

P802.1CQ Update of 2020-03-19

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P802.1CQ Administrative Status

- P802.1CQ Multicast and Local Address Assignment
<https://1.ieee802.org/tsn/802-1cq/>
- 802.1 WG Motion (approved 2020-07-18): *802.1 authorizes Roger Marks, the Editor of P802.1CQ Multicast and Local Address Assignment to prepare drafts for and conduct Task Group balloting*
still not quite ready, but close
- [PAR](#) approved 2016-02-05 (expires 2020-12-21)
both peer-to-peer address claiming and address server
- [Draft PAR extension](#) request reviewed by IEEE 802
no comments submitted
could be agreed by 802.1 WG in ePoll

Key Points

- Integrate MAC Address Acquisition Protocol (MAAP) from IEEE Std 1722-2016 into draft, with minor error corrections, as one method

- claiming (peer-to-peer)
- backward compatible with existing MAAP

- new Protocol for Assignment of Local and Multicast Addresses (PALMA)

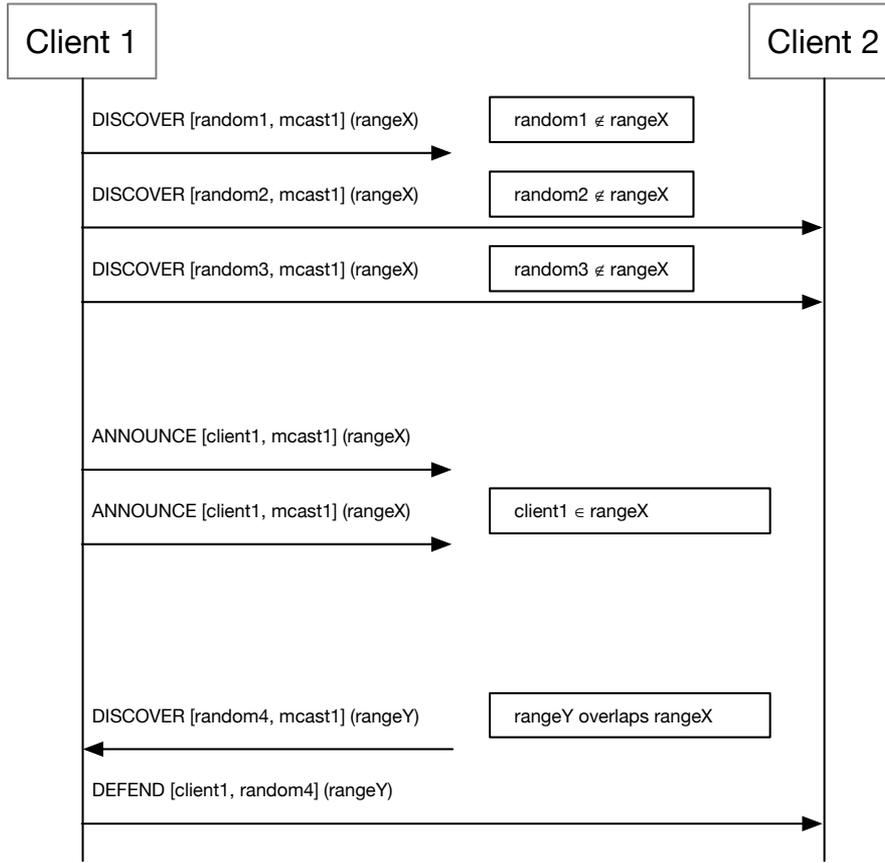
- Supports both claiming (peer-to-peer) and client/server assignment
- Messaging begins with DISCOVER (multicast from client; seeks server or peer)
 - may require client to adopt a source address chosen randomly from a specified range
 - note that we are calling it a “client” even when there is no server
- If server hears DISCOVER
 - OFFER (server to client)
 - REQUEST (client to server)
 - ACKNOWLEDGE (server to client)
- If peer hears DISCOVER claiming address already in use
 - DEFEND (peer to client to defend address)
 - ANNOUNCE (multicast announcement by client of claimed addresses)

Address Pools and Reboots

- Each server needs a disjoint address pool
- Claiming operation needs a disjoint address pool.
- MAAP specifies that addresses can be saved in persistent storage; at bootup, a device may issue a multicast DISCOVER with the prior self-assigned address; or a unicast DISCOVER to the server.
- A server may offer an address in response to the multicast DISCOVER.
- Devices should prefer server-assigned addresses, because self-assigned addresses result in a lot of multicast noise.

