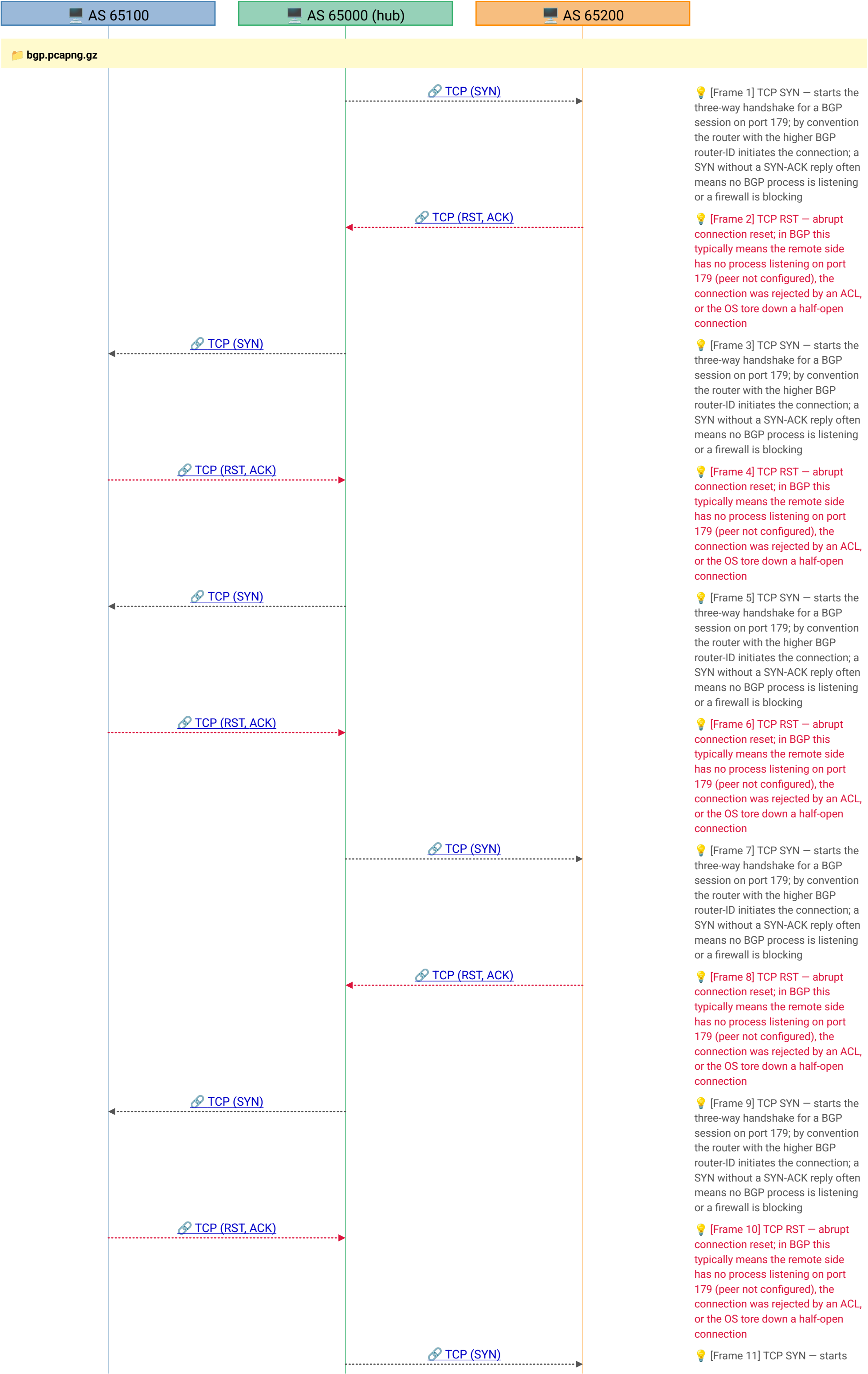
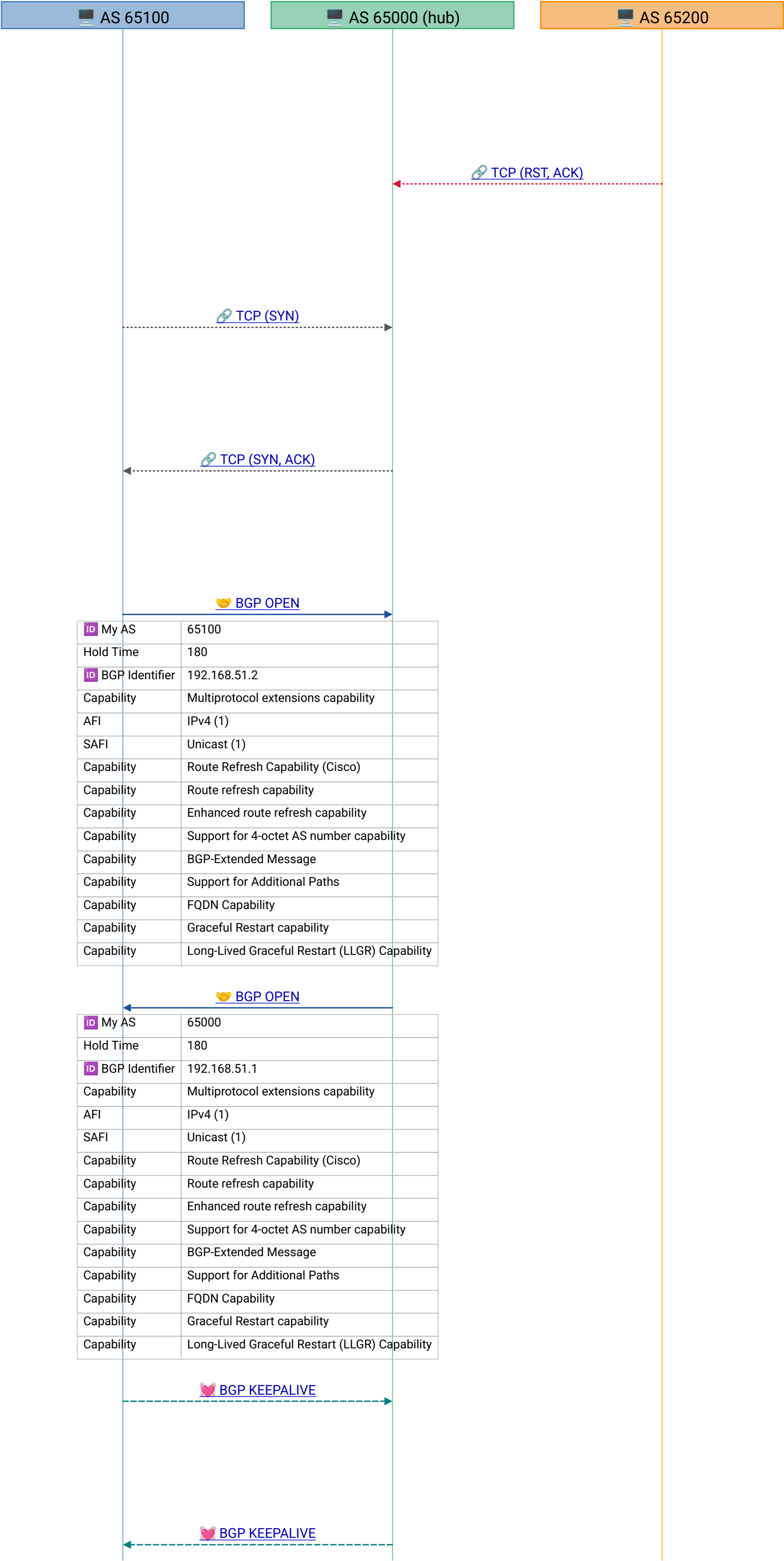






