

# DHCP v4/v6

## Relay Initiated Release

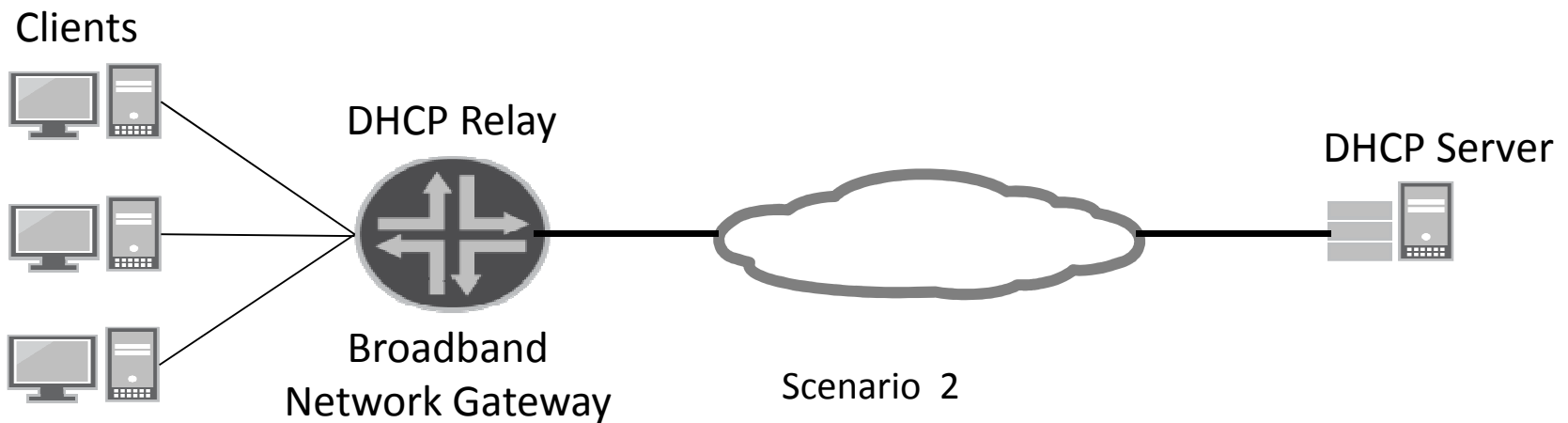
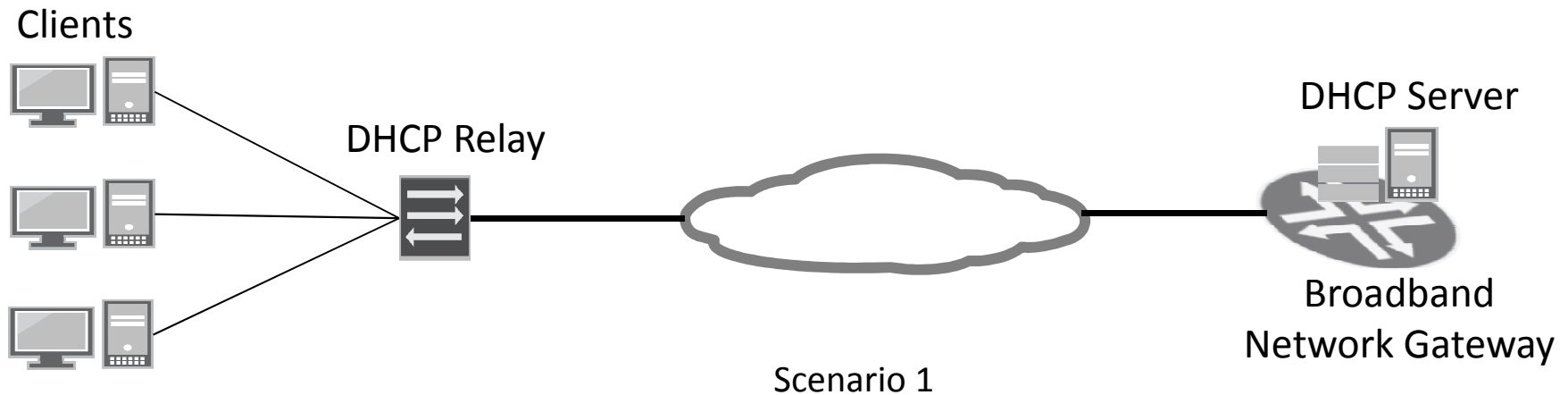
[draft-gandhewar-dhc-relay-initiated-release-00](#)  
[draft-gandhewar-dhc-v6-relay-initiated-release-00](#)

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# Concerns from Service Providers

- DHCP Client may not always send the Release
  - Holds resources and possibly incorrect billing
- Replacement of failed client device (e.g. set-top box)
  - Causes duplicate client binding and hence double the associated resources
- Administratively clearing DHCP client binding
  - Needs to be done at each DHCP device to release resources (cumbersome)

