DNSCCM

Progress Report - Oct 2011

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What is DNSCCM?

- DNSCCM is software tool:

  DNS Configuration, Control & Monitoring

- An implementation of NSCP:

  Name Server Control Protocol

What is NSCP?

- Single cross platform, cross implementation control protocol for name servers
- Rationale? DNS - high availability is desirable

Genetic diversity | Operational complexity

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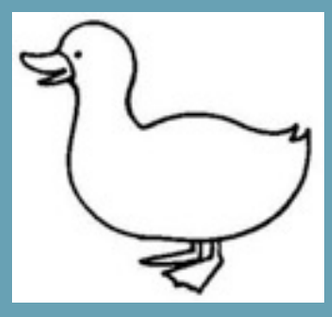
Mitigate this with NSCP



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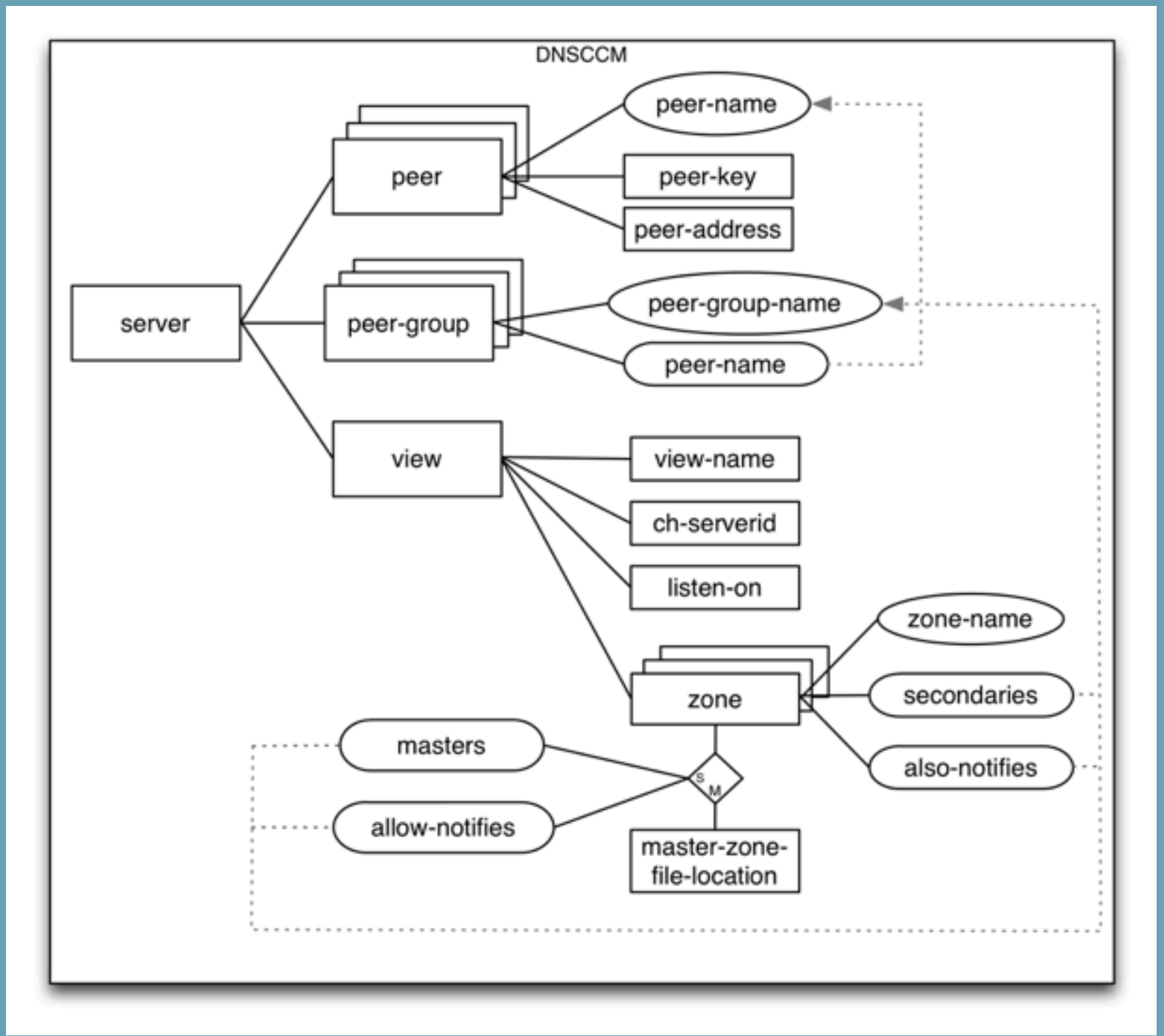
Status of NSCP?

- 2008: IETF DNSOP WG felt there was a clear need for a common DNS (SEC) name server management and control system.
- 2011: Requirements RFC6168
- 2011: Internet drafts for NSCP (currently version 2)
  - Data model defined in YANG
  - NETCONF

YANG data model

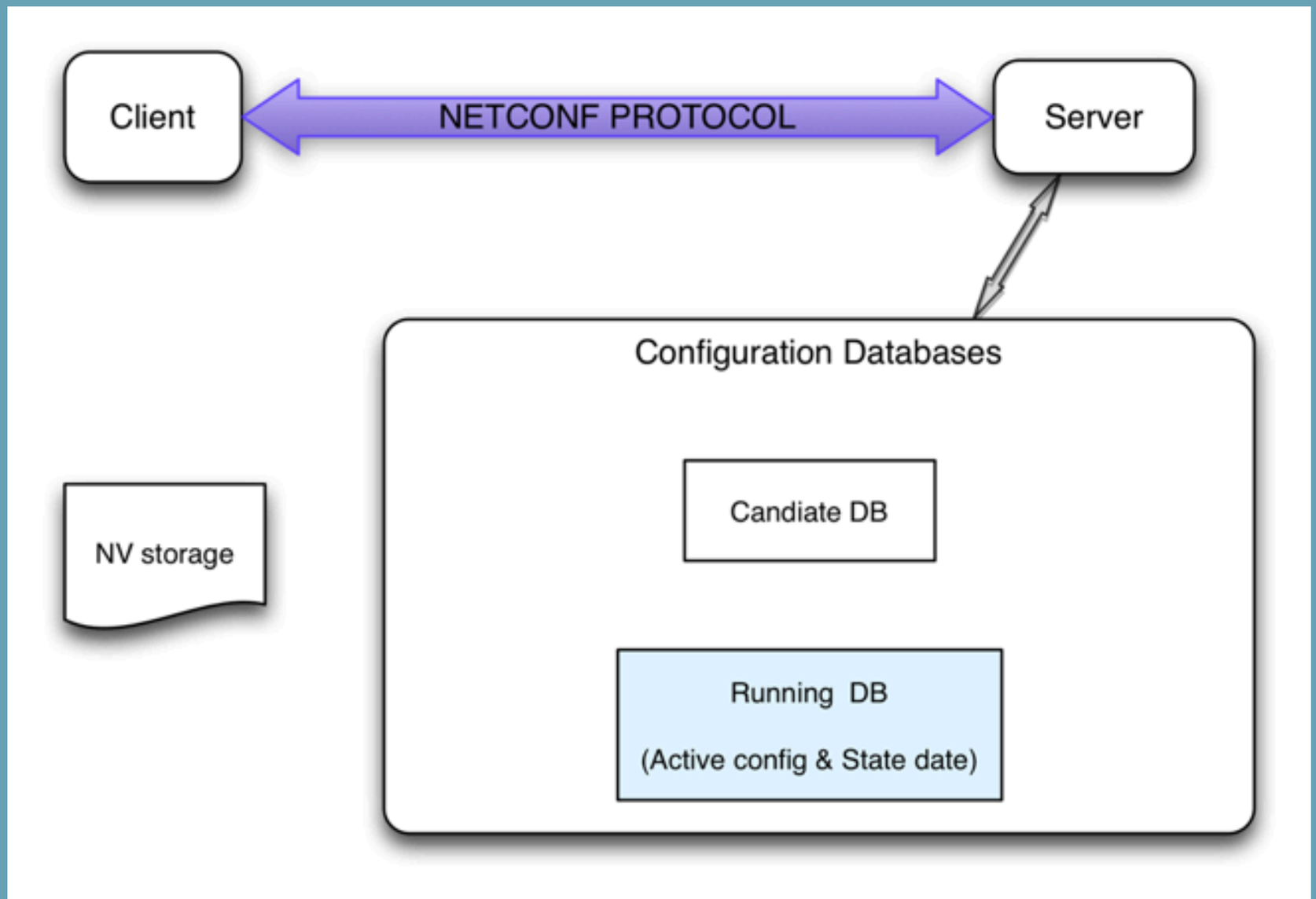
- DNSCCM
  - (NSCP V.3)

