

BIRD

Design, Features & Status

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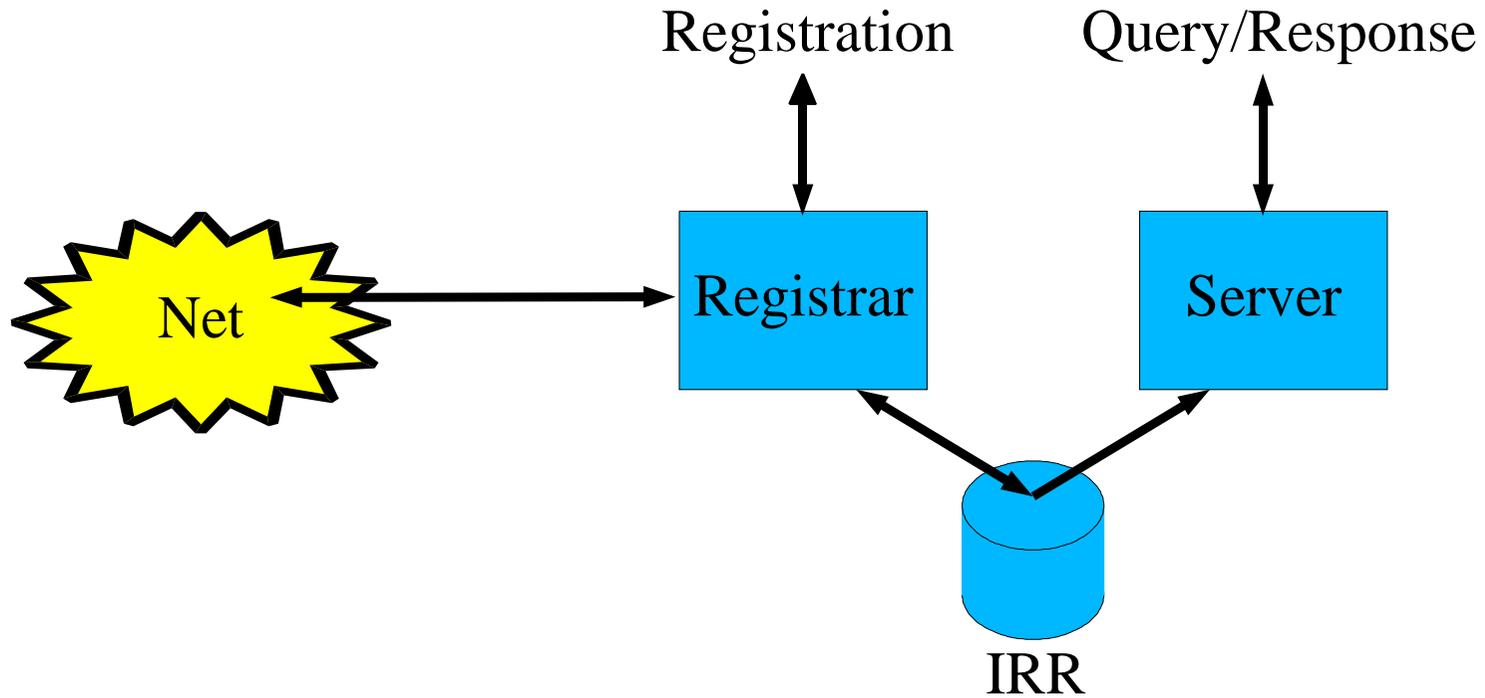
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Status

- Production release: end of summer
- Alpha release
 - available: <ftp://ftp.isi.edu/ra/BIRD>
 - bug reports and feature requests are sought

BIRD Software architecture



IRR Store: Berkeley DB version 2

- transaction support
 - recoverability
- shared cache between processes
 - configurable size
 - memory mapped files
- superior performance

| | Berkeley DB | Postgres | GNU DB |
|--------|-------------|----------|----------|
| Insert | 25 minutes | 42 hours | 16 hours |
| Search | 13 minutes | 20 hours | 3 hours |

Fast Server

- Non-blocking
- Non-forking
- Cache
- Good indexes
 - object attribute/key lookup
 - cross references

