------
Address range                       total cidr  Network
----------------------------------------------------------------
10.0.47.0 - 10.0.47.15      16  /28   CW-CUSTOMER1-NET
10.0.47.16 - 10.0.47.23      8  /29   CW-CUSTOMER2-NET
10.0.47.24 - 10.0.47.31      8  /29   CW-CUSTOMER3-NET
10.0.47.32 - 10.0.47.39      8  /29   CW-CUSTOMER4-NET
10.0.47.40 - 10.0.47.47      8  /29   * * FREE * *
10.0.47.48 - 10.0.47.63     16  /28   * * FREE * *
10.0.47.64 - 10.0.47.95     32  /27   CW-CUSTOMER5-NET
10.0.47.96 - 10.0.47.127    32  /27   CW-CUSTOMER6-NET
10.0.47.128 - 10.0.47.255  128  /25   * * FREE * *
----------------------------------------------------------------
```

`aisst` can return a inetnum template

```
 bash$ aisst -a EUCW -f POP-MCR -p CUST-RANGE -size /28 \
-t CW-TESTING-NET ~/.inetnum

password:   [password]
inetnum:        10.0.47.48 - 10.0.47.63
netname:        CW-CUSTOMER-NET
comment:
[...]
status:         ASSIGNED PA
mnt-by:         CW-EUROPE-GSOC
assigned:
changed:        tcremer@de.cw.net
source:         EUCW
```

Samples of aisst's statistic functions

`aisst` can be used for simple statistical analysis.

```
bash$ aisst -a EUCW -f POP-MCR -p CUST-RANGE -rs
Range Statistics

Purpose        : CUST-RANGE
Location       : POP-MCR
Ranges         :       3
Total          :    1024
Free           :     592 (57.8%)
Used           :     432 (42.2%)

Range                         Total  Free          Used         Preference
-----------------------------------------------------------------------------
10.0.47.0 - 10.0.47.255  256    104 (40.8%)  151 (59.2%)  128
10.0.49.0 - 10.0.49.255  256    128 (50%)    128 (50%)    128
10.0.60.0 - 10.0.61.255  512    360 (70.3%)  152 (29.7%)  128
-----------------------------------------------------------------------------
```

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How synchronisation is done:

- Synchronisation by email or HTTP
- Uses NRTM to identify last synchronised object
- Workaround for NRTM "feature" with dummy person object
- For all Whois DBs basing on ripe-dbase software

Some other tools to ease daily business:

- Diff check (RIPE|APNIC) Whois $\Leftrightarrow$ C&W Whois

- Import person handles from other Whois DB

- `xchange` does an inverse query and changes given attributes

- `touchobj` updates a dummy person object

- `rhist` creates history for IP range/netname from log files

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Where we can be reached and where to get the software:

- Software, patch and documentation at ipadmin-software.eu.cw.net

- Included in the OpenPKG project at www.openpkg.org

- Comments and questions can be send to software@ipadm.eu.cw.net or av@nethead.de

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Questions?

Thank you!