- rpc calls
  - server-status
  - stop-server
  - reload-server
  - restart-server
  - stop-server



NETCONF

- Secure (ssh)
- Readable (xml)
- Extensible



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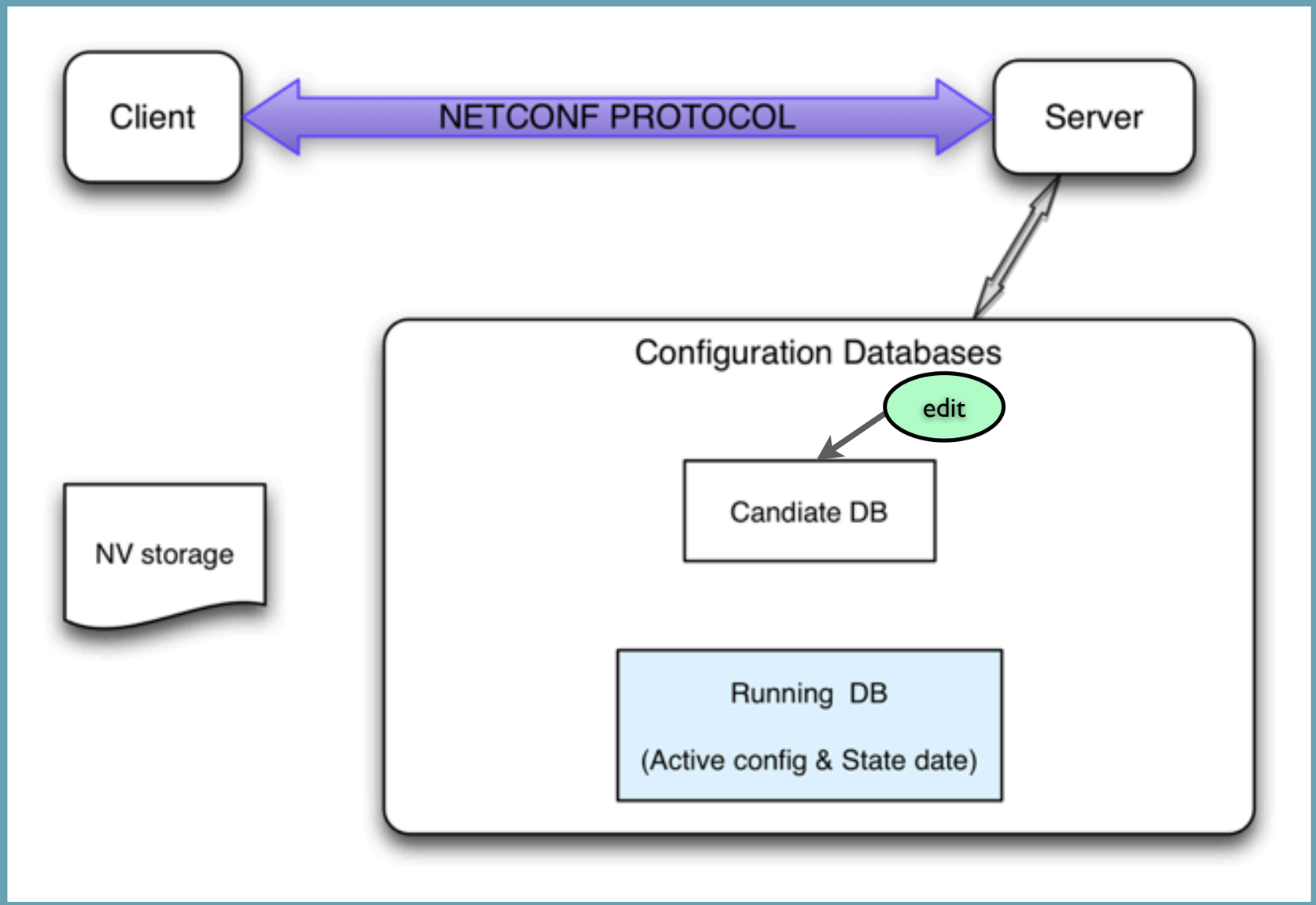

