IETF 110
SPRINGSR Compression Design Team Report

draft-srcompdt-spring-compression-requirement
draft-srcompdt-spring-compression-analysis

Members:
Ron Bonica, Darren Dukes, Wim Hendrickx, Cheng Li, Peng Shaofu, Chongfeng Xie

Presenter and Chair:
Weiqiang Cheng
The design team is to produce (rough) consensus (of the DT) outputs to the WG on two related topics:

1) What are the requirements for solutions to compressing segment routing information for use over IPv6;
   On-Going  -05 version

2) An analysis of proposed approaches to compressing segment routing information for use over IPv6.
   On-Going  -00 version
The latest revision is -05, which included all the requirements we’ve received, only three of which with rough but not unanimous consensus in design team was put in the appendix. Compared to revision -02, the blue highlighted items were moved to main text from appendix due to consensus in DT; the red highlighted items were new added.

3. SRv6 SID List Compression Requirements
   3.1. Dataplane Efficiency and Performance Requirements
      3.1.1. Encapsulation Header Size
      3.1.2. Forwarding Efficiency
      3.1.3. State Efficiency
   4. SRv6 Specific Requirements
      4.1. SRv6 Based
      4.2. Functional Requirements
         4.2.1. SRv6 Functionality
         4.2.2. Heterogeneous SID lists
         4.2.3. SID list length
         4.2.4. SID summarization
      4.3. Operational Requirements
         4.3.1. Lossless Compression
         4.3.2. Preservation of non-routing information
         4.3.3. Address Planning
      4.4. Scalability Requirements
         4.4.1. Adjacency segment scale
         4.4.2. Prefix segment scale
         4.4.3. Service Scale
         4.4.4. Compression Levels
   5. Protocol Design Requirements
      5.1. SRv6 Base Coexistence
      5.2. PS or BCP Compliance
   6. Security Requirements
      6.1. Security Mechanisms
      6.2. SR Domain Protection
   Appendix A. Proposed Requirements
      A.1. IPv6 Based
      A.2. Point to Multipoint
      A.3. Parsability
Next Steps for Requirements draft

- SPRING WG Review
- SPRING WG adoption?
Status of analysis draft

Based on the requirements draft, we post an analysis template (introduction, template format).

https://datatracker.ietf.org/doc/draft-srcompdt-spring-compression-analysis/

The following mechanisms are proposed to be analyzed in analysis draft

<table>
<thead>
<tr>
<th>Mechanism</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSID</td>
<td>Draft-filsfilscheng-spring-srv6-srh-comp-sl-enc</td>
</tr>
<tr>
<td>CRH</td>
<td>Draft-bonica-6man-comp-rtg-hdr</td>
</tr>
<tr>
<td>VSID</td>
<td>Draft-decraene-spring-srv6-vlsid</td>
</tr>
<tr>
<td>UID</td>
<td>Draft-mirsky-6man-unified-id-sr</td>
</tr>
</tbody>
</table>

Describes two new SRv6 SIDs, a combination of SIDs from [draft-filsfils-spring-net-pgm-extension-srv6-usid] and [draft-cl-spring-generalized-srv6-for-cmpr]

Requires two new routing header types and a label mapping technique

Defines a set of SID behaviors to access smaller SIDs within the SR header

Extends the SRH to carry MPLS labels or IPv4 addresses
## Analysis Completion Plan

### What we’ve done:

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 3</td>
<td>Analysis template (introduction, template format) proposed to srcomp@ietf</td>
</tr>
<tr>
<td>Feb 11</td>
<td>First analysis text proposed to srcomp@ietf</td>
</tr>
<tr>
<td>Feb 12</td>
<td>Decided to analyze 4 proposals (CSID,CRH,VSID,UID)</td>
</tr>
<tr>
<td>Feb 17</td>
<td>Team reviewed draft text, decided to complete requirements firstly</td>
</tr>
<tr>
<td>March 6</td>
<td>Requirements completed, revision 05 submitted, the key input for analysis</td>
</tr>
</tbody>
</table>

### Rough plan:

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid April</td>
<td>Complete remaining analysis text proposal for DT review</td>
</tr>
<tr>
<td>Late May</td>
<td>Review and submit a new revision for IETF SPRING WG &amp; 6 MAN WG review</td>
</tr>
</tbody>
</table>
Comments & Questions?