SAP: Session Announcement Protocol

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Overview

Extensions to SAP...

- IPv6 addresses
- IPv6 scoping
- MIME type
- SAP URL
Announcing IPv6 addresses

Reuse one bit from the MT field as an address type bit

<table>
<thead>
<tr>
<th>V=1</th>
<th>I</th>
<th>0</th>
<th>MT</th>
<th>E</th>
<th>C</th>
<th></th>
<th></th>
<th>auth</th>
<th>len</th>
<th>msg id</th>
<th>hash</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>0 1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

- originating source
  - (32/128 bits depending on A bit)
- optional authentication header
- optional timeout
- optional random field
- text payload

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IPv6 Scope Fields

- The IPv6 SAP address is FF0X:0:0:0:0:0:0:2:7FFE, where X is the 4-bit scope value.

- The following scope values are defined in IPv6:

<table>
<thead>
<tr>
<th>Value</th>
<th>Scope</th>
<th>Recommended Bandwidth</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x1</td>
<td>Node-local</td>
<td>n/a</td>
</tr>
<tr>
<td>0x2</td>
<td>Link-local</td>
<td>20 Kbps</td>
</tr>
<tr>
<td>0x5</td>
<td>Site-local</td>
<td>10 Kbps</td>
</tr>
<tr>
<td>0x8</td>
<td>Organization-local</td>
<td>1 Kbps</td>
</tr>
<tr>
<td>0xE</td>
<td>Global</td>
<td>200 bps</td>
</tr>
</tbody>
</table>
MIME Type

- Add a MIME Content-Type header to the start of the payload:
  
  Content-Type: application/sdp
  
  v=0
  o=...

- Allows for non-SDP payloads (SMIL?)
- Allows for fragmentation (message/partial)?
- May hinder interoperability
SAP URLS

Example: video "broadcast" using IP multicast, want to join from a web page. How do we do this?

- Reference an SDP file directly with an http URL
- Problem: the receiver may be out of scope of the multicast session, but has no way of knowing this.
- Solution: reference the announcement with a URL, if the receiver can see the announcement, it can see the media streams
  - Web browser has to implement SAP, must figure out how long to wait if the announcement isn’t the the cache, etc...
SAP URLs

- Each announcement has originating source and message ID fields
- The combination of these is unique per announcement
- Derive a URL from this...

  sap://128.16.64.45/1234
  sap:1234@128.16.64.45

- ...maybe?