SIMPLE Problem Statement

draft-ietf-simple-interdomain-scaling-analysis-01

Avshalom Houri – IBM
Tim Rang - Microsoft
Edwin Aoki – AOL
Vishal Singh – Columbia University
Henning Schulzrine – Columbia University

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
- NOTIFY (w/o presence document) – 500
- Presence document – 3000
- Partial presence document - 200

Numbers

Optimizations:

Dialog – Single subscription
Etags – Suppress Notifies

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

Very Large Network Peering Comparison

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

Model	Messages per Day	Messages per Second	Bytes per Second
No optimizations	25.6 Billion	889,000	1.5 Giga
Dialog+Etags	18.8 Billion	654,000	1.27Giga
Dialog+Etags+Partial	18.8 Billion	654,000	369Meg (!)
Other protocol (TCP based etc. e.g. XMPP)	9.8 Billion	340,278	1 Giga

Problem is Even Harder

- Assuming single device per user
- No external sources as location or calendar
- Rate of change is usually much higher then 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