

LISP Impact

draft-saucez-lisp-impact-07

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Purpose of the draft

- Describe what problems LISP intends to address
- Explain the impact of employing LISP
 - i.e., positive/negative effects of LISP design
- Show how LISP goes beyond routing scaling concerns

A description of the impacts of LISP: This document will describe the problems that LISP is intended to address and the impacts that employing LISP has. While the work on LISP was initiated by Internet routing scaling concerns, there has also been an interest on improved solutions to a number of different problems, such as traffic engineering. This document should describe problem areas (such as scaling or traffic engineer) where LISP is expected to have a positive effect, as well as any tradeoffs that are caused by LISP's design.

LISP for scaling the Internet

- Scaling as stub AS prefixes are not propagated in the DFZ
 - [QldLB07] shows that LISP effectively reduces the size of the DFZ
 - [IB07, KIF11, S11] show that in practice TTL-based EID-to-RLOC caches are small (<16MB)
 - [CCD12] shows that the EID-to-RLOC cache miss rate is function of the traffic distribution, not the number of users
 - [CDLC] shows that miss rate is independent of cache size in case of scanning attack

Beyond scaling the Internet

- LISP as a mean to achieve:
 - Inter-domain TE
 - IPv6 co-existence
 - Inter-domain multicast
 - Mobility
 - VPN
- Facilitates routing when no correlation between network endpoints and topological location

Implementation efforts

- 7 implementations have been identified
 - IOS/NXOS, OpenLISP, LISPmob, LISPClick, lip6-lisp Project, FRITZ!Box
 - Interoperability tests
 - Deployment in the international lisp4.net network

Impact on non-LISP traffic and sites

- Set of open questions with interworking
 - Where to deploy PxTRs?
 - How many PxTRs?
 - What part of the EID space?
 - What about MOA?
 - Who to operate PxTRs?
 - is that really an IETF question?

Impact on LISP traffic and sites

- MTU issue
 - no major issue due to the MTU has been observed in LISP4.net
- Resiliency issue
 - end-to-end vs local failure detection
 - EID-to-RLOC cache construction upon ITR shutdown/(re)start

Impact on LISP traffic and sites (contd.)

- Middle boxes/filters
- Troubleshooting/debugging
 - partial view of the network, ICMP payload is too small
- Business model

To be added

- Control plane observations made on LISP4.net
- Pull vs Push (Ron?)

WG doc adoption?

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