One-Time Address-Prefix Based ORF

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

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Motivation

- In some scenarios operators need to retrieve routes with specific prefixes from peers
  - e.g. after treating malformed updates as withdraw

1. Malformed Updates

2. Treat as withdraw

3. Request re-advertisement for:
   - troubleshooting
   - route recovery
Motivation (cont.)

- Route Refresh [RFC2918] may not be suitable
  - Whole Adj-RIB-Out re-advertisement
  - Unnecessary route processing overhead
  - Unnecessary bandwidth consumption
  - Makes troubleshooting difficult due to large amount of Updates

- A lightweight operational tool is needed
One-time Address-Prefix ORF

- A new ORF type used to solicit one-time refresh for specific prefixes
  - Only used as one-time filters and MUST not change any previously installed ORF entry

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

- **Action**: ignored on receiver (no impact on peers’ ORFs)
- **Match**: reuse matching rules of Address-Prefix ORF (RFC5292)
- **Type specific part**: reuse format of Address-Prefix ORF

- One-Time ORF may be used in combination with enhanced RR for consistency validation of a subset of RIB
Next Steps

- Solicit comments & feedbacks
- Revise the draft
Backup Slides
Alternate solutions I

• A new ORF Action: REFRESH
  – Pros:
    • Avoid defining new one-time ORFs for each normal ORF types
  – Cons:
    • There is no mechanism in ORF to negotiate a new Action
    • The last unused action value (only 2 bits):
      – ADD, REMOVE, REMOVE-ALL, REFRESH?
Alternate solutions II

• A new mechanism: Refresh Route Filter (RRF)
  – As an extension to plain refresh: selective refresh
  – Pros:
    • A lightweight tool, can be enabled independent from ORF
    • Shares filter type registry with ORF
  – Cons:
    • Filtering mechanism similar to ORF, duplicated framework