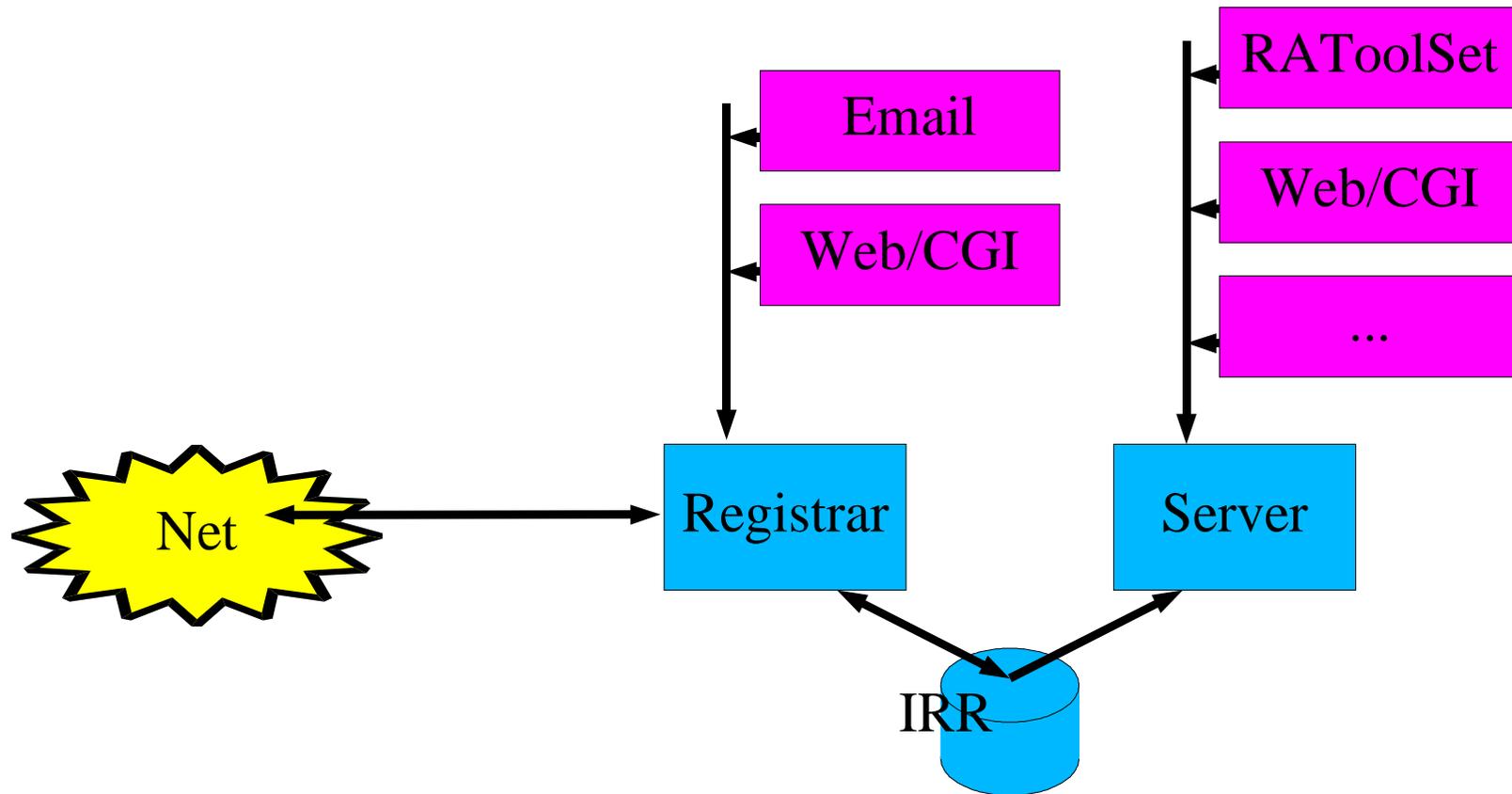
Server Query Language

- RIPE like interface for humans
 - whois AS226
 - whois randy
- Special queries for programs
 - whois "-bird aut-num@AS226"
 - whois "-bird route@origin@AS226"
 - whois "-bird *route@origin@AS226"

Registrar

- RPSL syntax & semantics
 - RFC 2622 complaint
- authentication & authorization
 - draft-ietf-rps-auth-04 & draft-rps-authen
- data replication
 - draft-ietf-rps-dist-02 complaint
 - unicast TCP flooding based
- performance
 - slow cold start (few hours)
 - no reindexing architecture

User interface tools (not available)



Configuration

- General options
 - ports, cache sizes, time-outs
- Repository configurations
 - local, remote, legacy repositories
- Class configurations

General Configuration

```
bird:                ISI
query-port:         3500
update-port:        3502
flood-port:         3505      # port for incoming flooding conns
cache-size:         8         # in mega bytes
max-clients:        8         # allowed max number of query clients
conn-timeout:       30        # in seconds for query clients
enforce-auth:       false     # obey rps-auth/dist rules
#flood-peer:        128.9.160.241:3505  # address:port
iana-pub-key:       this is iana's public key
+   -----BEGIN PGP PUBLIC KEY BLOCK-----
+   Version: PGP for Personal Privacy 5.0
+   ...
+   -----END PGP PUBLIC KEY BLOCK-----
ovrd-pub-key:       this is registry's override public key
+   -----BEGIN PGP PUBLIC KEY BLOCK-----
+   Version: PGP for Personal Privacy 5.0
+   ...
+   -----END PGP PUBLIC KEY BLOCK-----
```

Local Repository Configuration

```
local-repository: catRR  
activated: true  
remarks: this is your repository
```

- Can serve multiple local repositories
- marking of a local repository as private
 - no flooding
 - test/private data

Remote Repository Configuration

Remote-repository: isi

activated: true

remarks: this is a remote repository using rps-dist protocol

Remote-repository: default

activated: true

remarks: this enables auto remote registry discovery

Class configuration

```
class: as-set
attr:  as-set          mandatory, single, key,
      syntax(as_set_name)
attr:  members        optional, multiple,
      syntax(list of union as_number, as_set_name)
attr:  mbrs-by-ref    optional, multiple, lookup,
      syntax(list of rpsl_word)
attr:  descr          mandatory, single
attr:  mnt-by         mandatory, multiple, lookup,
      syntax(list of rpsl_word)
attr:  mnt-lower      optional, multiple,
      syntax(ListOfrpsl_word)
attr:  admin-c       mandatory, multiple, lookup
attr:  tech-c        mandatory, multiple, lookup
attr:  notify        optional, multiple,
      syntax(email)
attr:  remarks       optional, multiple
attr:  source        mandatory, single,
      syntax(rpsl_word)
attr:  changed       optional, multiple
attr:  deleted       optional, single, deleted
```