AS 65100

AS 65000 (hub)

AS 65200

BGP UPDATE

Path Attribute - ORIGIN	IGP
AS_PATH	65100
NEXT_HOP	192.168.51.2
Path Attribute - MULTI_EXIT_DISC	0
Path Attribute - COMMUNITIES	321:654
Prefix Length	16
NLRI	10.30.0.0

BGP UPDATE

Path Attribute - ORIGIN	IGP
AS_PATH	65100
NEXT_HOP	192.168.51.2
Path Attribute - MULTI_EXIT_DISC	0
Path Attribute - COMMUNITIES	123:456
Prefix Length	16
NLRI	10.40.0.0

BGP UPDATE

BGP UPDATE

Path Attribute - ORIGIN	IGP
AS_PATH	65000
NEXT_HOP	192.168.51.1
Path Attribute - MULTI_EXIT_DISC	0
Path Attribute - COMMUNITIES	123:456
Prefix Length	16
NLRI	10.10.0.0

BGP UPDATE

Path Attribute - ORIGIN	IGP
AS_PATH	65000
NEXT_HOP	192.168.51.1
Path Attribute - MULTI_EXIT_DISC	0
Path Attribute - COMMUNITIES	123:456 321:654
Prefix Length	16
NLRI	10.20.0.0

BGP UPDATE

Path Attribute - ORIGIN	IGP
AS_PATH	65000 65100
NEXT_HOP	192.168.51.1
Path Attribute - COMMUNITIES	321:654
Prefix Length	16
NLRI	10.30.0.0

