

# An OLSRv2 Proposal

(Responsive OLSRv2 in near-static networks)

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# Summary

A small compatible change to OLSRv2 is proposed.

Motivation is one scenario, described in the draft and summarized here, but it could be more widely used.

# Near-static networks

Some networks do not change often, and fixed period messages might not be ideal.

One approach to this is backing-off message intervals while stable, resetting when changed. This is permitted by OLSRv2, which allows all parameters to be changed at any time.

This draft is motivated by a more extreme case, do we need (some) periodic messages at all in some networks?

But we could also use the added option in other situations.

# Responsive messages

Suppose that the only network changes are routers arriving and departing.

We consider sending messages, or some messages, only when that happens, not periodically.

OLSRv2 suggests sending messages in response to network changes as well as periodic messages, so this is not new.

We can implement not sending periodic messages just by setting a very long, effectively infinite, message interval.

# Local effects

If a new router arrives, the exchange of HELLO messages that results, assuming a responsive message in response to any changes, will update all neighbours and two-hop neighbours.

But what if a router departs?

If it knows that is going to happen, it can send a HELLO message (or messages) with no neighbours before leaving.

But if it does not know that, we are still going to need HELLO messages – or the data link layer doing the job instead.

# Remote effects

So we might still need periodic HELLO messages. But what about TC messages? (Note that these are the main barrier to scalability of the protocol to very large networks.)

We can stop sending them. This has two effects.

Routers might accumulate obsolete information about departed routers. But this does no harm, it is never used.

New routers will sent responsive TC messages, so remote routers learn about them, but this does not work in reverse.

# New responsive TC messages

One solution to this is a form of local database exchange. But this is not backwardly compatible and is not in this draft.

The general solution is the new suggestion that a router MAY/SHOULD/SHALL send a TC message (or messages) in response to adding a new Advertising Remote Router Tuple.

MAY always, including other scenarios, SHOULD if heavily relying on responsive messages. SHALL if fully following the approach of no periodic TC messages.

# Questions?

(There are two more slides following to cover questions that could be asked. If not, read and discuss later if wanted.)



# Message loss

One issue is that periodic messages allow recovery from message loss. Not using periodic messages prevents that.

In some cases that might mean we cannot do this, or cannot do this fully. In some cases we might have a reliable data link layer.

Or we can use the existing suggestion that when a message interval is increased we send messages on the old interval more than once, so message loss is sufficiently uncommon.

# Backwardly compatible?

Isn't a new SHALL requirement not backwardly compatible?

In one sense, it isn't. But in reality all networks – OLSRv2 or otherwise – rely on sensible options, parameters etc.

The cases where the new message is required are, up to this point, not sensible – the network won't work.

So it's backwardly compatible wherever OLSRv2 could have been used up to now.