Digging into EIGRP Relationships

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Module Overview

Module Overview

Forming a Neighborship

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Forming a Neighborship

EIGRP Timers

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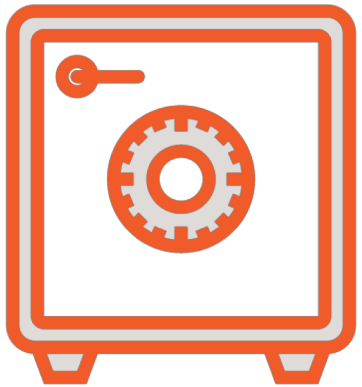
Forming a Neighborship

EIGRP Timers

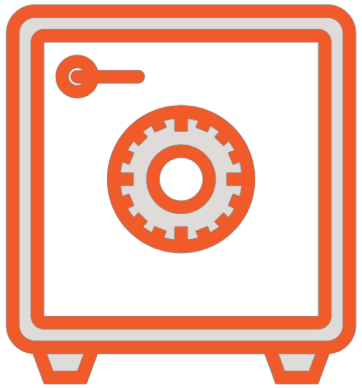
Introduction to the EIGRP Packet

EIGRP Neighborships



Form a trusted bond between devices

EIGRP Neighborships



Form a trusted bond between devices

Once formed, information can be exchanged

Neighborship Requirements

Matching:

Autonomous system number (ASN)

Neighborship Requirements

Matching:

- K-values

Neighborship Requirements

Matching:

- Authentication parameters

Neighborship Requirements

Matching:

IPv4 subnet

Normal establishment is automatic

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Uses multicast hello packets (224.0.0.10 or FF02::A)

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Uses multicast hello packets (224.0.0.10 or FF02::A)

Neighborship still possible with static configuration

Multicast and unicast messages are exchanged

Two different timers:

- Hello

Two different timers:

- Hello
- Hold

Two different timers:

- Hello
- Hold

Indicates how often hello packets sent

Two different timers:

- Hello
- Hold

Indicates how often hello packets sent

Hello packet:

- Discovers new neighbors

Two different timers:

- Hello
- Hold

Indicates how often hello packets sent

Hello packet:

- Discovers new neighbors
- Acts as keepalive

Two different timers:

- Hello
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Indicates how often hello packets sent

Hello packet:

- Discovers new neighbors
- Acts as keepalive
- Communicates k-values and hold timer value

Two different timers:

- Hello
- Hold

Indicates how often hello packets sent

Hello packet:

- Discovers new neighbors
- Acts as keepalive
- Communicates k-values and hold timer value
- Acknowledges other packet types

EIGRP Timers

Hello timer often set to 5 seconds

EIGRP Timers

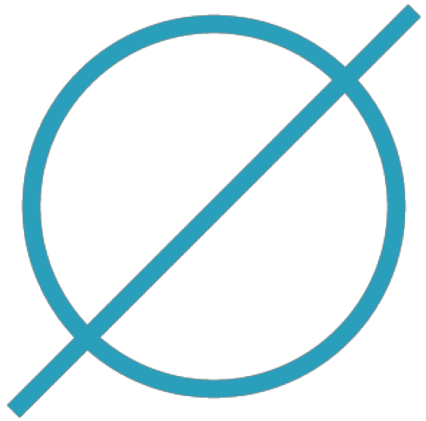
Hold timer determines when neighbor is down

EIGRP Timers

Hold timer often set to 3X hello timer

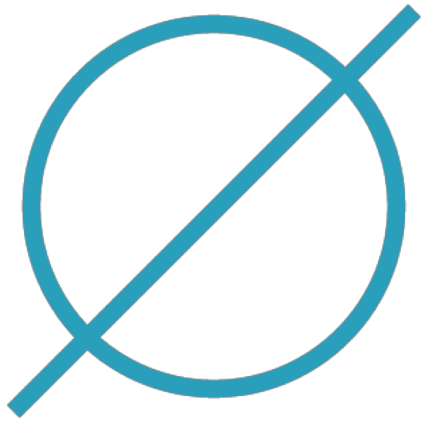
Neighbors not receiving hello packet within hold timer will be considered down