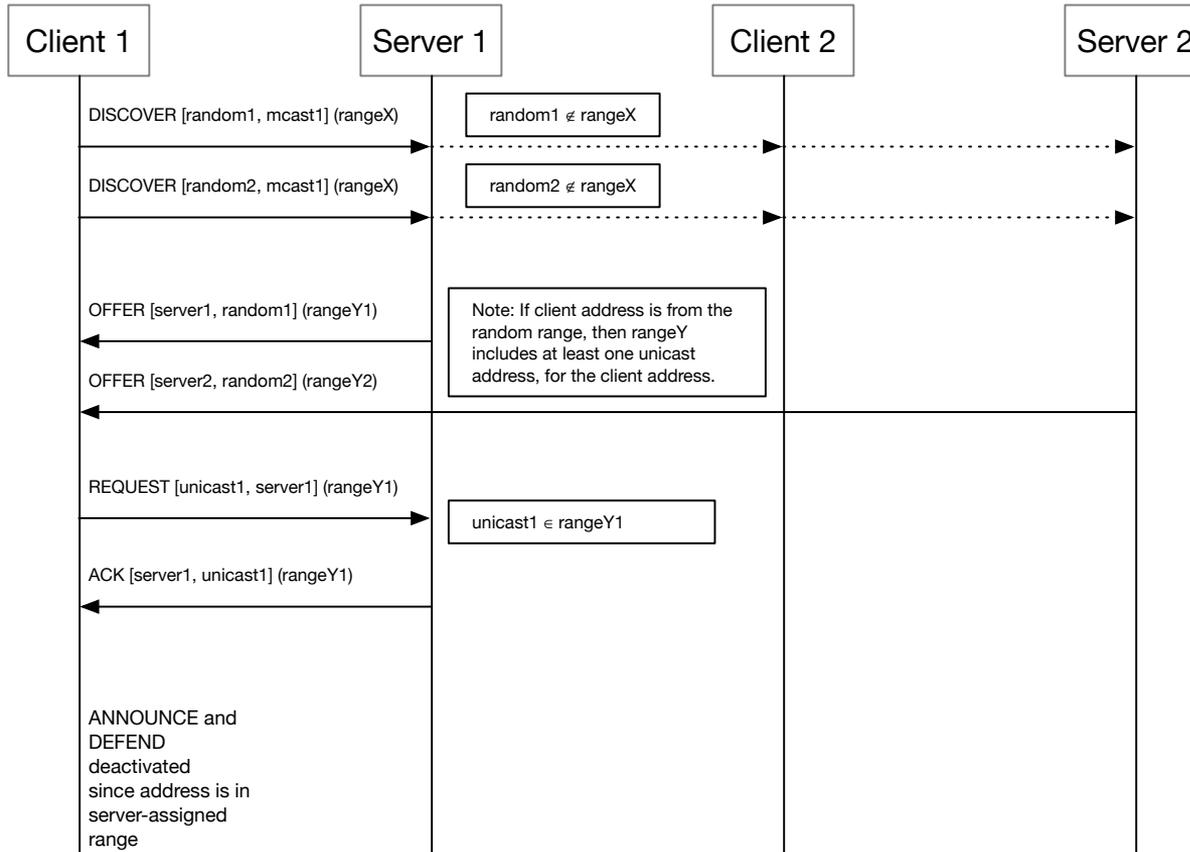
PALMA Claiming Message Exchange

Legend: MESSAGE [SA, DA] (parameters)



PALMA Client/Server Message Exchange

Legend: MESSAGE [SA, DA] (parameters)