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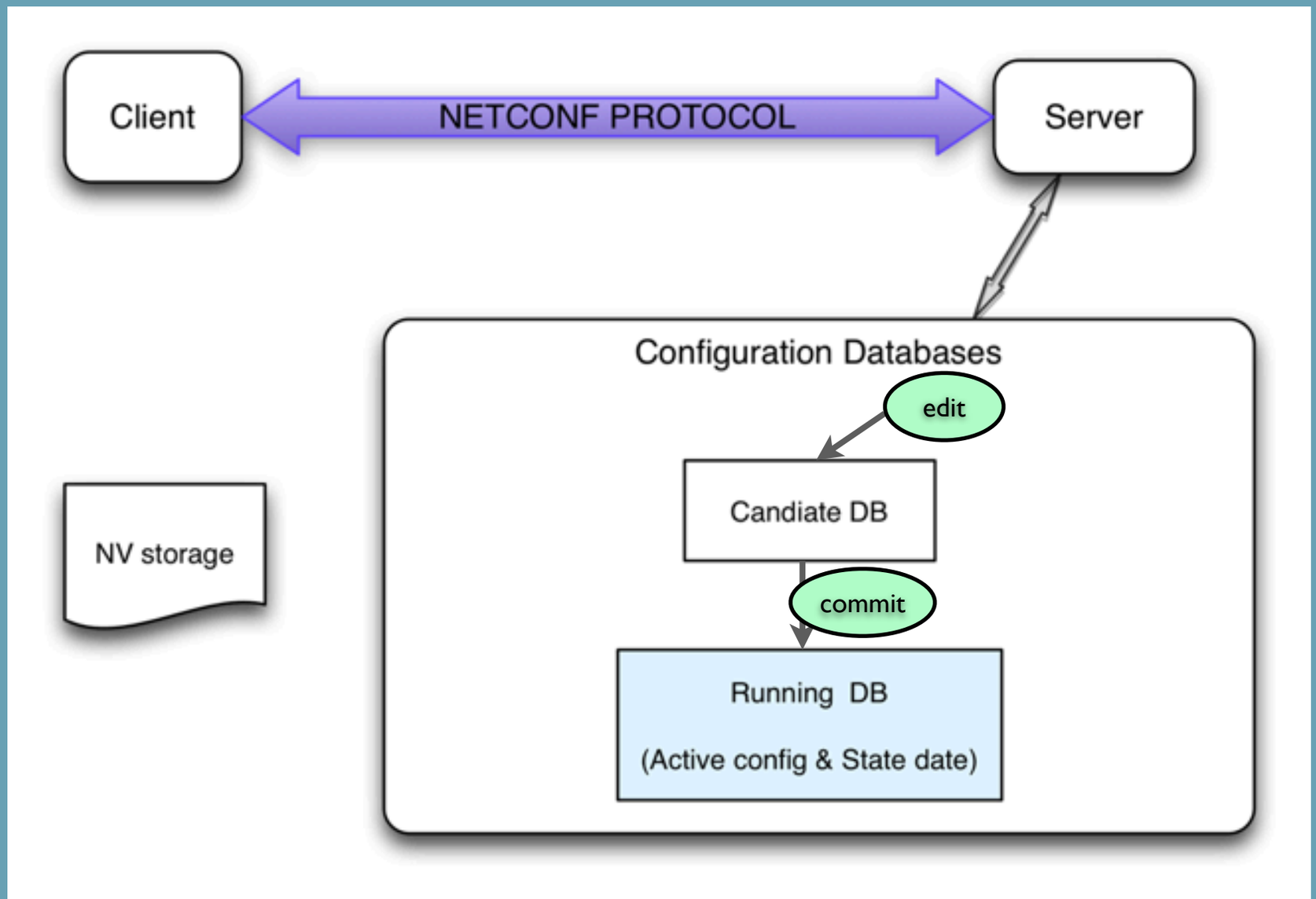

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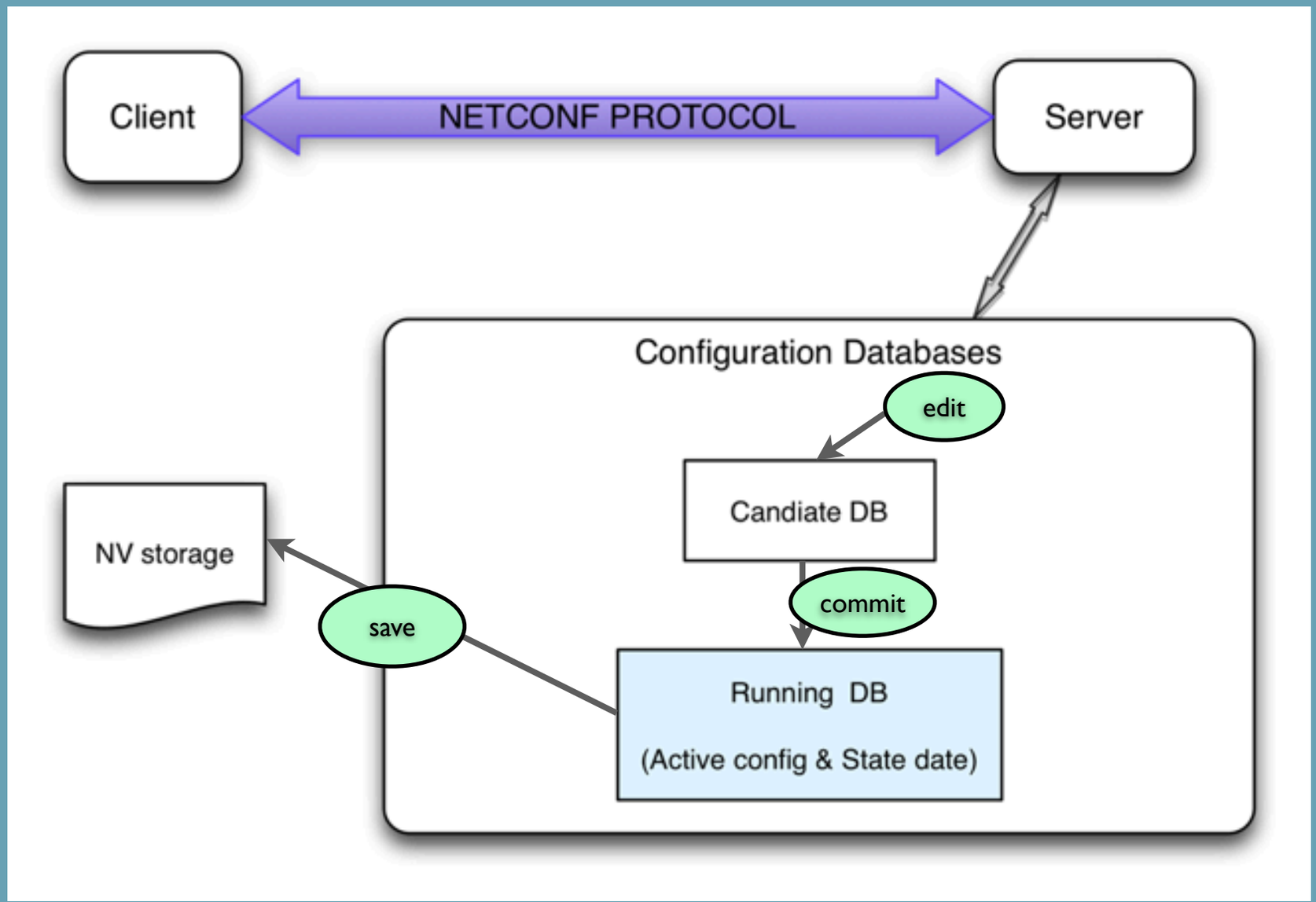
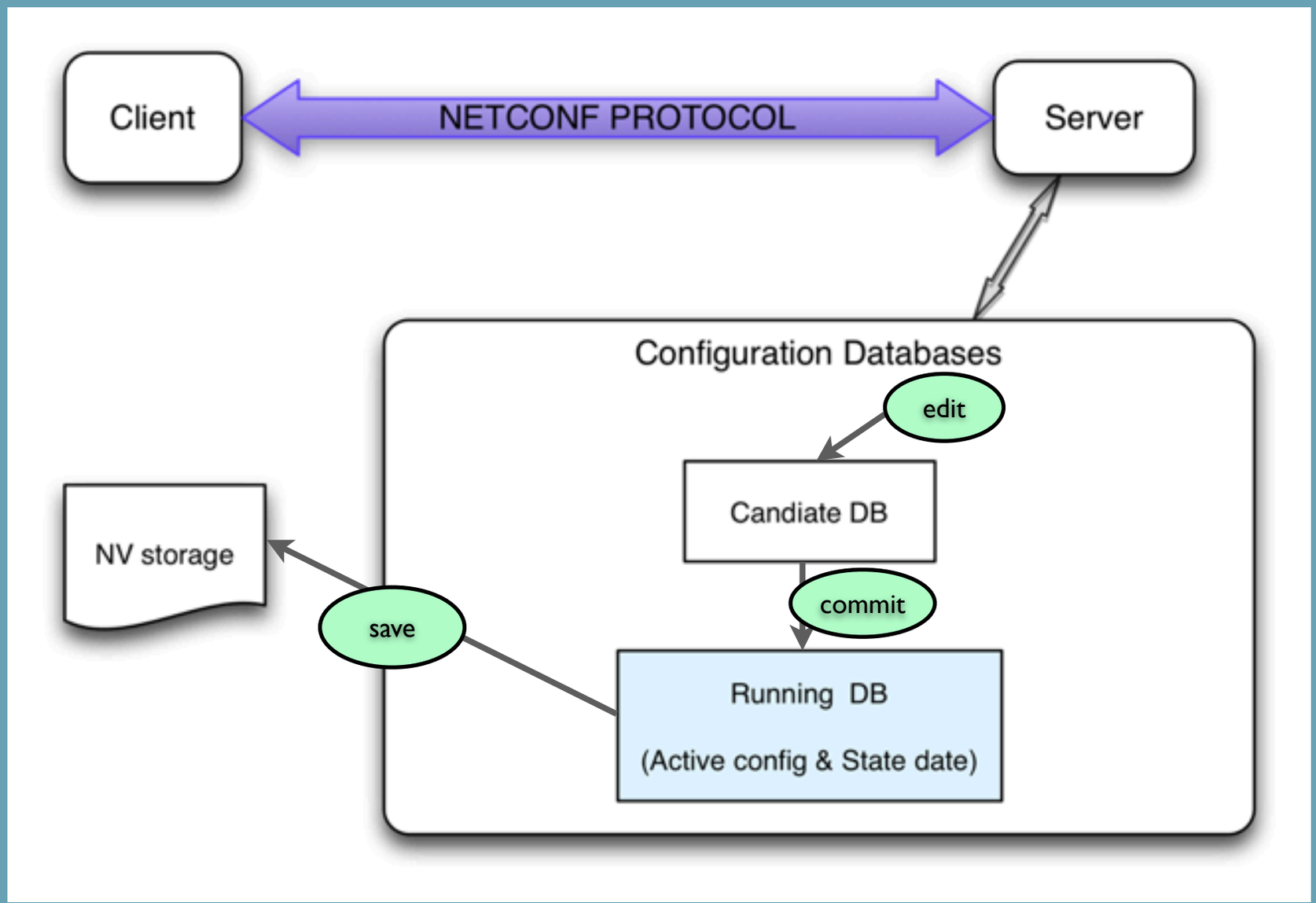


