SIMPLE Problem Statement

draft-ietf-simple-interdomain-scaling-analysis-01
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IETF 69 – SIMPLE WG
Changes

• Added and clarified computations
• Separated requirements to: draft-houri-sipping-presence-scaling-requirements-00.txt
• Separated suggestions for optimizations to: draft-houri-simple-interdomain-scaling-optimizations-00.txt
• NOTE: calculation error found by Marc Willekens that reduced the number of bytes by half, corrected draft and excel file are ready
Size Assumptions

- SUBSCRIBE – 450 bytes
- 200 OK (for SUBSCRIBE/NOTIFY) – 370 bytes
- NOTIFY (w/o presence document) – 500 bytes
- Presence document – 3000 bytes
- Partial presence document - 200 bytes
## Numbers

**Optimizations:**
- Dialog – Single subscription
- Etags – Suppress Notifies

<table>
<thead>
<tr>
<th>Model</th>
<th>Presence change/hour</th>
<th>Presentities per watcher</th>
<th># of watchers in domains</th>
<th>Msgs/Day non-optimized / optimized</th>
<th>Msgs/Sec non-optimized / optimized</th>
<th>Bytes/Sec non-optimized / optimized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic case</td>
<td>3</td>
<td>4</td>
<td>40,000</td>
<td>12.8M / 7.9M</td>
<td>444 / 275</td>
<td>707K / 506K</td>
</tr>
<tr>
<td>Widely dist. inter-domain / Associated inter-domain</td>
<td>3</td>
<td>20</td>
<td>40,000</td>
<td>65M / 36M</td>
<td>2,222 / 1,253</td>
<td>3.5M / 2.5M</td>
</tr>
<tr>
<td>Very large network peering</td>
<td>6</td>
<td>10</td>
<td>20M</td>
<td>25.6B / 18.8B</td>
<td>889K / 654K</td>
<td>1.5 G / 1.27G</td>
</tr>
</tbody>
</table>
## Very Large Network Peering Comparison

Presence change/hour – 6  
Presentities per watcher – 10  
# of Watchers - 20M

<table>
<thead>
<tr>
<th>Model</th>
<th>Messages per Day</th>
<th>Messages per Second</th>
<th>Bytes per Second</th>
</tr>
</thead>
<tbody>
<tr>
<td>No optimizations</td>
<td>25.6 Billion</td>
<td>889,000</td>
<td>1.5 Giga</td>
</tr>
<tr>
<td>Dialog+Etags</td>
<td>18.8 Billion</td>
<td>654,000</td>
<td>1.27Giga</td>
</tr>
<tr>
<td>Dialog+Etags+Partial</td>
<td>18.8 Billion</td>
<td>654,000</td>
<td>369Meg (!)</td>
</tr>
<tr>
<td>Other protocol (TCP based etc. e.g. XMPP)</td>
<td>9.8 Billion</td>
<td>340,278</td>
<td>1 Giga</td>
</tr>
</tbody>
</table>
Problem is Even Harder

- Assuming single device per user
- No external sources as location or calendar
- Rate of change is usually much higher than three per hour
- The issue will not be solved just by protocol optimization, we need to look at the issue from different point of view
Next

• WGLC for this draft?
• How we proceed in requirement?

*It is a real issue that needs to be addressed*