EIGRP Timers

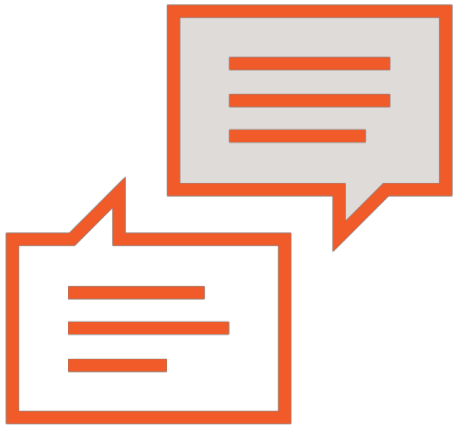


Timers don't need to match

EIGRP Timers

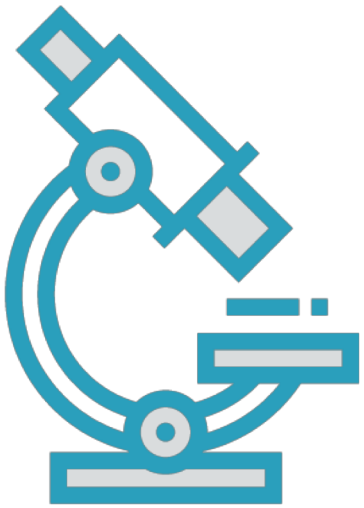


Timers don't need to match

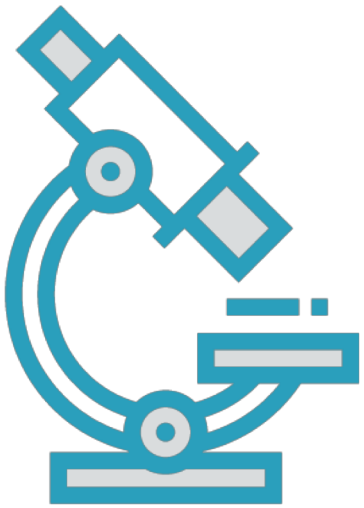


Devices use neighbors advertised hold timer value

EIGRP packet details can be dry

