One-Time Address-Prefix Based ORF

draft-zeng-one-time-prefix-orf-00

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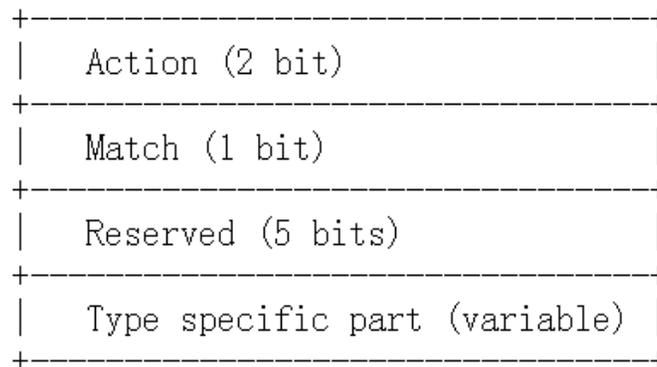
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Introduction

- During network maintenance, operators may need to retrieve some specific routes from peers
  - Trouble shooting
  - Route recovery
  - ...

- Operators concern about overhead of whole-RIB-out re-advertisement
  - Cost of unnecessary route processing & bandwidth
  - Difficulty in trouble shooting due to large amounts of information

- Do not want to change outbound policies on peers
  - One-time request

- A new maintenance tool may be needed

One-Time Address-Prefix ORF

- A new ORF-Type for one-time selective refresh
  - Action: ignored on receiver (no impact on peers' ORFs)
  - Match: reuse matching rules of Address-Prefix ORF
  - Type specific part: reuse format of Address-Prefix ORF

```
+----------------------------------+
|  Action (2 bit)                  |
+----------------------------------+
|  Match (1 bit)                   |
+----------------------------------+
|  Reserved (5 bits)               |
+----------------------------------+
|  Type specific part (variable)   |
+----------------------------------+
```

- Simple & lightweight maintenance tool
  - One-time selective refresh
  - History of received one-time ORF should be logged

Further extensions (if needed)

- One-Time Address-Prefix ORF would be mostly used for trouble shooting and recovery of specific routes

- Other types of one-time ORF could be defined if needed
  - One-time Aspath ORF
  - One-time Extended Communities ORF
  - ...

Next Steps

- Collecting comments & feedbacks

- Revise the draft

Alternate solutions I

- A new ORF Action: REFRESH

  – Pros:

    - Avoid defining new one-time ORFs for each ORF types

  – Cons:

    - There are no mechanisms in ORF to negotiate a new Action

    - The last unused action value: Add, Remove, Remove-All, ?

Alternate solutions II

- A new mechanism: Refresh Route Filter (RRF)

  – As an extension to plain refresh: selective refresh

  – Pros:

    - A lightweight maintenance tool, can be enabled independent from ORF

    - Shared filter type registry with ORF

  – Cons:

    - Mechanism similar to ORF, duplicated framework