NETCONF

- Secure (ssh)
- Readable (xml)
- Extensible

- Database locking
- Confirm/commit
- Validation



What is DNSCCM?

- An implementation of NSCP
  - Developed by Sinodun with support of NLnet Foundation small project grant.

- NSCP is a slow burn
  - Build it and they will come.....

- Implementations pre-date NSCP
  - can this be made to work?

Status of DNSCCM

- Version 1.0
  - Built on Yuma tools
    - Open Source YANG/NETCONF toolkit
  - Authoritative only nameserver
  - NSD 3 and BIND 9
- Prototype

- Alpha release in Dec/Jan
- Version 2.0...

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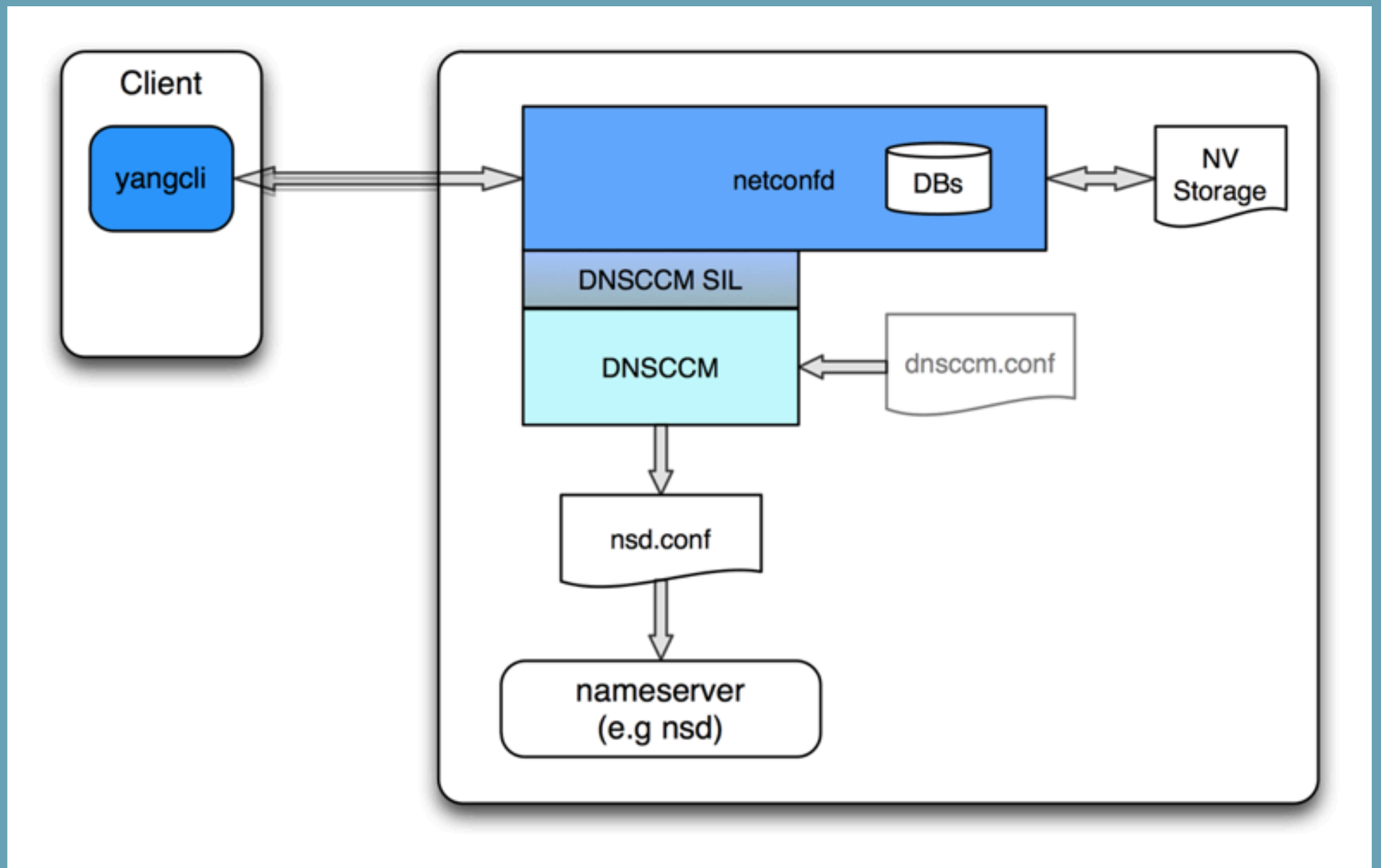
Architecture