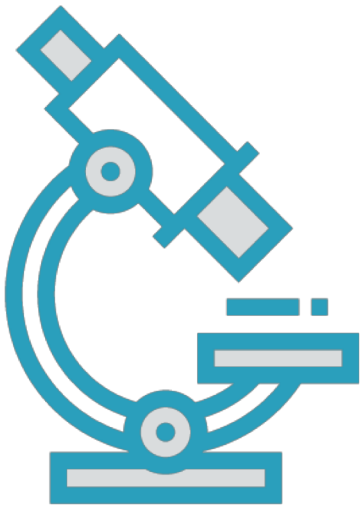


EIGRP



EIGRP

Assigned IP protocol number of 88

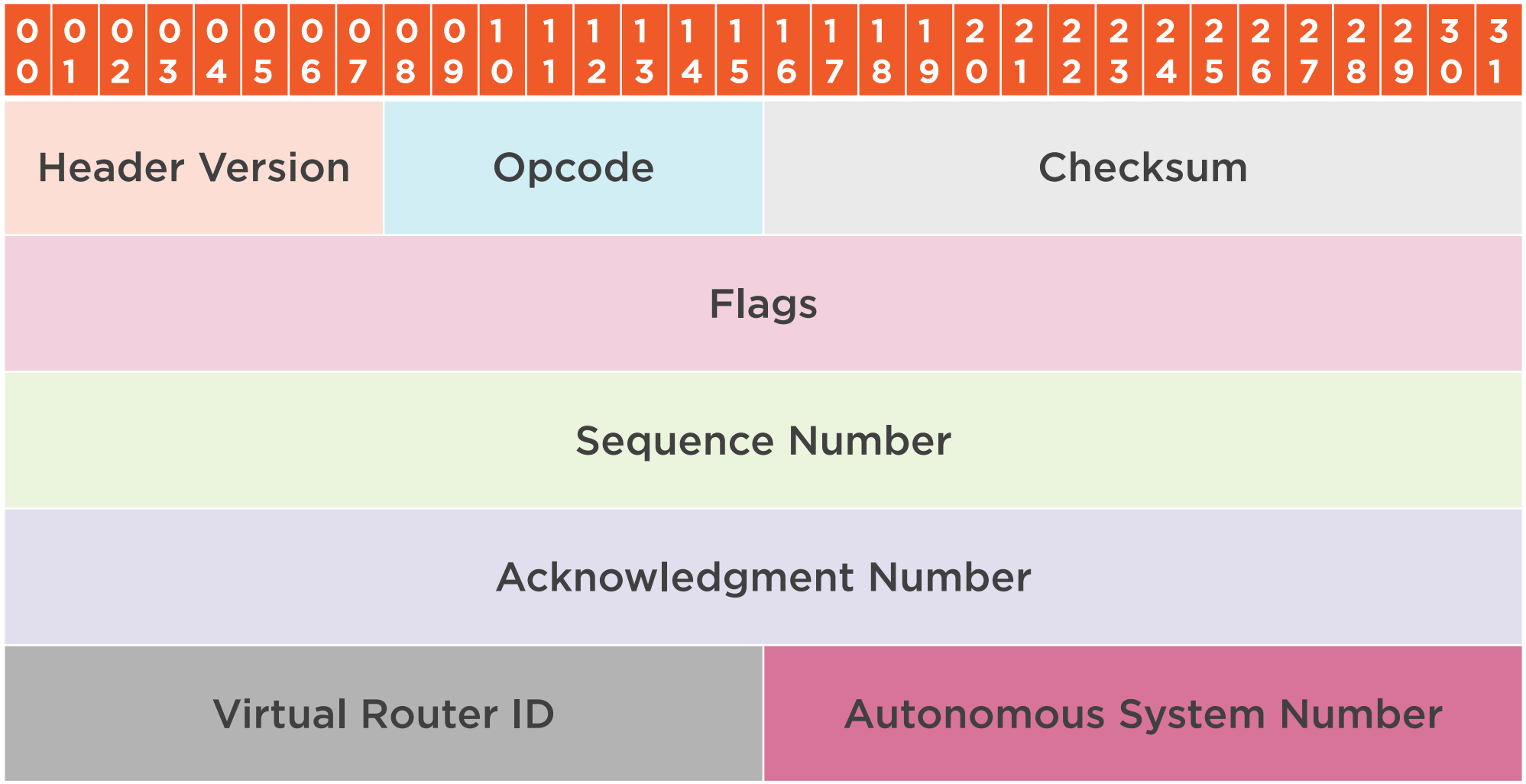


EIGRP

Assigned IP protocol number of 88

Use this number while monitoring

EIGRP Packet Header



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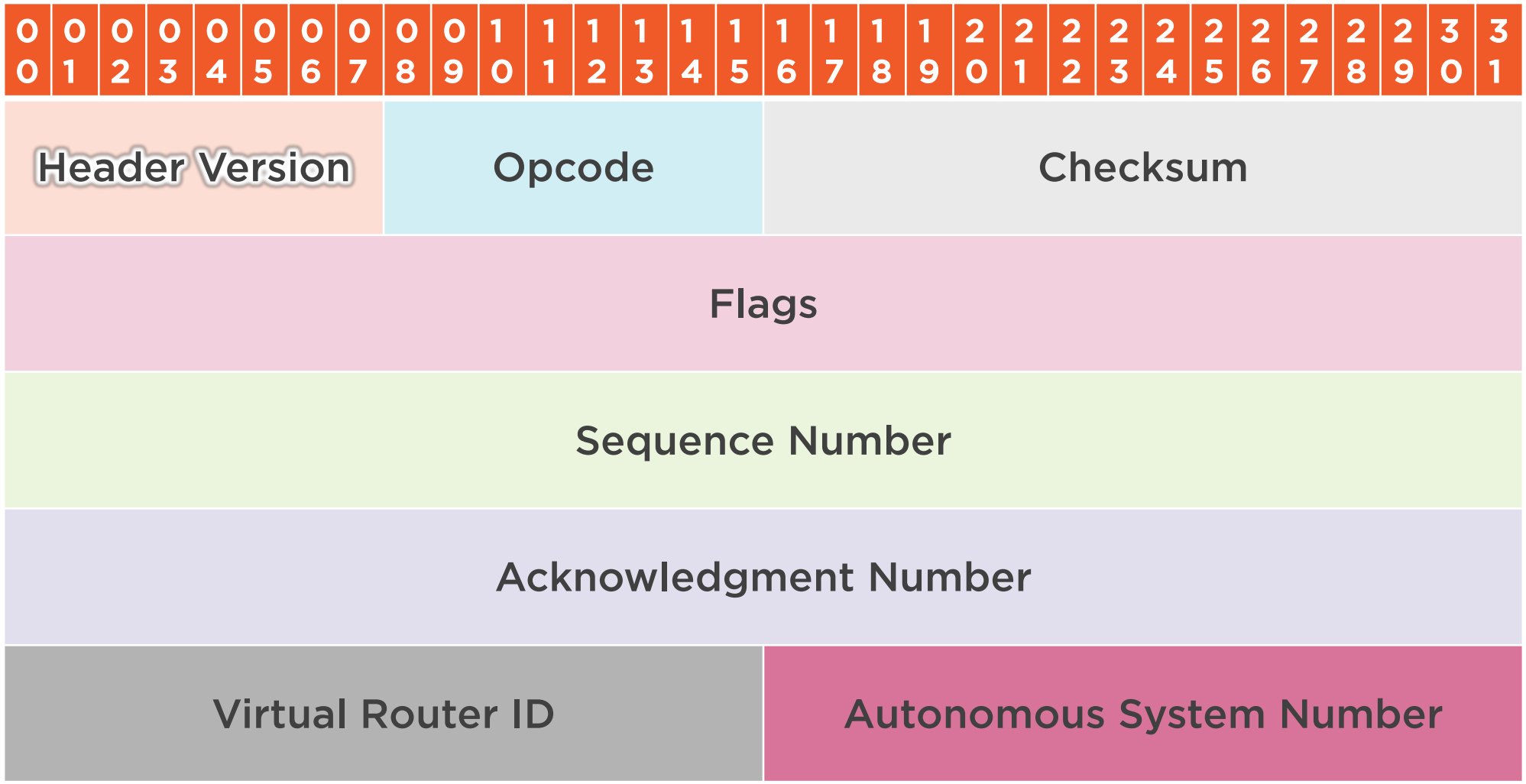

