PIM Backup
Designated Router Procedure

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When DR fails, new DR gets elected
- New DR starts building tree
- Convergence time would depend on
  - Time taken to detect the failure
  - Time taken to reprogram locally
  - Time taken to build tree

Some deployments are having time sensitive traffic and do not want to depend on new DR election. So there is need to have backup DR, which can build tree and does not forward the traffic to access.
Backup DR election

Use same algorithm which is defined in RFC 7761 to elect PIM DR, and 2nd best node becomes BDR.

```java
host
DR(I) {
    dr = me
    for each neighbor on interface I {
        if ( dr_is_better( neighbor, dr, I ) == TRUE
            dr = neighbor
        }
    }
    return dr
}
```
Sticky DR - Why?

- There are deployments which do not want accidental config to cause DR re-election and churn in network.
- As of now, if new PIM router comes up in network with higher priority, it would cause DR re-election and lead to churn in access network, new tree setup and possibly traffic loss.
Sticky DR Procedures – Step 1

DR election happens as per current standard.
Sticky DR Procedures – Step2

- Once DR is elected, it announce PIM_DR_MAX priority.
- Even if new router comes up with priority more than 100, it does not cause re-election.
Sticky DR – DR Fails

- Existing DR fails
- New DR takes over the DR role
- New DR now starts sending priority as PIM_DR_MAX
Implementation

• Cisco has implementation of this procedures
IANA Consideration – Discussion needed with WG

- Reserve PIM_MAX_DR value
- Do we need to send option in Hello for PIM Sticky DR support (we may not this as long as priority is taken care of)