LISP Update

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Agenda

• Spec Status
• Implementation Status
• Experiment Status
  - Some lessons learned
• Pilot Status
• What’s Next
Spec Status

• **Current Specs**
  - draft-farinacci-lisp-05.txt
  - draft-fuller-lisp-alt-02.txt
  - draft-lewis-lisp-interworking-00.txt

• **Inactive Specs**
  - draft-meyer-lisp-cons-03.txt
  - draft-lear-lisp-nerd-02.txt
  - draft-curran-lisp-emacs-00.txt

• **New Specs**
  - draft-brim-lisp-analysis-00.txt
  - draft-mathy-lisp-dht-00.txt
  - draft-iannone-openlisp-implementation-00.txt
  - draft-meyer-lisp-eid-block-00.txt
• Add more verbiage on MTU issues
  – Fragment before Encapsulate
    • When data + encap headers exceed architectural constant
• Add “More” bit to loc-reach-bits so there can be more than 32 RLOCs
<table>
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<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
<td>0 1 2 3 4 5 6 7 8 9</td>
</tr>
</tbody>
</table>

```
+-------------------------------+
| Version | IHL | Type of Service | Total Length |----------+
|---------|-----|----------------|--------------|----------+
|         |     |                |              |----------+
|         |     | Identification | Flags | Fragment Offset |----------+
|---------|-----|----------------|-------|----------------|----------+
|         |     | Source Routing Locator | | |----------+
|---------|-----|----------------|-------|----------------|----------+
|         |     | Source Port | Dest Port (4341) | |----------+
|---------|-----|------------|-----------------|----------+
|         |     | UDP length | UDP Checksum | |----------+
|---------|-----|------------|---------------|----------+
| M       |     | Locator Reach Bits | | |----------+
|---------|-----|----------------|-------|----------------|----------+
|         |     | Nonce | | |----------+
|---------|-----|------------|-----------------|----------+
|         |     | Source Routing Locator | | |----------+
|---------|-----|----------------|-------|----------------|----------+
|         |     | Source EID | | |----------+
|---------|-----|------------|-----------------|----------+
|         |     | Destination EID | | |----------+
|---------|-----|---------------|-----------------|----------+
|         |     | Destination EID | | |----------+
```

**Source Routing Locator**

**Destination Routing Locator**

** UDP **

** LISP **

** IH **
draft-lear-lisp-nerd-03.txt

- Use domain name for database name
  - Was URN
- Clarify use of X.509 subject
- Open questions moved to section 9
Spec Status

- Plans to:
  - Update LISP-ALT spec
  - Update Interworking spec
  - Write LISP-Multicast spec
  - Making final updates of LISP-NERD spec
Implementation Status

• Added features to prototype
  - Send Data Probe and Map-Request on LAT
  - Low OpEx xTR (no BGP)
  - Non-LISP site detection via LAT
  - Use IGP and admin-down indicators to detect other xTRs down in site
  - Support for
    • draft-lewis-lisp-interworking-00.txt
Experiment Status

- LISP-ALT router that gets Map-Request shouldn’t reply for its site
- Loc-reach-bits of 0 can source quench DOSing host at source site
- Found a mechanism to update mapping changes
- Need negative Map-Reply from LISP-ALT routers
- Need ITR to replicate “above and below” for corner cases - only needed if Data Probing
Experiment Status

- Can implement shortest path to sub EID-prefix by changing priorities
  - Locators included in all Map-Replies
  - Modify priority based on source of Map-Request
Legend:
LISP Sites -> Green (and EIDs)
non-LISP Sites -> Red (and RLOCs)

Local/Uncoordinated Solution
Interworking Experiment

Infrastructure Solution

Legend:
- LISP Sites -> Green (and EIDs)
- non-LISP Sites -> Red (and RLOCs)
- xTR

LISP Update
IRTF Philly March 2008
Slide 12
Pilot Status

• We have started shipping some units
  – To people who have committed time to the project
• Planning to build-out a dual-stack LISP-ALT infrastructure
• Hope to test multiple implementations
• Will report on Pilot at next IETF
What’s Next

• Run multiple multi-AF applications on new pilot testbed
• Consider LISP-DHT
• Release OpenLISP
• Interoperability testing prototype with OpenLISP
• Implement:
  - draft-farinacci-lisp-multicast-00.txt
• We have requested a LISP BOF
LISP - the language

LISP IS OVER HALF A CENTURY OLD AND IT STILL HAS THIS PERFECT, TIMELESS AIR ABOUT IT.

I WONDER IF THE CYCLES WILL CONTINUE FOREVER.

A FEW CODERS FROM EACH NEW GENERATION RE-DISCOVERING THE LISP ARTS.

THESE ARE YOUR FATHER'S PARENTHESES

ELEGANT WEAPONS FOR A MORE... CIVILIZED AGE.

LISP - the protocol

(IP (UDP (LISP (IP (UDP (LISP ())))))

(× - ))