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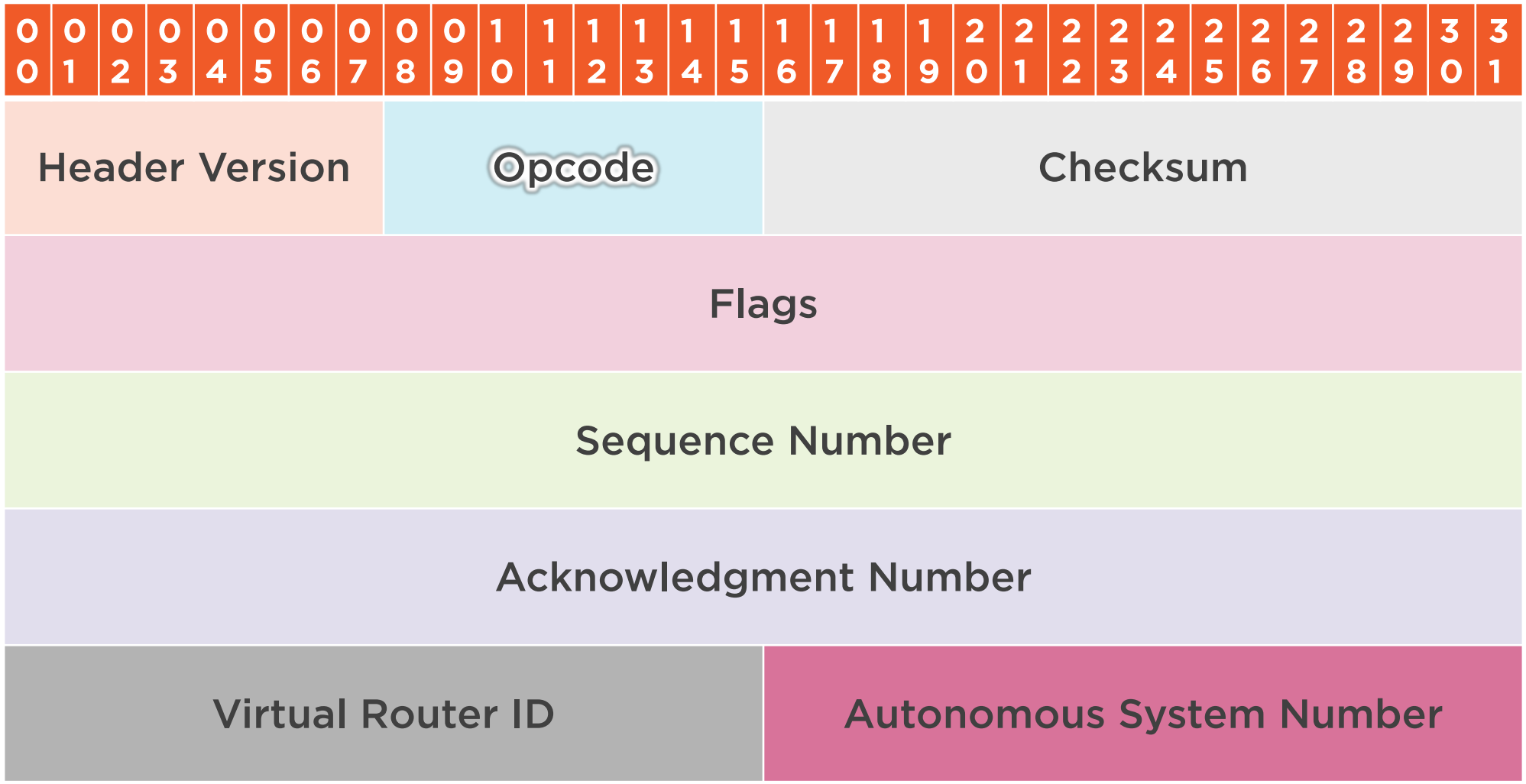


Opcode

Opcode

Update (1)

Opcode

Update (1)

Request (2)

Opcode

Update (1)

Request (2)

Query (3)

Opcode

Update (1)

Request (2)

Query (3)

Reply (4)

Opcode

Update (1)

Request (2)

Query (3)

Reply (4)

Hello (5)

Opcode

Update (1)

Request (2)

Query (3)

Reply (4)

Hello (5)

SIA query (10)

Opcode

Update (1)

Request (2)

Query (3)

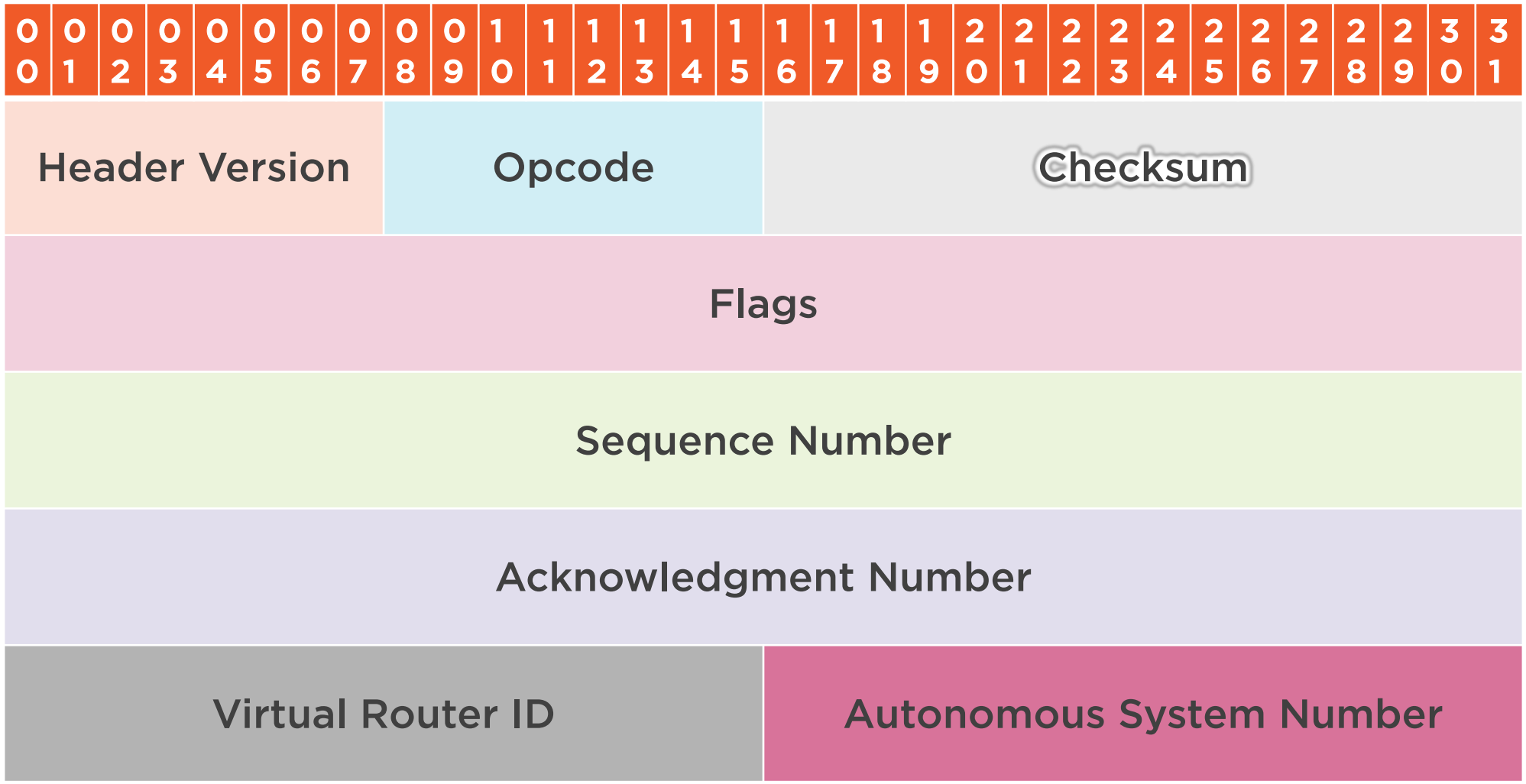
Reply (4)