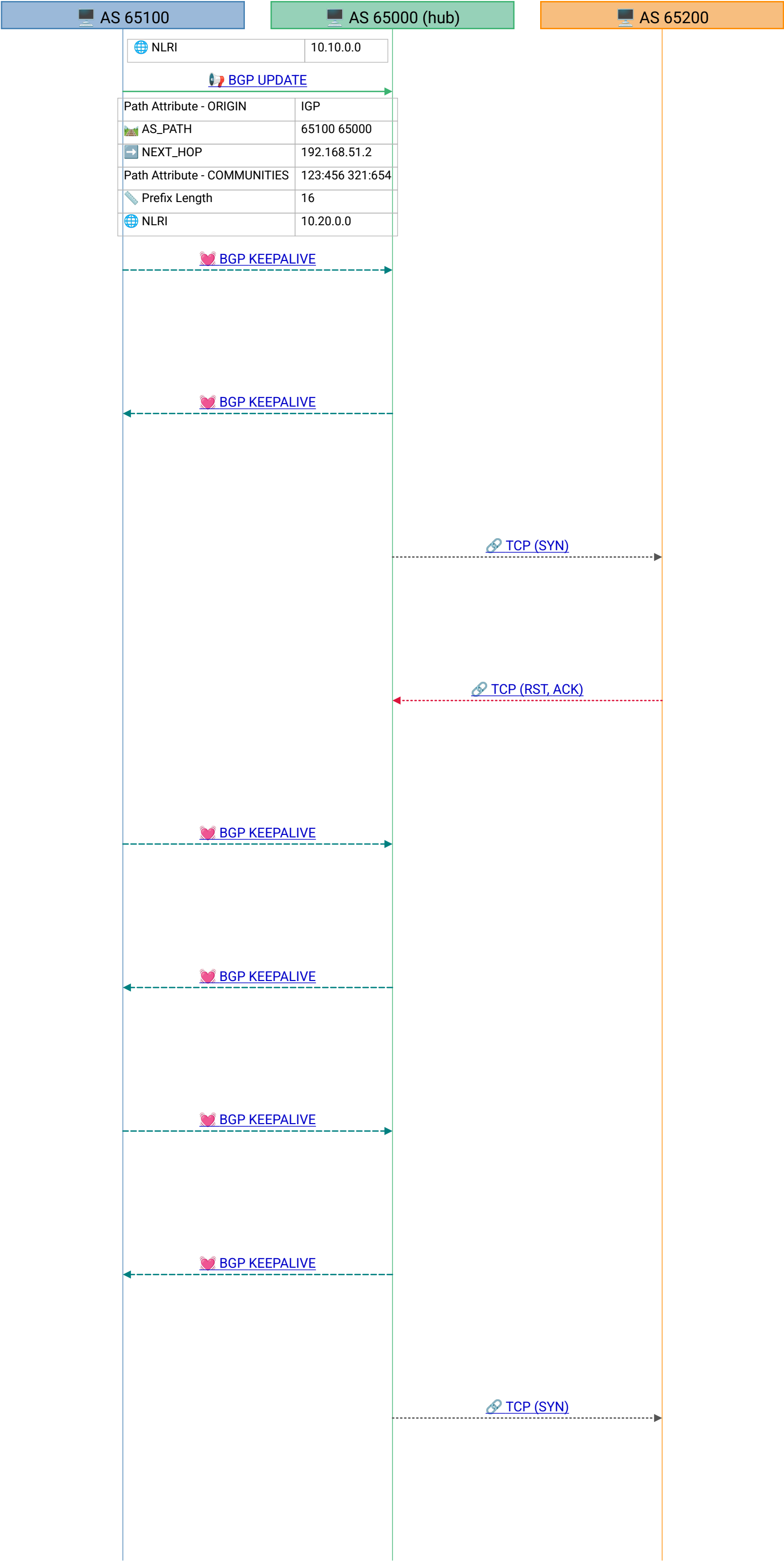
BGP UPDATE

Path Attribute - ORIGIN	IGP
AS_PATH	65000 65100
NEXT_HOP	192.168.51.1
Path Attribute - COMMUNITIES	123:456
Prefix Length	16
NLRI	10.40.0.0

BGP UPDATE

BGP UPDATE

Path Attribute - ORIGIN	IGP
AS_PATH	65100 65000
NEXT_HOP	192.168.51.2
Path Attribute - COMMUNITIES	123:456
Prefix Length	16



💡 [Frame 30] BGP KEEPALIVE (RFC 4271) — a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 32] BGP KEEPALIVE (RFC 4271) — a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 34] TCP SYN — starts the three-way handshake for a BGP session on port 179; by convention the router with the higher BGP router-ID initiates the connection; a SYN without a SYN-ACK reply often means no BGP process is listening or a firewall is blocking

💡 [Frame 35] TCP RST — abrupt connection reset; in BGP this typically means the remote side has no process listening on port 179 (peer not configured), the connection was rejected by an ACL, or the OS tore down a half-open connection

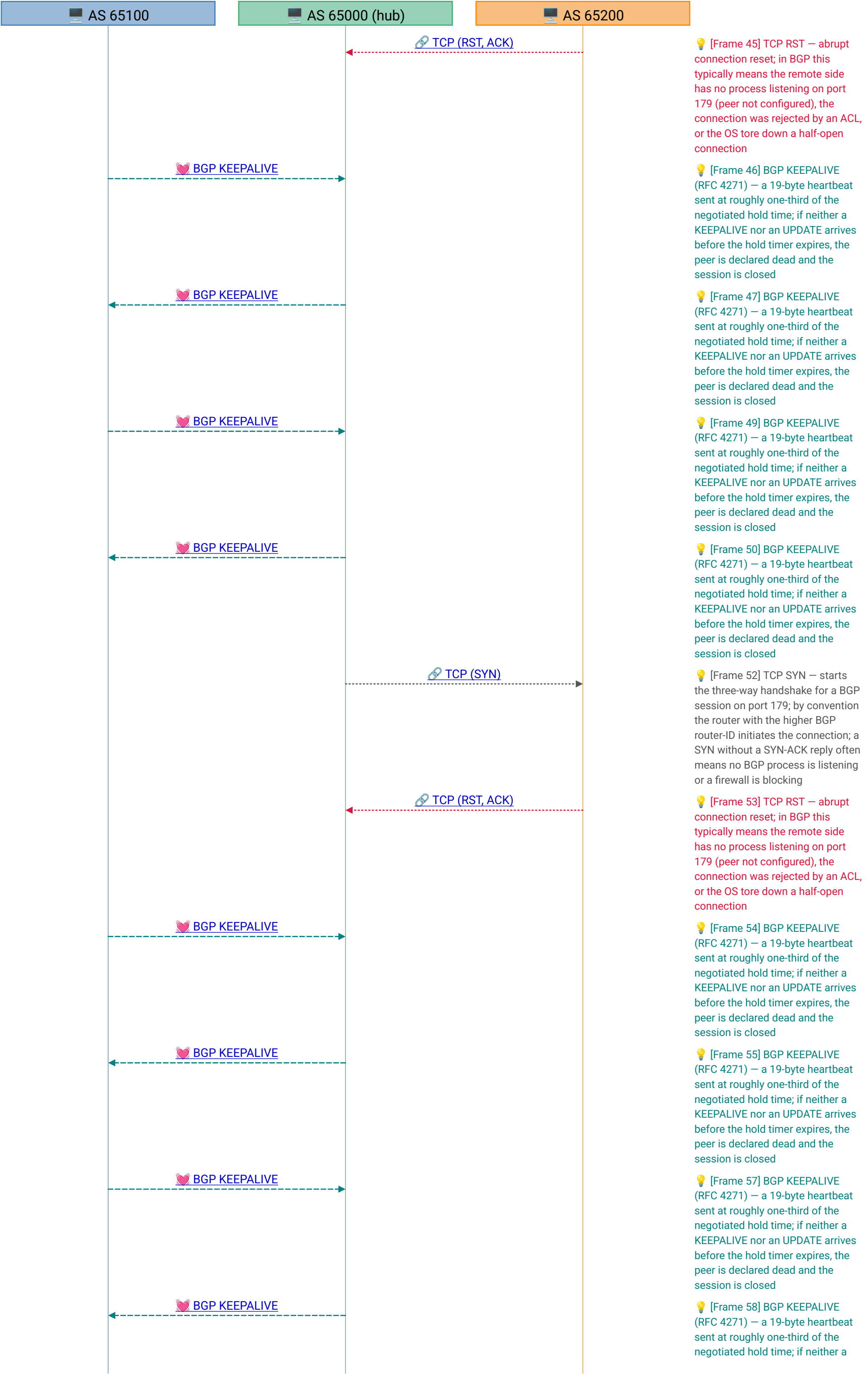
💡 [Frame 36] BGP KEEPALIVE (RFC 4271) — a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