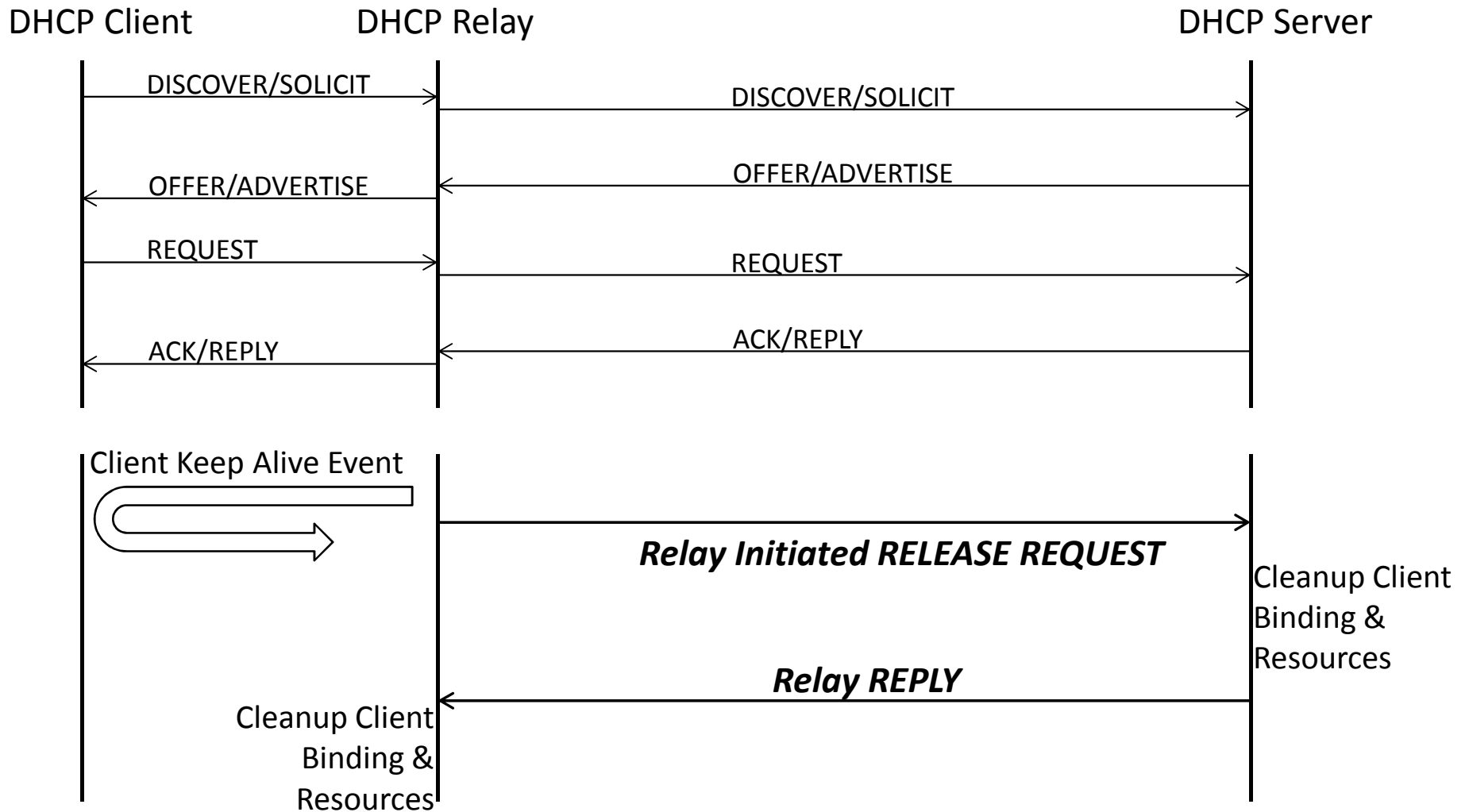
# Broadband Edge Network



# Network Resources

- Relay/Server Embedded in BNG
  - Creates logical interface per client (subscriber)
  - Programs various routes e.g. access, framed routes
  - Attaches services e.g. data, voice, video
  - Maintains Policy
  - Applies QoS
  - Memory, Bandwidth etc
- vCPE - Virtual Customer Premises Equipment
  - Relay is part of IP Front End
  - Per client (subscriber) service chaining in the cloud
  - Resources are reserved in the cloud

# Proposed Solution



# Proposed Solution ...contd.

- On Client's unavailability or replacement
  - Relay initiates a Release on behalf of client
- Clearing of unused bindings
  - optimizes the use of resources
- Higher resource availability
  - enables higher subscription for Service Providers
- Configurable behavior
  - provides granular control at relay as well as server
- Retry, Timeout, ACK
  - ensures synchronized client state at all the DHCP network devices

# Next Steps

- Questions, Feedback, Improvements
- Contributions?
- Adoption as a WG draft?

**Thank You!**



# DHCPv4 Release By Relay

- Configurable behavior at first DHCP device e.g. relay
- DHCPRELEASEBYRELAY includes
  - ciaddr, chaddr, clientId, serverId
  - giaddr, option 82 (Relay Agent Information Option)
- Unicast to the server

# DHCPv4 Relay Reply

- Configurable behavior at Server
- DHCPRELAYREPLY includes – Status Code Option 151
  - NotConfigured
  - NotAllowed – to restrict requests from particular relay
  - NoBinding
  - Success
- Unicast to the relay

# DHCPv6 Release Request

- Configurable behavior at first DHCP device e.g. relay to send RELEASE-REQUEST
- Common Options
  - Server Identifier
  - Interface Identifier
- One or more - Client Data Option
  - Client Identifier
  - One or more IA (IA\_NA/IA\_PD)
    - One or more IA\_ADDR, IA\_Prefix

# DHCPv6 Release Request Reply

- Configurable behavior at Server to send RELEASE-REQUEST-REPLY
- Status Code Option Position
  - Directly under Reply
  - Inside Client Data Option
  - Inside IA
- Status Code Option Values
  - NotConfigured
  - NotAllowed – to restrict requests from particular relay
  - NoBinding
  - Success

# Glossary

- BBE – Broadband Edge
- BNG – Broadband Network Gateway
- CPE – Customer Premises Equipment
- vCPE – Virtual Customer Premises Equipment