Hello (5)

SIA query (10)

SIA reply (11)

EIGRP Packet Header



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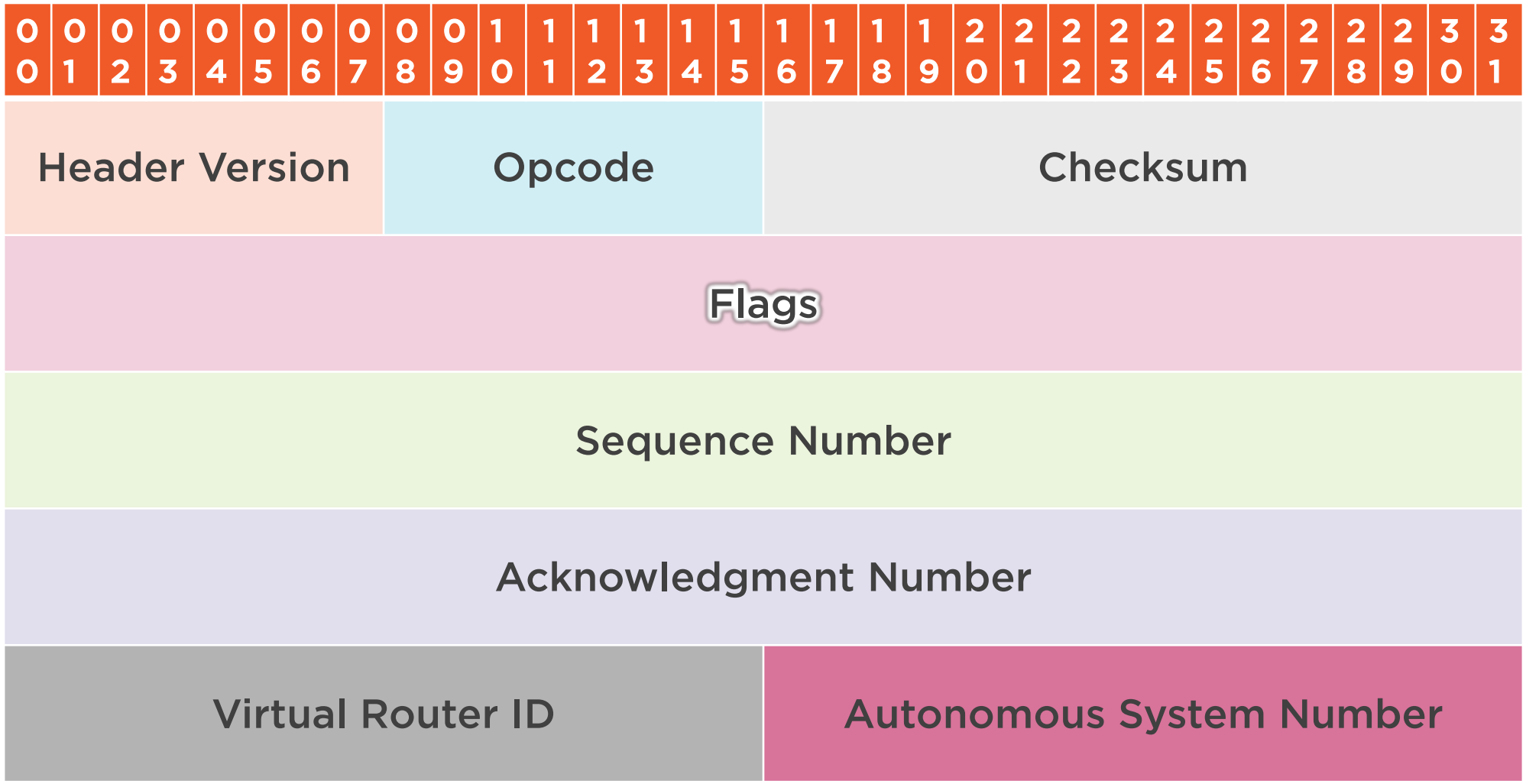


Flags

Flags

INIT

Flags

INIT

Conditionally received (CR)

Flags

INIT

Conditionally received (CR)

Restart (RS)