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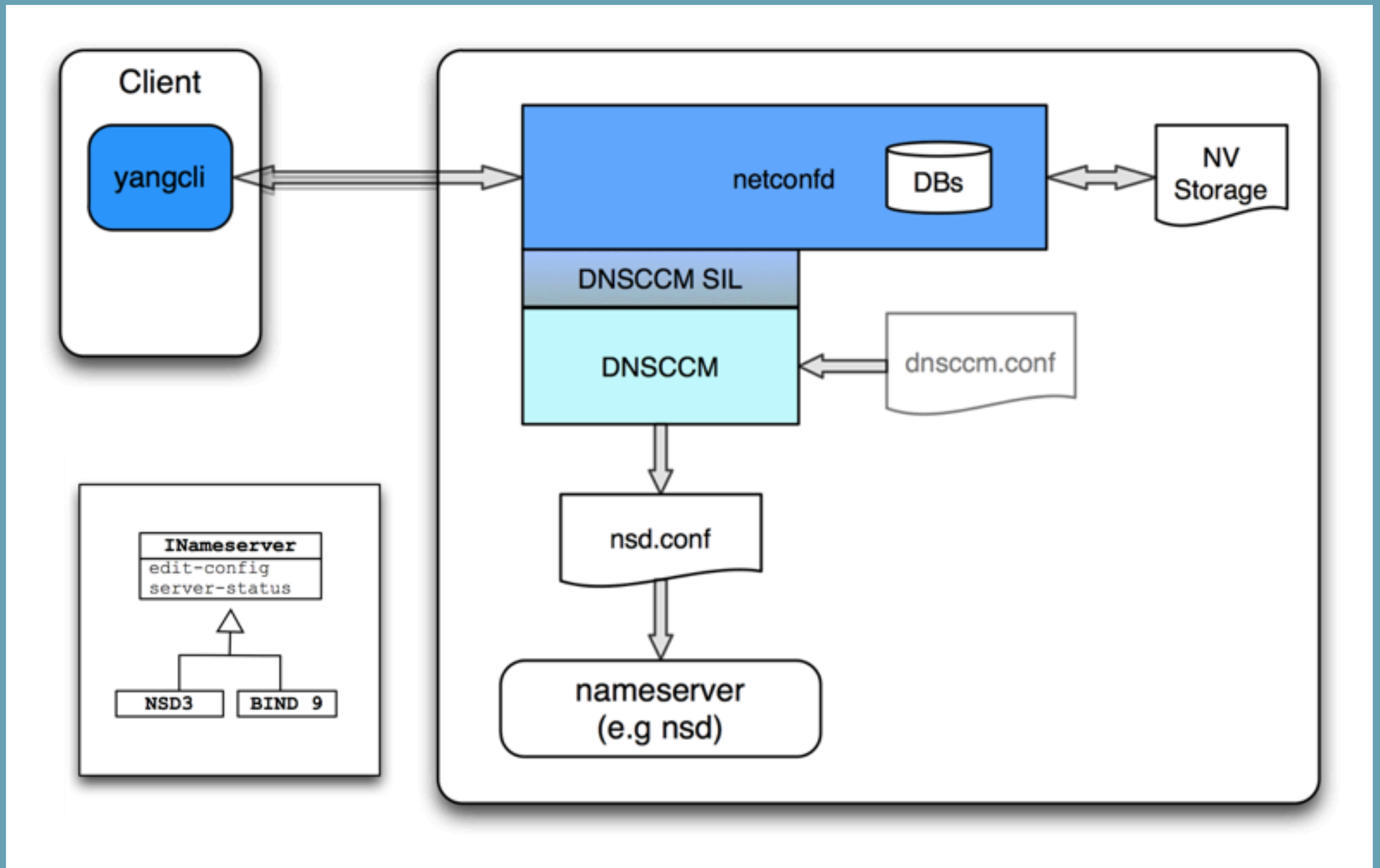

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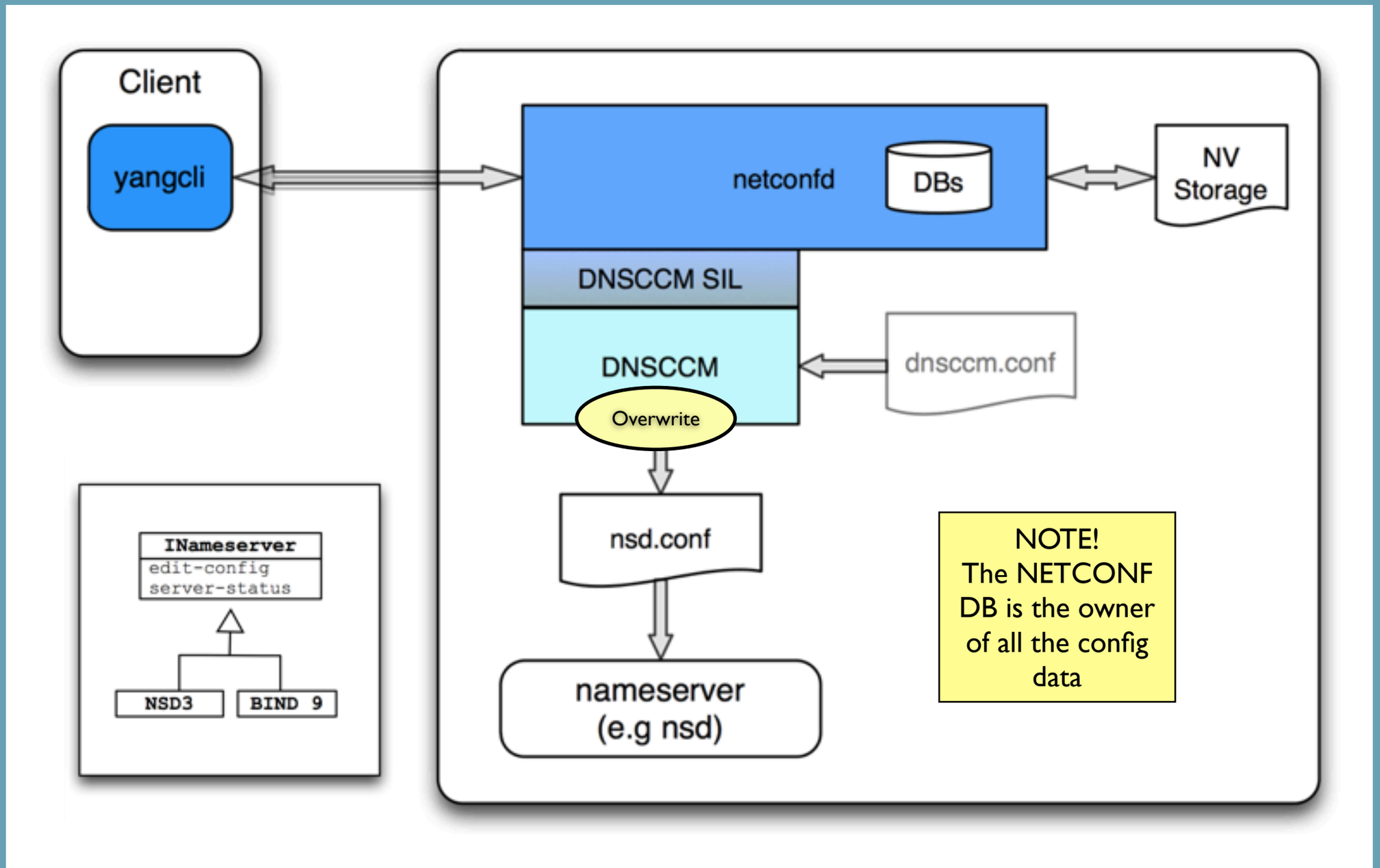

