

BGP SR Policy Extension for template

<https://datatracker.ietf.org/doc/html/draft-zhang-idr-sr-policy-template>

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Backgrounds

- BGP can be used to propagate the SR Policy candidate paths to the headend nodes in the network
- The BGP SR Policy encoding structure is as follows:

SR Policy SAFI NLRI: <Distinguisher, Policy-Color, Endpoint>

Attributes:

Tunnel Encaps Attribute (23)

Tunnel Type: SR Policy

Binding SID

SRv6 Binding SID

Preference

Priority

Policy Name

Policy Candidate Path Name

Segment List

Weight

Segment

...

...

- The basic attributes of the candidate path are defined in draft-ietf-idr-segment-routing-te-policy

Motivation & Problem Statement

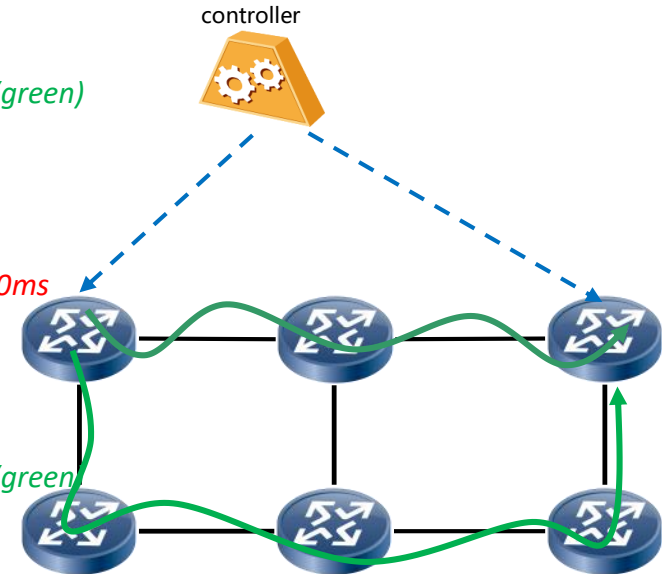
In application, the head-end routers may need to enable many features on the candidate path.

Reasons to introduce template:

- Some features are only meaningful to controller and head-end nodes, BGP protocol no need to know them, use template can shield information that BGP no need to know
- Features may change frequently, template can be used to avoid BGP protocol changes too frequently
- Different sr policies with the same feature can use the same template, thus can simplify configuration and improve maintainability

SR Policy
Endpoint 1.1.1.1 color 100(green)
Candidate Path
Preference 100
Backup path needed
Seamless BFD needed
BFD minimum tx interval 10ms
Traffic statistics needed
Segment List1