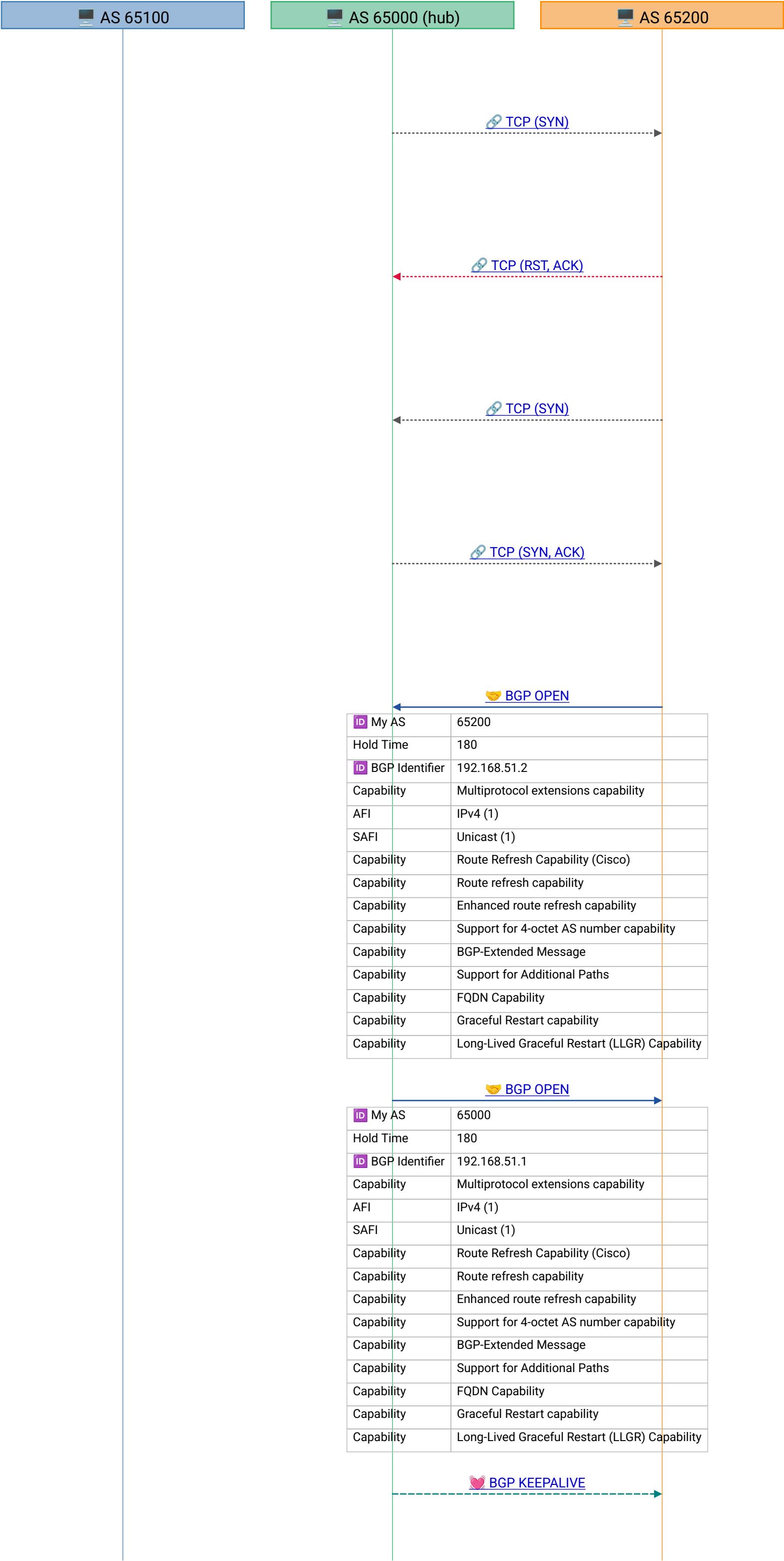
💡 [Frame 38] BGP KEEPALIVE (RFC 4271) — a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 40] BGP KEEPALIVE (RFC 4271) — a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 42] BGP KEEPALIVE (RFC 4271) — a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 44] TCP SYN — starts the three-way handshake for a BGP session on port 179; by convention the router with the higher BGP router-ID initiates the connection; a SYN without a SYN-ACK reply often means no BGP process is listening or a firewall is blocking





KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 60] TCP SYN — starts the three-way handshake for a BGP session on port 179; by convention the router with the higher BGP router-ID initiates the connection; a SYN without a SYN-ACK reply often means no BGP process is listening or a firewall is blocking

💡 [Frame 61] TCP RST — abrupt connection reset; in BGP this typically means the remote side has no process listening on port 179 (peer not configured), the connection was rejected by an ACL, or the OS tore down a half-open connection

