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Name Server Control Protocol

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Introduction

We want to be able to

- Deploy multiple different name server implementations

- Control them all via a standard common interface

- Access all the features of modern servers

- Have access to

  - Control (rndc, pdns_control, nsdc)

  - Configuration (named.conf, nsd.conf)

  - Monitoring

Requirements

We want the protocol to

- be extensible to allow implementers to add new objects and methods

- enable the operation of all major production name server implementations

  - authoritative and recursive

- be able to signal which operations are supported by the implementation being controlled

Requirements

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The requirements of this protocol

- do not require support for specific function in a name server implementation

- do not dictate what data can be returned by the name server especially in response to a command, but should flexible to allow any appropriate results

Design

Design choices were

- Format - SNMP, DNS, XML
  - Prefer XML as we are already working on a dns xml schema

- Transport - TCP, SOAP, XMLRPC …
  - Don't think we need much complexity

- Security
  - Secure the channel
  - Authenticate the user

Design

Aims

- One day we hope this will be integrated into name servers

- For now use an agent on each server to wrap the name server implementation

  - As a side effect this would allow the emulation of features that are not currently implemented.

  - For example

    - zone creation in BIND

Examples

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Example structure

- Control
  - Server
    - Start, stop, flush, set debug level
  - Zones
    - Refresh, Stop updates, send notifies

Examples

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Example structure

- Configuration
  - Server
    - PID file, Enable recursion, Enable DNSSEC …
  - Zone
    - Create and remove, Add and remove RR, Assign ACL …
  - Log
    - Create, format, define events …
  - Security
    - Create ACL, Generate DNSSEC Key, TSIG …

Status

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NSCP status

- We are currently writing the requirements based on.

  - A review of the capabilities of current implementations

  - Operational experience

  - A wish list of (good) ideas

- We will have an initial requirements and protocol draft ready for IETF 70.

- We are keen to work with others in this group and produce a control protocol that everyone can use.

  - Please let us know what you think.