Flags

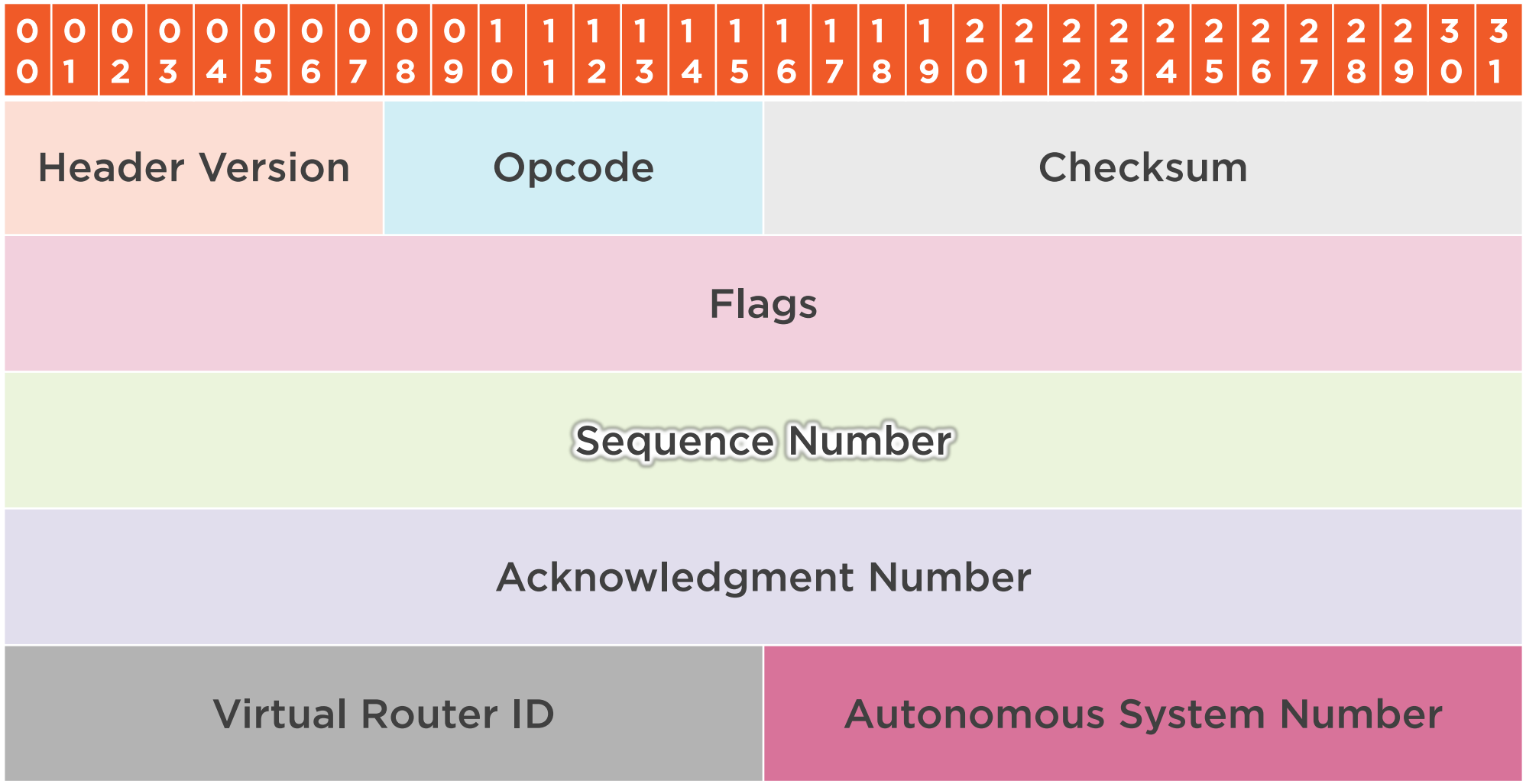
INIT

Conditionally received (CR)

Restart (RS)

End-of-table (EOT)