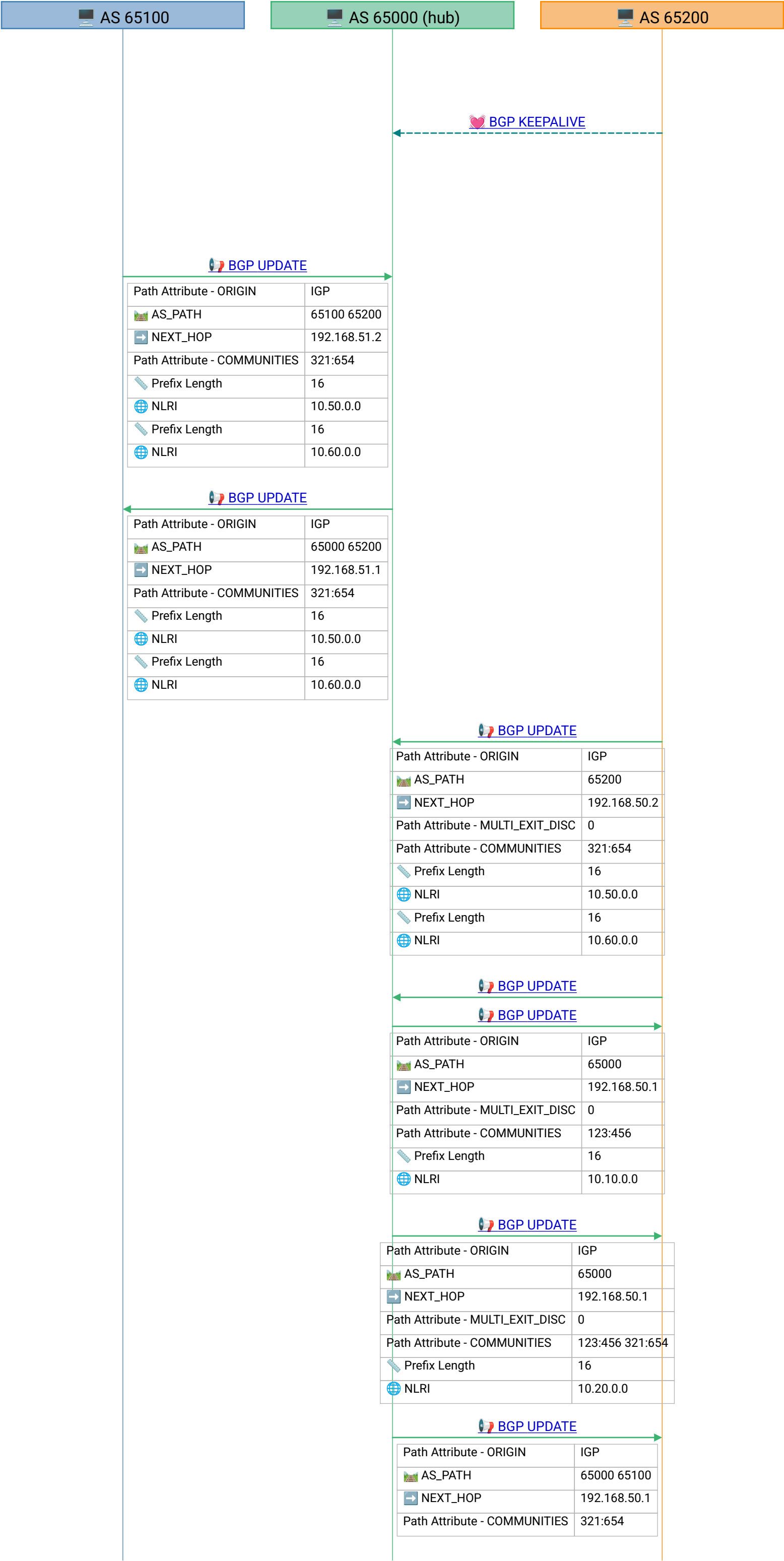
💡 [Frame 62] TCP SYN — starts the three-way handshake for a BGP session on port 179; by convention the router with the higher BGP router-ID initiates the connection; a SYN without a SYN-ACK reply often means no BGP process is listening or a firewall is blocking

💡 [Frame 63] TCP SYN — starts the three-way handshake for a BGP session on port 179; by convention the router with the higher BGP router-ID initiates the connection; a SYN without a SYN-ACK reply often means no BGP process is listening or a firewall is blocking

💡 [Frame 65] BGP OPEN (RFC 4271) — initiates peering by exchanging AS numbers, hold timers, router IDs and optional capabilities (4-octet AS, MP-BGP address families, graceful restart); both sides must OPEN before the session is established

💡 [Frame 67] BGP OPEN (RFC 4271) — initiates peering by exchanging AS numbers, hold timers, router IDs and optional capabilities (4-octet AS, MP-BGP address families, graceful restart); both sides must OPEN before the session is established

