So You Inherited a DNS Server…

DNS Best Practices from Day One
How did the DNS find you?

- Because I knew *nix
- No one else would
- It just sort of happened…
- voluntold
The Question

- What would you do if dropped into an existing organization to run their DNS?
First action, Recon!

- Actually, first action is freak out!
- 2nd action is caffeine, then deep breath and recon:

Any network or infrastructure diagrams available?
diagrams

authoritative 251 / 252

recursive 253

root (\'\.'), ftp, web 254

192.168.53.0/24

DHCP Pool 128 - 248

Static (via DHCP) 101, 102, 103 ...

Pick a nameserver, login!

- Running a current version of dns software?
- OS?
- How is dns service started on this box? Does this match the version currently running?
- Is there a nanny script in use?
- ntp?
named -V

% named -V
BIND 9.8.4-P2 built with '--prefix=/usr' '--infodir=/usr/share/info' '--mandir=/usr/share/man' '--enable-threads' '--enable-getifaddrs' '--disable-linux-caps' '--with-openssl=/usr' '--with-randomdev=/dev/random' '--without-idn' '--without-libxml2'
using OpenSSL version: OpenSSL 0.9.8zd-freebsd 8 Jan 2015
On to configuration

- Do the global options make sense?

- Basic security check:
  - TSIG secured zone transfers?
  - allow-transfer?
  - allow-query (is this an open resolver?)
Global options

options { directory "/etc/namedb/"; dnssec-enable yes; dnssec-validation yes; allow-recursion { none; }; allow-query { any; }; allow-transfer { none; }; notify no; key-directory "/etc/namedb/keys"; max-journal-size 32k; zone-statistics yes; listen-on { 192.168.53.251; }; listen-on-v6 { 2001:db8:100::251; }; notify-source 192.168.53.251; notify-source-v6 2001:db8:100::251;};
zone stanzas

zone "example.com" IN {
  file "example.com-zone";
  type slave;
  masters {
    192.168.53.4; 192.168.53.8;
  };
  notify no;
};
Is the logging stanza sane and actually occurring?

Check the config as well as the actual logs.

Have a look at the system logs.
logging stanza

logging {
    channel query_log {
        file "logs/query.log" versions 5 size 1M;
        severity info;
        print-time yes;
    }
    category queries {
        query_log;
    }
}
checkconf is your friend

$ named-checkconf -z
test.dnslab.org/IN: loaded serial 50 (DNSSEC signed)
**rndc**

- Is rndc configured?
- If not, ‘rndc-confgen –a’

- rndc status

- rndc notify zone
- rndc retransfer zone
Recon Repeat

- Repeat the prior Recon for all known nameservers!

- If diagrams were available, check to see if configs match stated functionality.
SOME FUN THINGS YOU OUGHT TO KNOW...
DNS personality disorders

- Clients are often happy even when servers aren’t configured well.

- A bit passive-aggressive... things are acceptable until they’re not.

- OCD, clients and resolvers are content to retry and retry and retry...
There are rules... RFCs

https://www.isc.org/community/community/rfc/dns/

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Less caffeine required...
DNS Resolution

Here is the address of www.example.com.

Local caching DNS server

www.example.com?
BACK TO YOUR NEW PREDICAMENT…
Authoritative specific

- Are zone transfers working?
- Use external tools to check service:
  - DNSViz
  - dnscheck.iis.se
  - ednscomp.isc.org (firewall check)
Recursive specific

- Perform queries against these servers via dig

  dig @192.168.53.53 www.example.com.

- Are they answering appropriately?

- Are they refusing appropriately?
Actions for Day 2 and beyond

- Meet with the following teams:
  - Provisioning: how fast for new servers?
  - Operations: how’s life?
  - Security: about those firewalls…
  - Monitoring: alerting on?, peak traffic?
  - Architecture: future plans?
  - Management: support?
Interconnectedness

- Get your boss to send you to DNS-OARC meeting(s)

- Join some lists:
  - dns-operations (DNS OARC)
  - nanog
  - etc
Questions
Thank You!

www.isc.org

info@isc.org