EIGRP Packet Header



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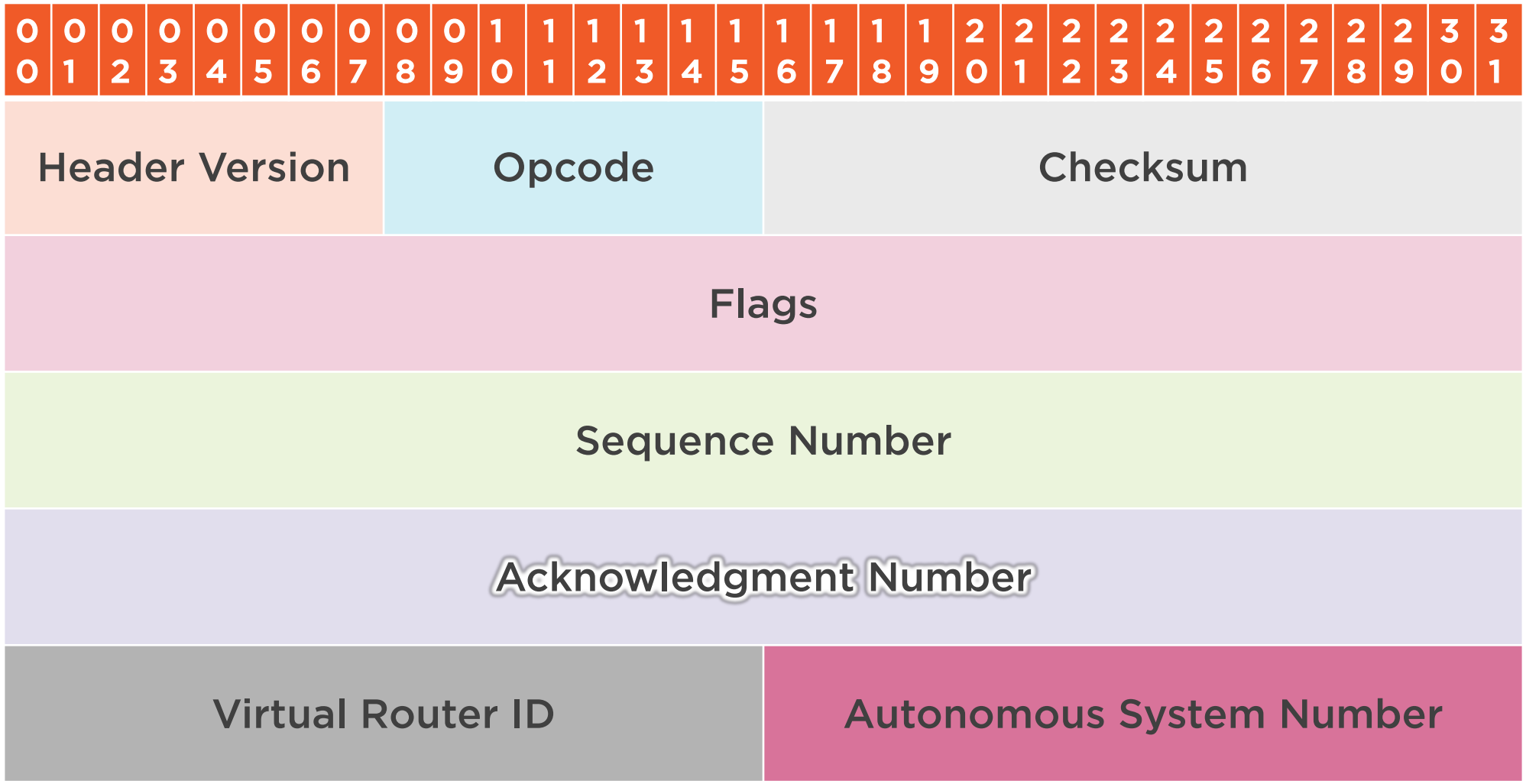

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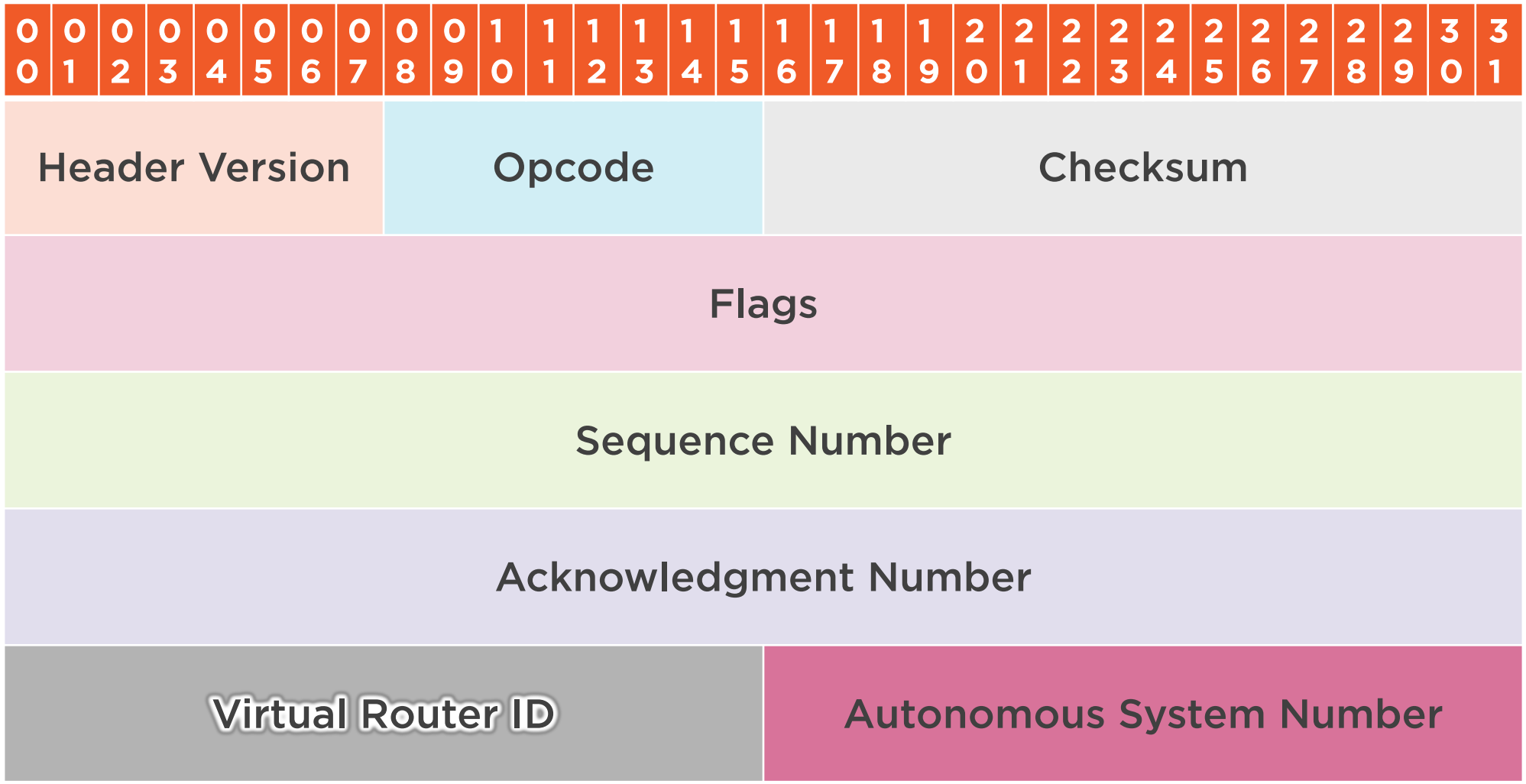