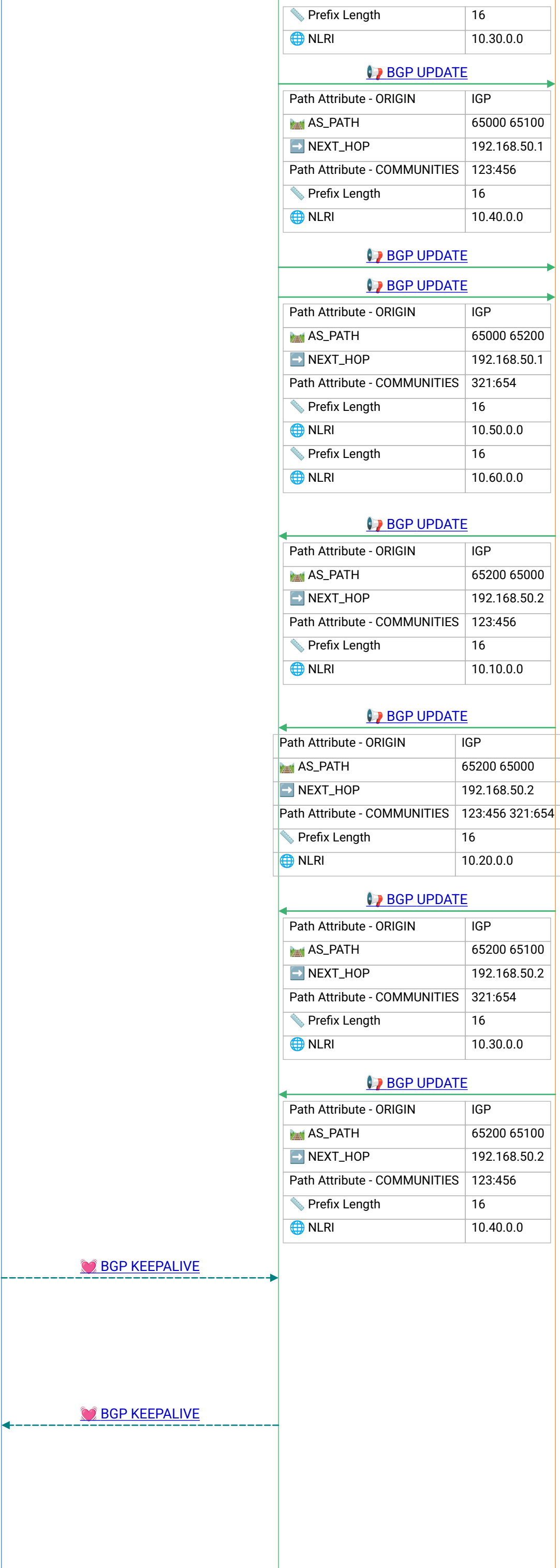
💡 [Frame 69] BGP KEEPALIVE (RFC 4271) — a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a



 AS 65100

 AS 65000 (hub)

