LISP-DDT XFR
draft-wiley-lisp-ddtxfer-01

gwiley@verisign.com <Glen Wiley>

mgibbs@verisign.com <Michael Gibbs>

What Problem?

- Currently few LISP-DDT nodes in service
- LISP-DDT root configuration ride has been a little bumpy
- How will the current approach scale in both depth of hierarchy, number of DDT nodes?

Current LISP-DDT Configuration

- Current LISP-DDT root configuration
  - Does this format scale to large data sets?
  - Does it scale to high node count?
  - Operationally robust?

- Standards for handling the file is one possible solution.

Current LISP-DDT Root Config

```
lisp ddt
lisp ddt child 158.38.1.91 instance-id 223
lisp ddt child 173.36.254.167 instance-id 223
lisp ddt child 158.38.1.91 instance-id 0 eid-prefix 153.16.0.0/16
lisp ddt child 173.36.254.167 instance-id 0 eid-prefix 153.16.0.0/16
lisp ddt child 158.38.1.91 instance-id 0 eid-prefix 2604:a800:1::/48
lisp ddt child 173.36.254.167 instance-id 0 eid-prefix 2604:a800:1::/48
lisp ddt child 158.38.1.91 instance-id 0 eid-prefix 2610:d0::/32
lisp ddt child 173.36.254.167 instance-id 0 eid-prefix 2610:d0::/32
lisp ddt authoritative-prefix *
```

World Peace!

- LISP-DDT XFR is offered as one possible solution
- draft-wiley-lisp-ddtxfr describes the protocol used to accomplish the transfer of the delegated portion of the LISP-DDT tree
- Modeled after DNS zone transfers

DNS

- DNS faced with similar problem
- DNS zone is a *portion* of the DNS tree
- AXFR = entire zone is transferred
- IXFR = deltas are transferred (based on SN)
- NOTIFY is used to advise name servers of changes to zone

Terminology

- LISP-DDT entry is a mapping between an Extended-EID prefix and an RLOC for a map server or DDT node
- LISP-DDT XFR server: device receiving XFR request
- LISP-DDT XFR client: device sending XFR request

Six easy pieces

- DDT nodes implement LISP-DDT XFR in order to exchange pieces of the DDT tree
- Transfers are as granular as the delegation of authority
- Serial number identifies a unique version of the delegated portion of the LISP-DDT tree

Six easy pieces (continued)

- Full transfer sends all DDT entries for the delegated portion of the tree
- Incremental transfer sends only DDT entries that have changed
- LISP-DDT XFR client may subscribe to LISP-DDT XFR server and be notified of changes to tree

Is IXFR harmful to your health?

- LISP-DDT XFR client tells LISP-DDT XFR server which SN it has
- LISP-DDT XFR server replies with a transfer that includes deltas between client SN and current SN
- OR server replies with a full transfer
- Deltas are optional for server – the server may choose to maintain as many (or as few) deltas as is operationally sensible

Next Steps

- Continue to collect data from ongoing LISP-DDT implementation
- Incorporate LISP-DDT SEC
- Reference implementation