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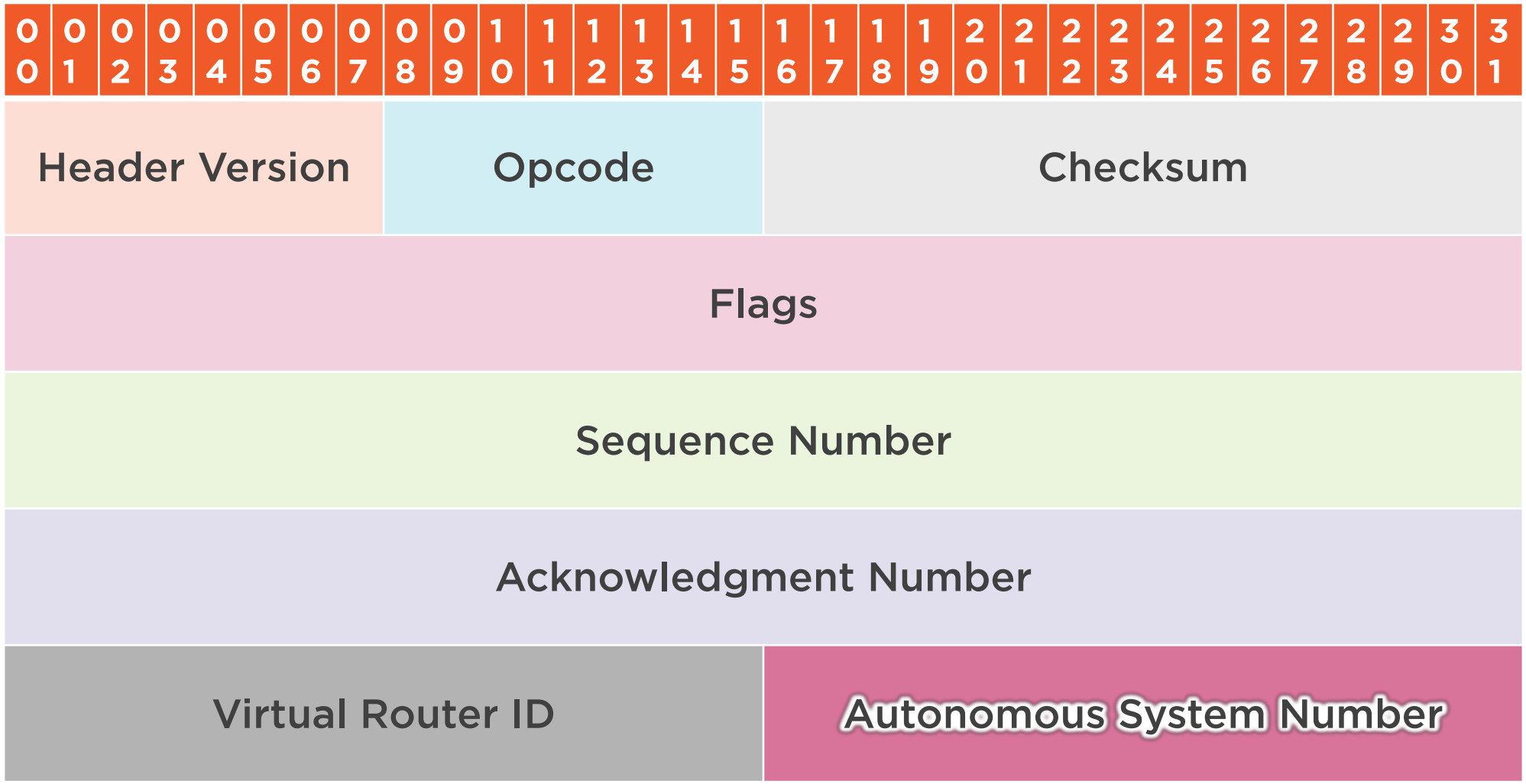
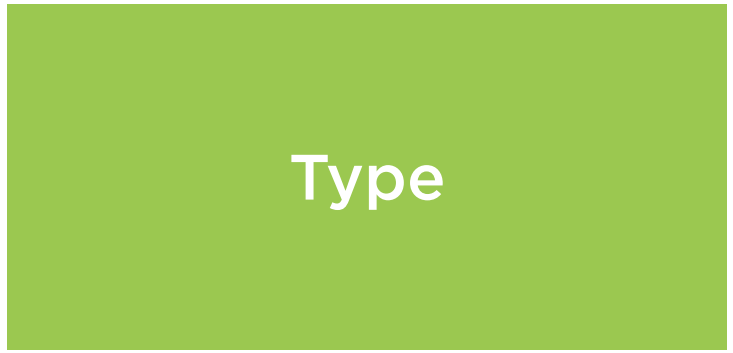


TLVs



TLVs

TLVs

TLVs

Type

Length

Value

Multiple combinations possible

TLVs

Type

Length

Value

Further coverage in next module

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