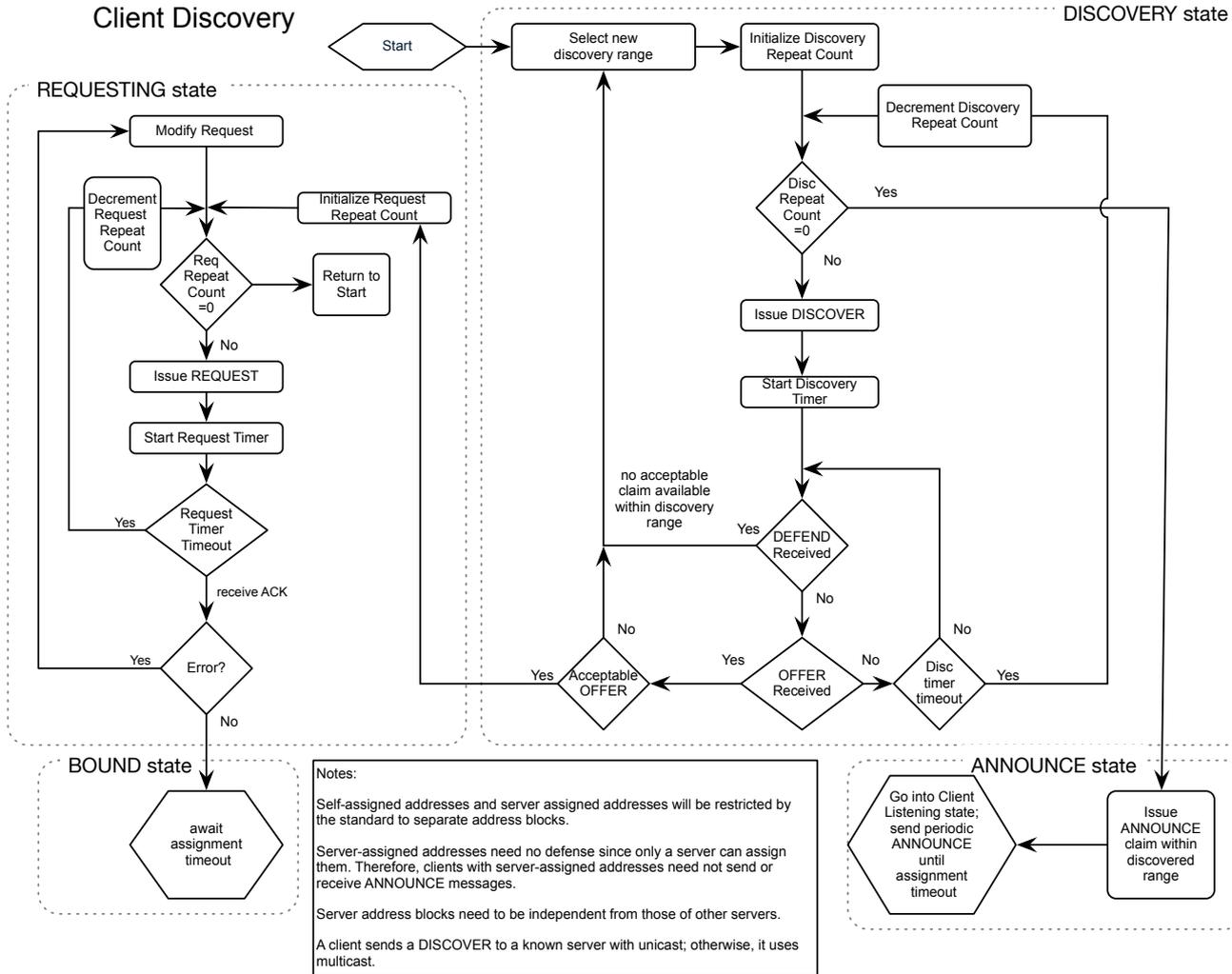
Updated PALMA flowcharts

- Client Discovery
- Client Listening State, Self-assigned Client
- Server

- Have presented and discussed versions before

- New versions follow

Client Discovery

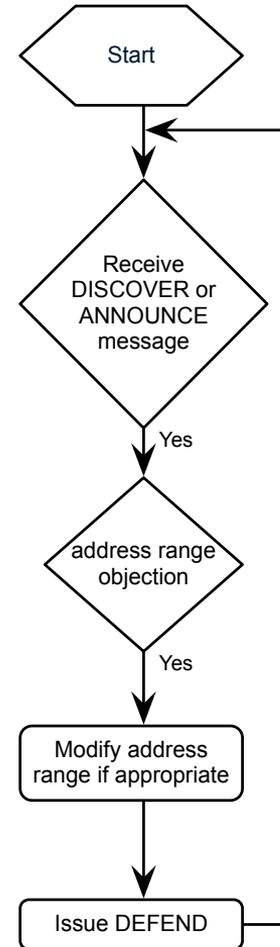


Client Listening State, Self-assigned Client

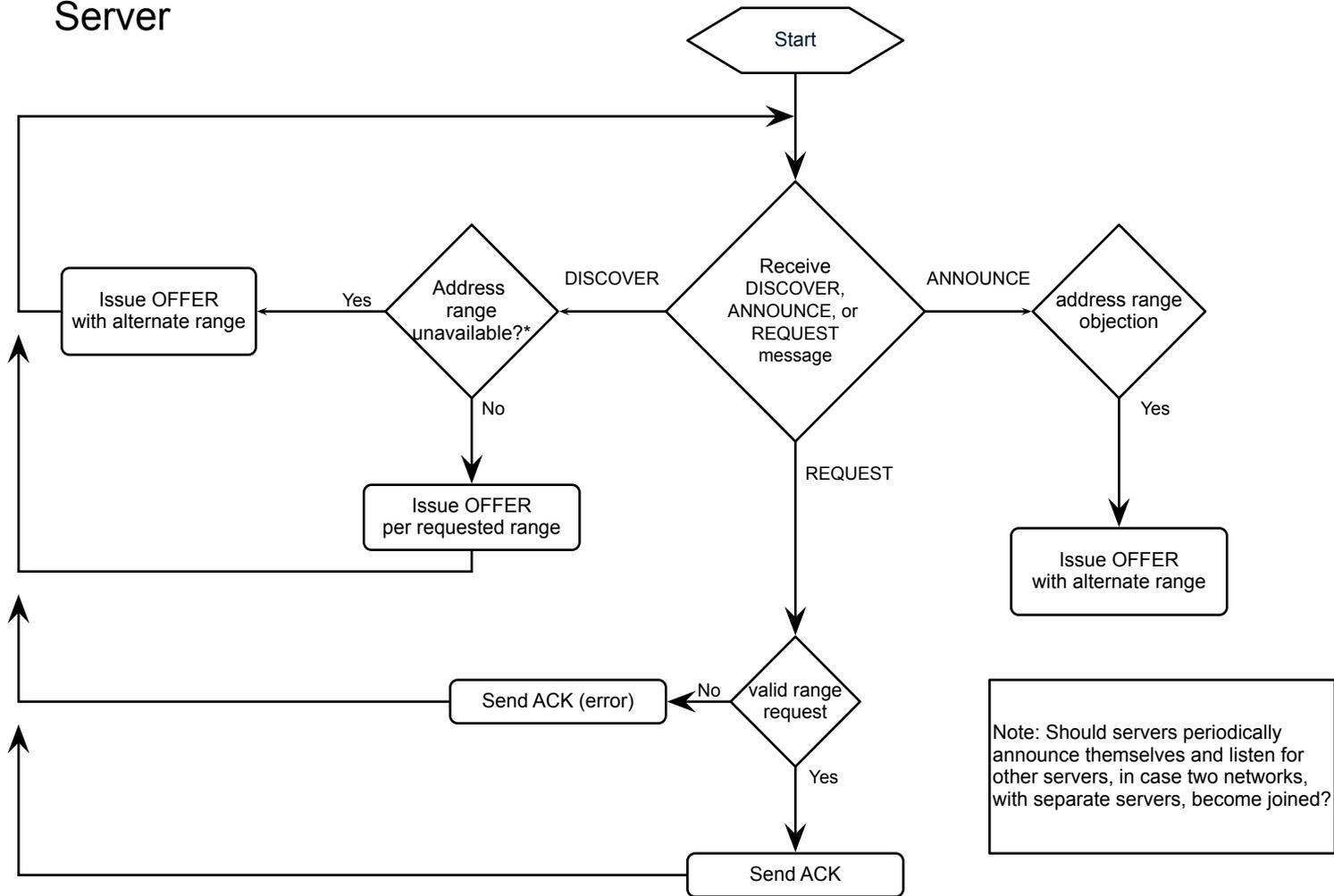
Note: Self-assigned addresses and server assigned addresses will be restricted by the standard to separate address blocks.

Server-assigned addresses need no defense since only a server can assign them. Therefore, clients with server-assigned addresses need not receive or respond to DISCOVER or ANNOUNCE messages or send DEFENDs.

Server address blocks need to be independent from those of other servers.



Server



*Includes case in which address range is in the self-assigned address range.

Next Steps

- Incorporate these processes into the P802.1CQ draft
- Open TG ballot soon