Demo set-up

Client

Master
(example.com)
[10.10.0.1]

Fred
(flintstones.example.com)
[NSD 3 -10.10.0.10]

Homer
(simpsons.example.com)
[BIND 9 - 10.10.0.11]

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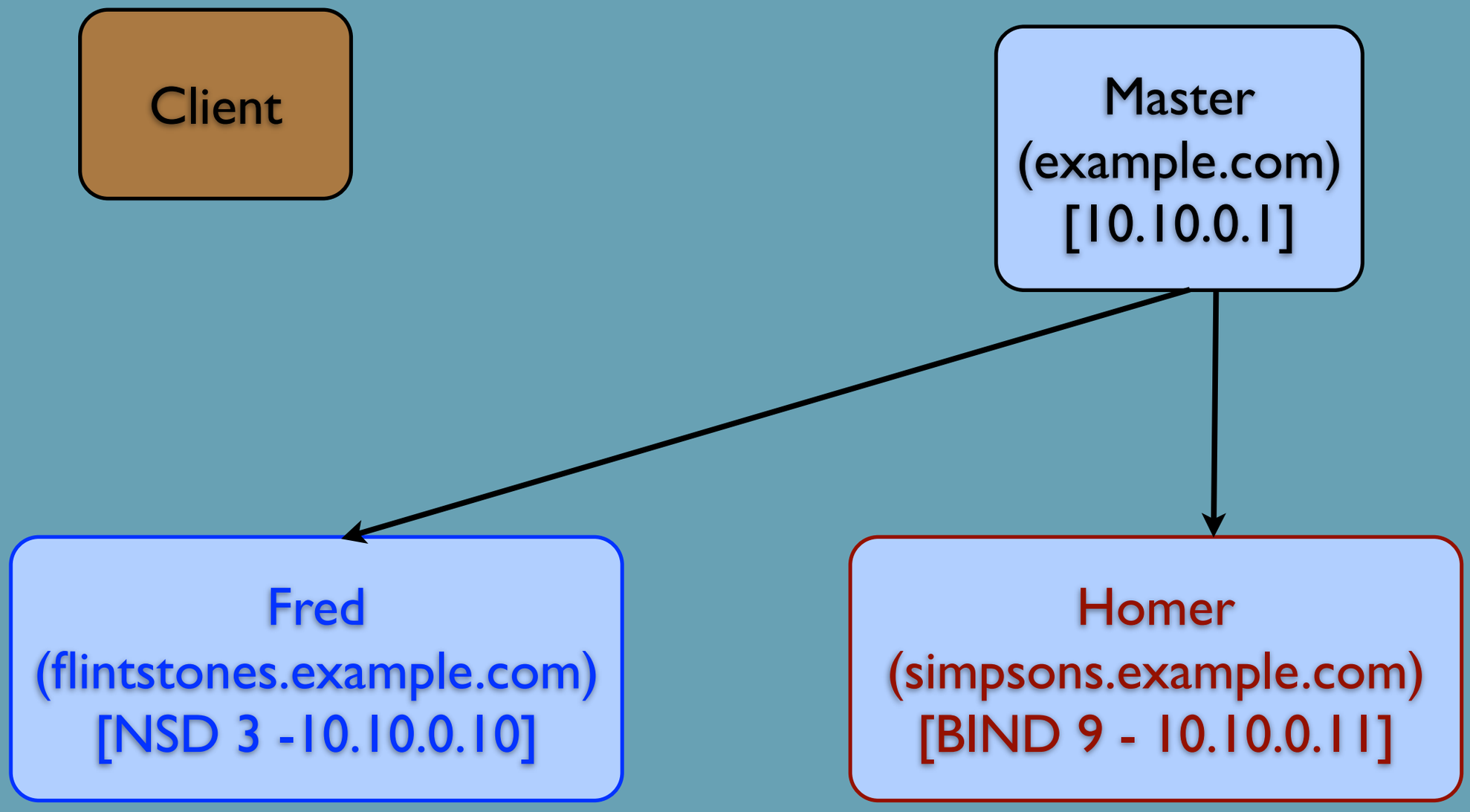
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