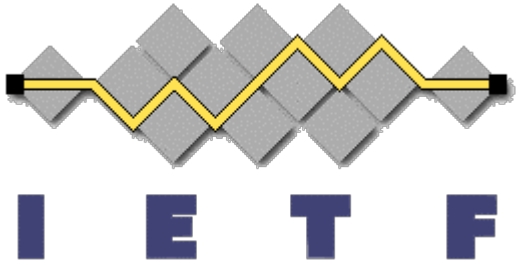

draft-ietf-dhc-dhcvp6-leasequery

DHCPv6 LeaseQuery

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IETF-67 DHC WG

San Diego, November 2006

Changes Since Montreal

- Removed all query types except “by-address”
  - Query can return at most a single client that either has that address OR has been delegated the prefix which contains the address
  - No more bulking
- Removed bulking related options as no longer needed
- Meets basic Relay Agent requirements to rebuild client/address mappings on “reboot”
  - Requires other techniques to deal with rebuilding prefix delegation routing tables without need for traffic (Markus Stenberg to discuss)

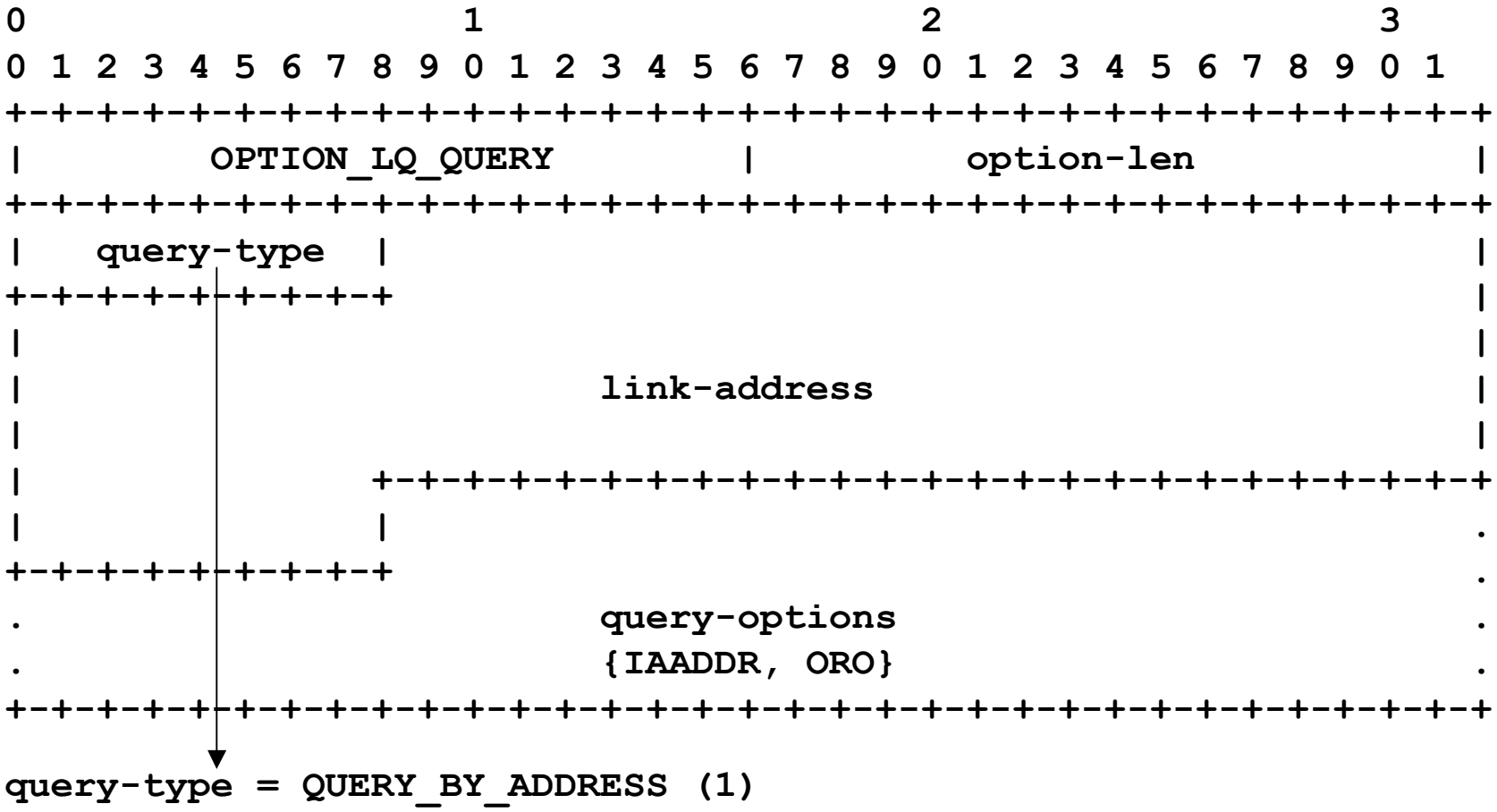
Two Messages

- LEASEQUERY – to request information from a server
- LEASEQUERY-REPLY – response from server
- Both use “client” message format:
  - First Octet: message-type
  - Next 3 Octets: transaction-id
  - Remaining Octets: Options

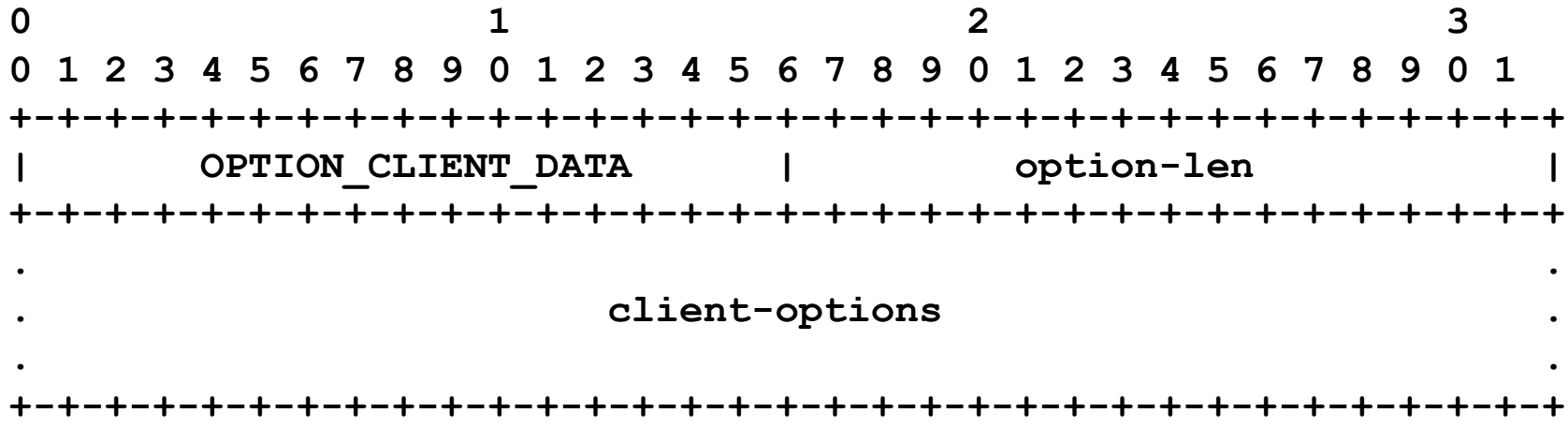
Messages

- Servers only process requests if Server Identifier matches or none specified (like client messages)
- Relays may unicast or multicast requests to server, either directly or via other relays
- Server returns as client message, though destination need not be link-local