 AS 65200

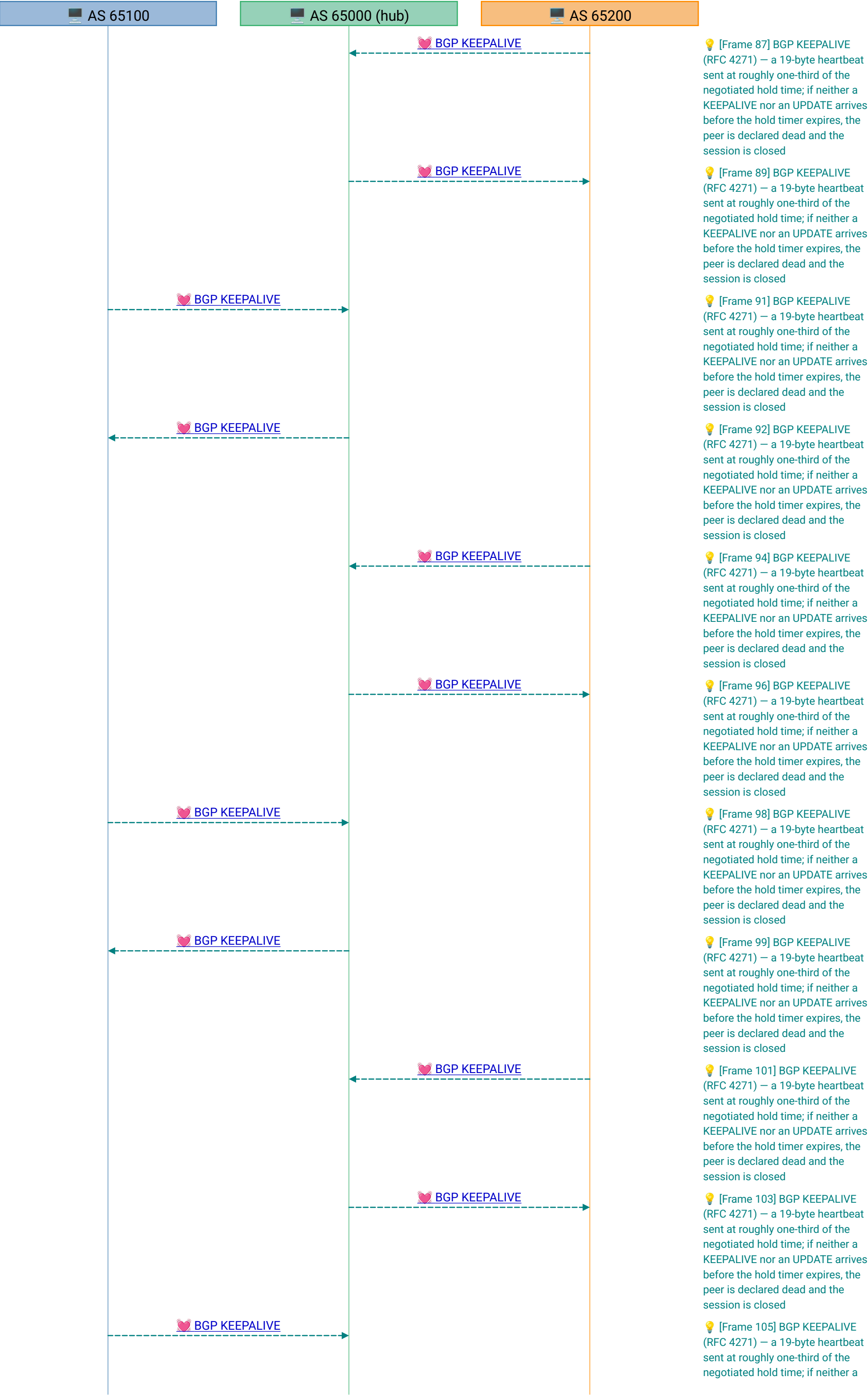


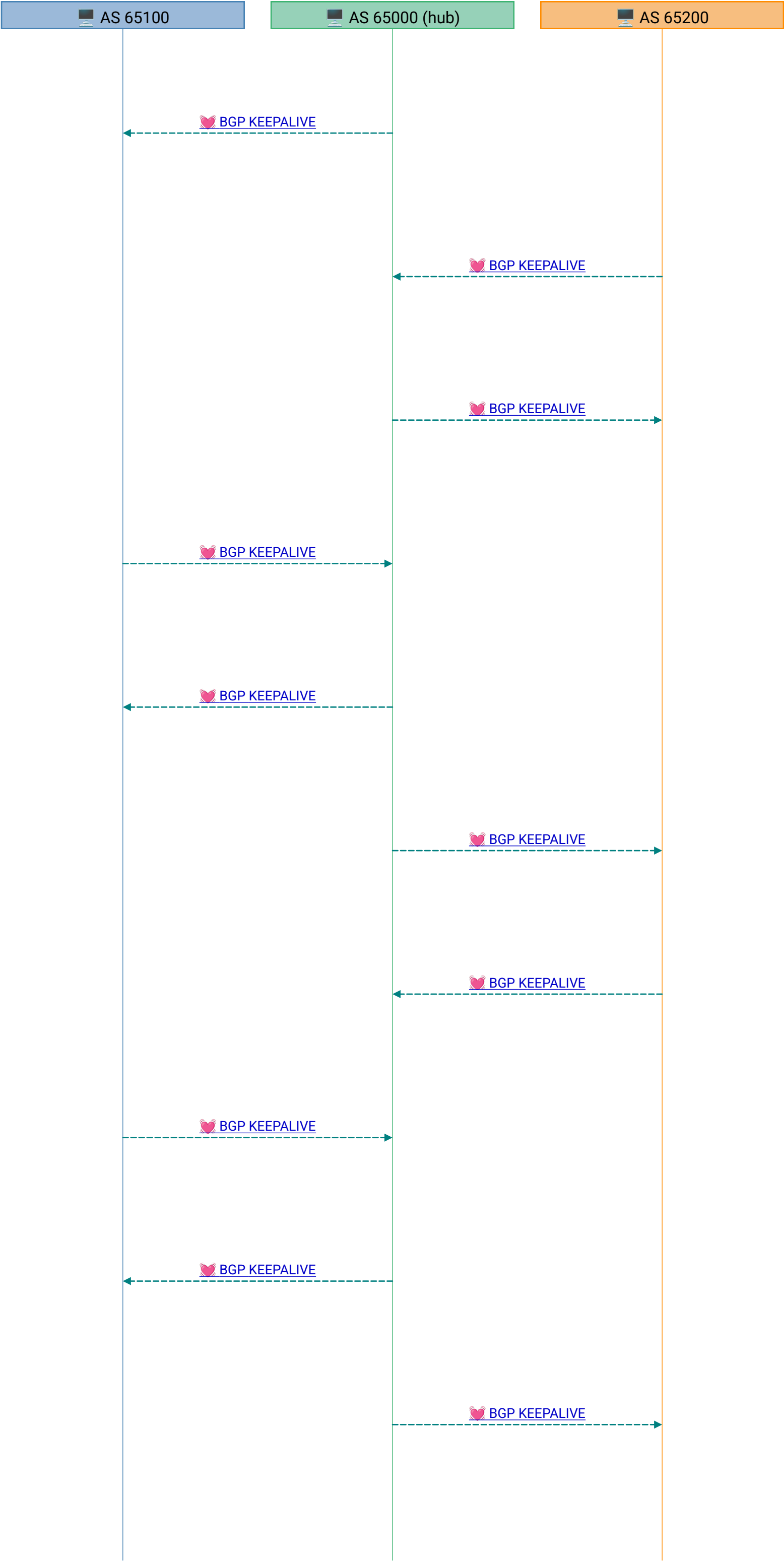
💡 [Frame 80] BGP UPDATE (RFC 4271) — advertises new routes (NLRI with path attributes: AS_PATH, NEXT_HOP, LOCAL_PREF, MED, communities) and/or withdraws previously announced prefixes; the AS_PATH prevents loops and drives best-path selection

💡 [Frame 82] BGP UPDATE (RFC 4271) — advertises new routes (NLRI with path attributes: AS_PATH, NEXT_HOP, LOCAL_PREF, MED, communities) and/or withdraws previously announced prefixes; the AS_PATH prevents loops and drives best-path selection

💡 [Frame 84] BGP KEEPALIVE (RFC 4271) — a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 85] BGP KEEPALIVE (RFC 4271) — a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed





KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 106] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 108] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 109] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 111] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 112] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