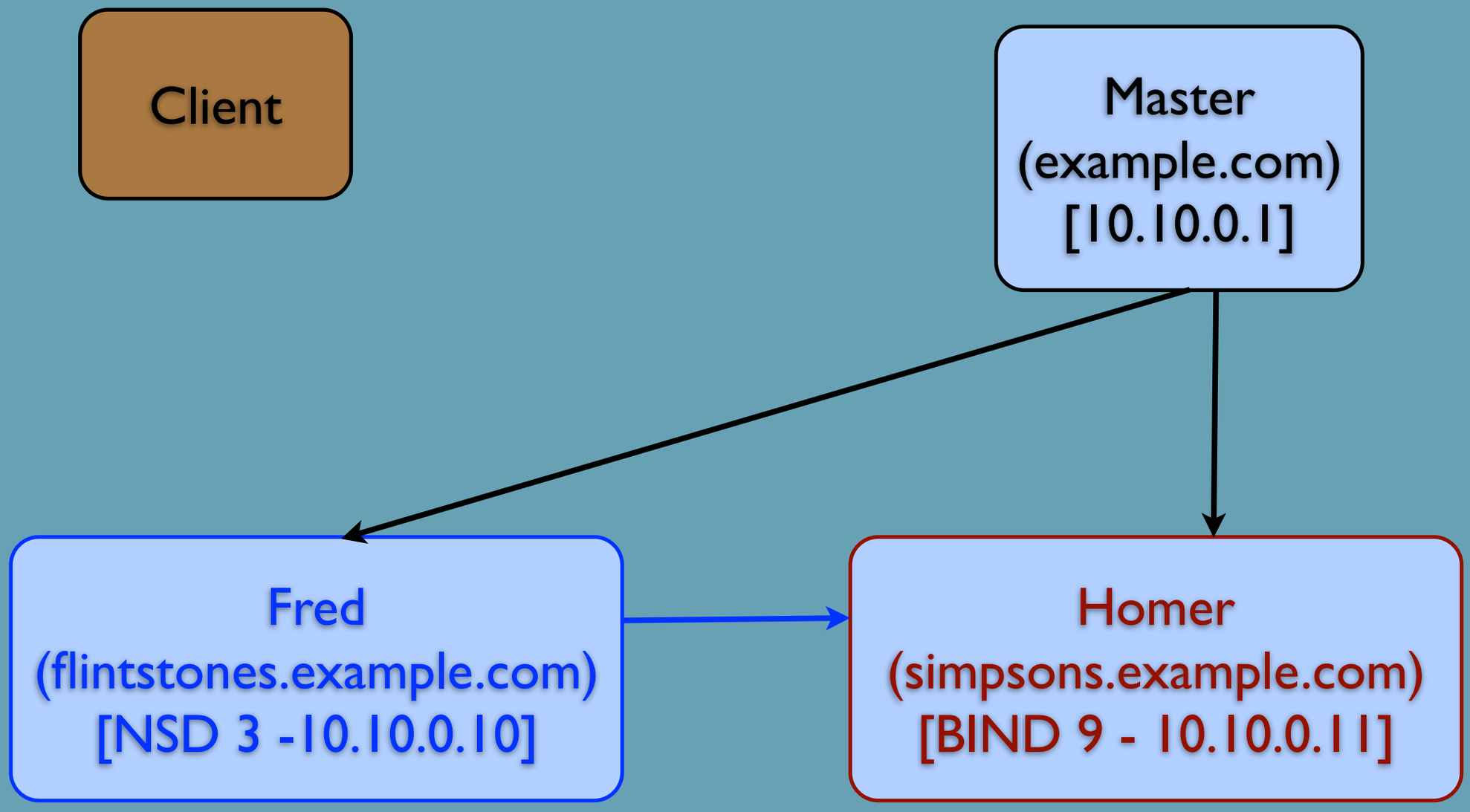
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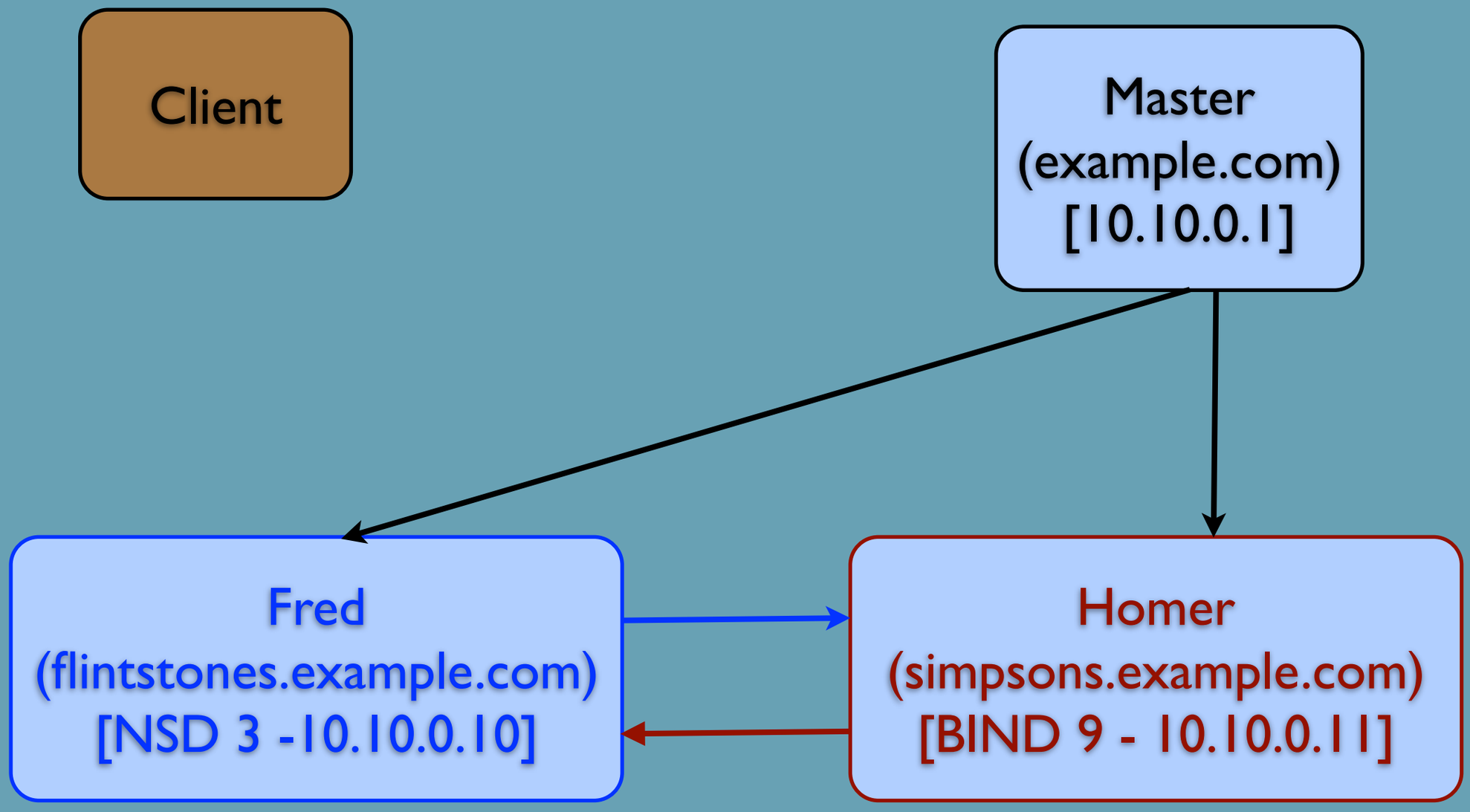
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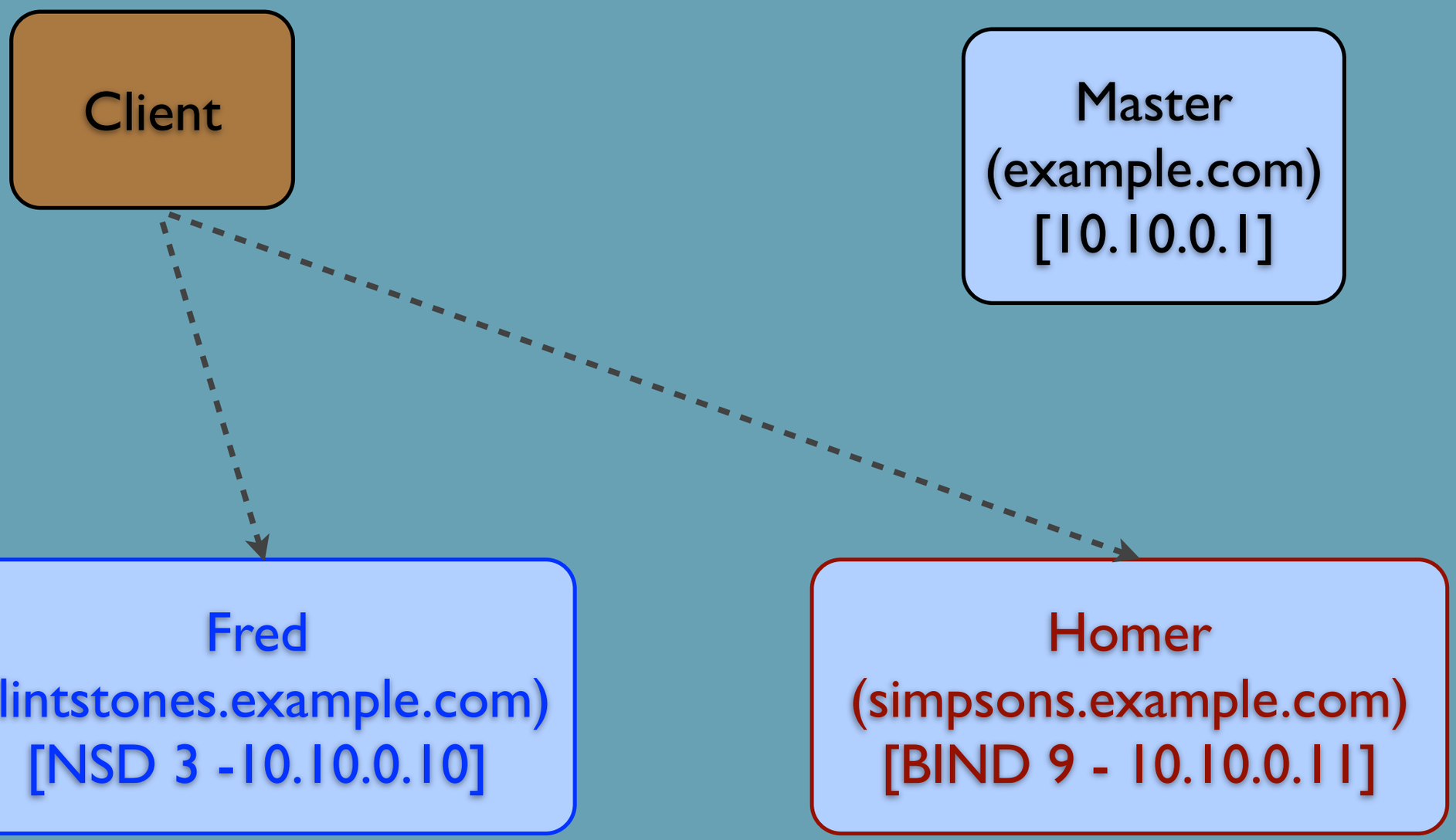
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Future work