OPTION_LQ_QUERY

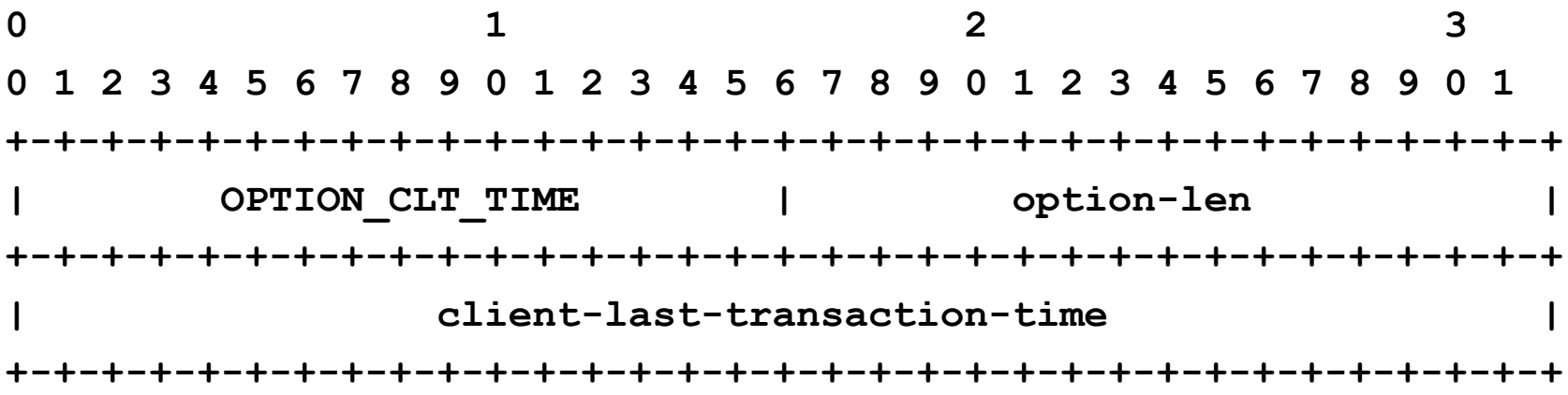


OPTION_CLIENT_DATA



- Encapsulates information about the client that has the requested address
  - Options always returned are Client Identifier, IAADDR (one for each address), IAPREFIX (one for each prefix), and Client Last Transaction Time
  - Additional options can be requested in ORO in the OPTION_LQ_QUERY
  - Note IA_NA, IA_TA, and IA_PD are not returned? Should they be? Don't believe they are needed as RAAN doesn't include them
- No OPTION_CLIENT_DATA option in reply means address is not allocated

OPTION_CLT_TIME



- Number of seconds since server last communicated with client (relative to time LEASEQUERY_REPLY sent)
- Allows relay to chose which server has more recent information (though all servers could have active data)

Other Parameters

- New Status Codes
  - UnknownQueryType (TBD) - The query-type is unknown to or not supported by the server
  - MalformedQuery (TBD) - The query is not valid, for example a required query-option is missing from the OPTION_LQ_QUERY
  - NotConfigured (TBD) - The server does not have the target address or link in its configuration
  - NotAllowed (TBD) - The server does not allow the requestor to issue this LEASEQUERY
- Transmission and Retransmission Parameters
  - LQ_TIMEOUT (1 sec) – Initial LEASEQUERY timeout
  - LQ_MAX_RT (10 secs) – Max LEASEQUERY timeout value
  - LQ_MAX_RC (5) – Max LEASEQUERY retry attempts

Sample LeaseQuery

1. Set the "msg-type" field to LEASEQUERY and generate a transaction ID
2. Add an OPTION_CLIENTID (in this case the Relay Agent's)
3. Add an OPTION_LQ_QUERY:
   - zero the link-address
   - add the OPTION_IAADDR containing the target address (lifetimes are set to 0)
   - add optional OPTION_ORO for client options desired

Sample LeaseQuery Reply

- Set msg-type to LEASEQUERY-REPLY and copy the transaction ID from the LEASEQUERY
- Add the server's OPTION_SERVERID
- Copy the client's OPTION_CLIENTID from the LEASEQUERY
- Add the OPTION_CLIENT_DATA containing:
  - OPTION_CLIENTID – client that leased the queried address
  - OPTION_IAADDR and OPTION_IAPREFIX as needed for the client's leases on the link for the queried address
  - Add optionally requested client options if available

Next Steps

- Comments / Questions?
- Ready for WG Last Call?

- Interest in expanding LeaseQuery - as a separate I-D!
  - More query types, including bulk queries
  - Using DHCPv6 or other protocol