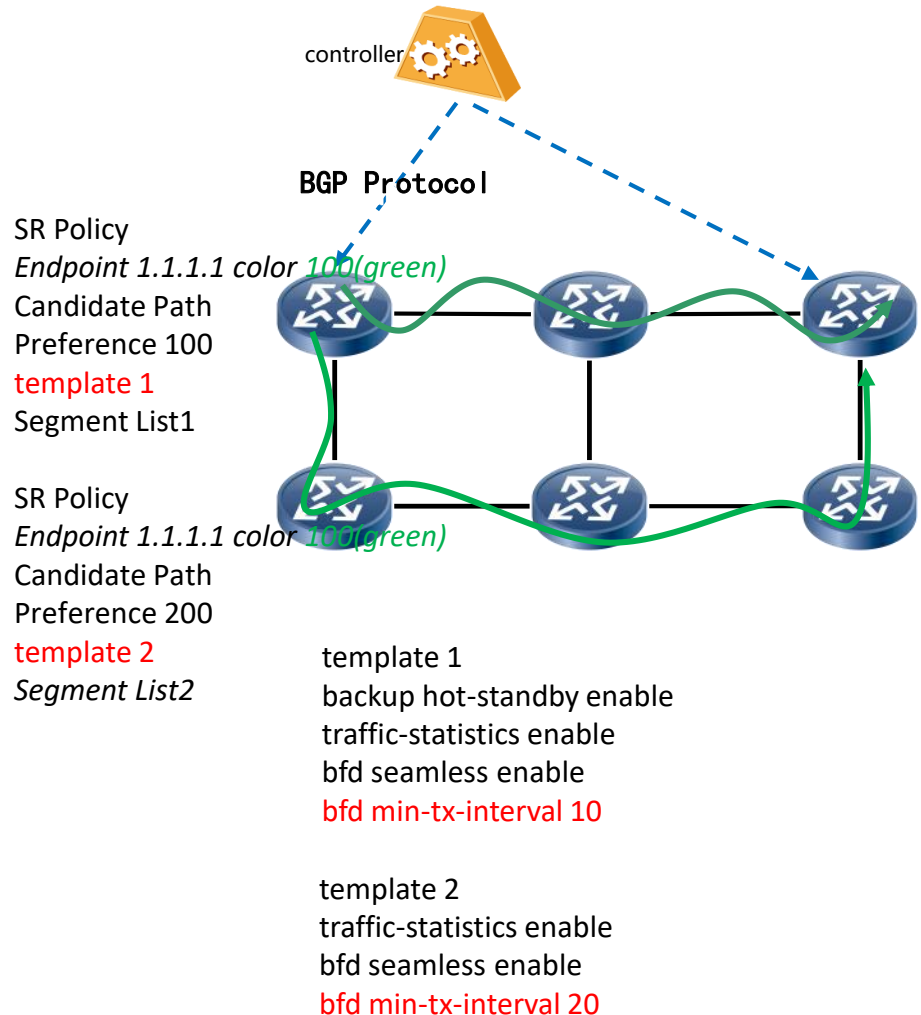
SR Policy
Endpoint 1.1.1.1 color 100(green)
Candidate Path
Preference 200
Seamless BFD needed
BFD minimum tx interval 20ms
Traffic statistics needed
Segment List2



Template process

Template:

- A group of features for sr policy candidate path
- Use an identifier which is meaningful to the head-end node of SR Policy
- template can be configured with template ID and template contents
- BGP protocol carries the template ID in SR Policy candidate path attributes
- SR Policy head-end nodes find the contents of template using template ID and setup path with the features defined in the template



BGP SR Policy Extension

SR Policy SAFI NLRI: <Distinguisher, Policy-Color, Endpoint>

Attributes:

Tunnel Encaps Attribute (23)

Tunnel Type: SR Policy

Binding SID

SRv6 Binding SID

Preference

Priority

Policy Name

Policy Candidate Path Name

Explicit NULL Label Policy (ENLP)

Template ID

Segment List

Weight

Segment

Segment

...

...

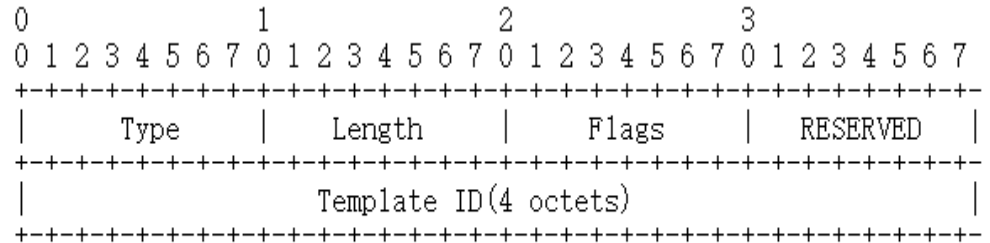


Figure 1: Template ID Sub-TLV

Where:

Type: Template ID, 1 octet, TBD.

Length: 6.

Flags: 1 octet of flags. None are defined at this stage.

Template ID: a 4-octet value.

Next Step

- Welcome questions and comments

Thank you!