- Client
  - Customise YANGCLI
  - GUI/Web front end (group management)
- Data model
  - Extend data model
  - Conformance
    - ‘Standard’ model (Features/Deviations)

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Future work

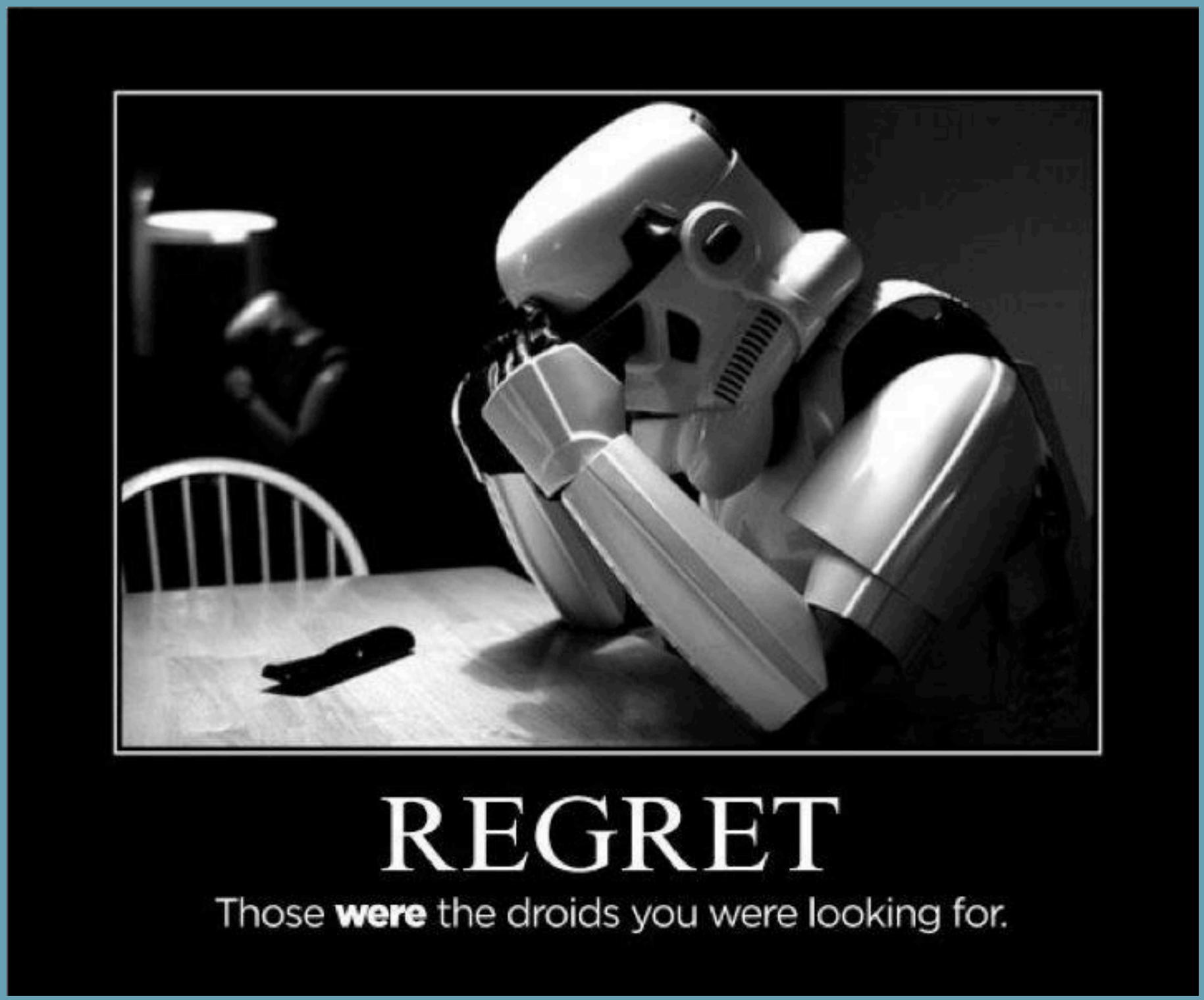
- DNSCCM implementation
  - Other nameservers (BIND 10)
  - User customization of rpc implemenation
    - this would allow, for example, the user to wrap the nameserver so that OSPF could be used for clustering

And Finally...

Appreciate feedback and requirements:

dnsccm.org

sara@sinodun.com



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