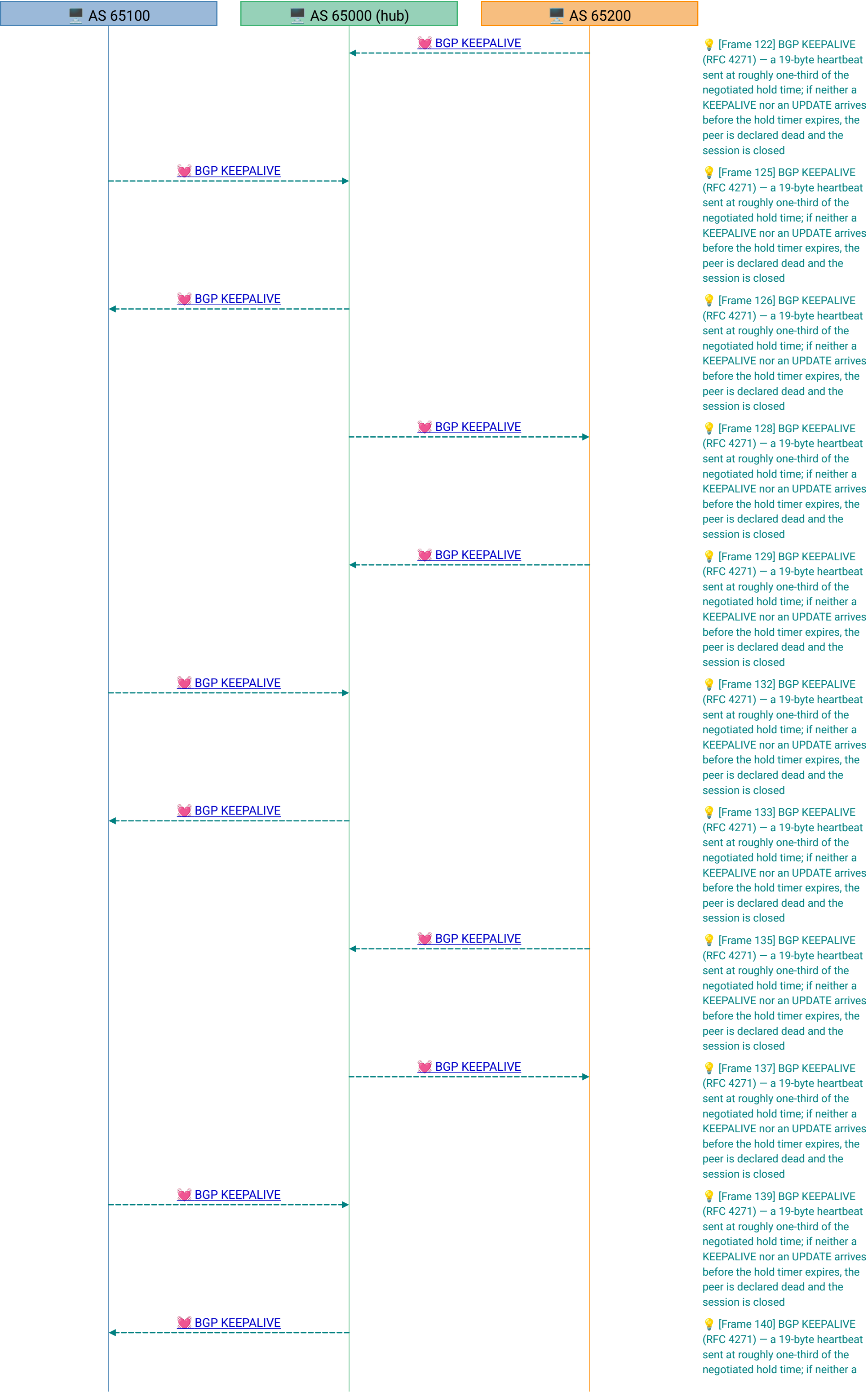
💡 [Frame 114] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 115] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 118] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 119] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

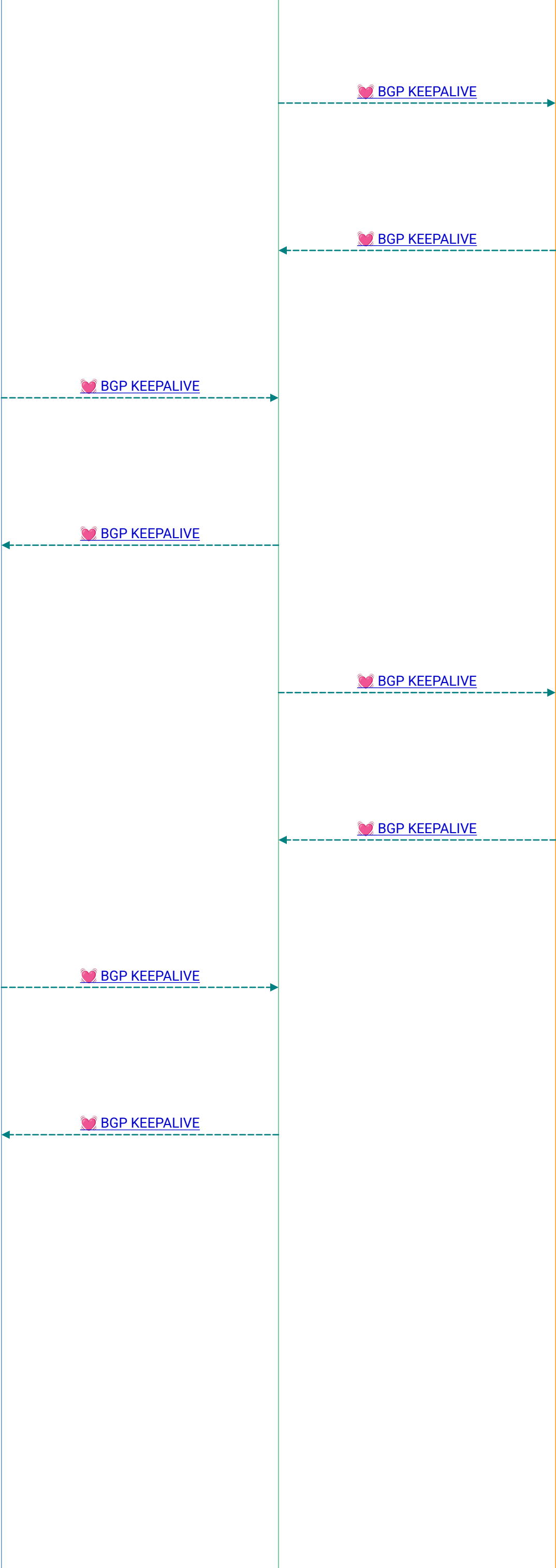
💡 [Frame 121] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed



 AS 65100

 AS 65000 (hub)

 AS 65200



KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 142] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 143] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 146] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 147] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 149] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 150] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 153] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed

💡 [Frame 154] BGP KEEPALIVE (RFC 4271) – a 19-byte heartbeat sent at roughly one-third of the negotiated hold time; if neither a KEEPALIVE nor an UPDATE arrives before the hold timer expires, the peer is declared dead and the session is closed