

RTCP Extensions & Report block for VoIP

Timur Friedman

Alan Clark

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Integrated draft

- RTCP Extensions 02 draft – Friedman
- VoIP Reporting Extensions 01 draft – Clark
- Combined 03 draft
 - Report block types
 - Experimental
 - Loss RLE
 - Duplicate RLE
 - Timestamp
 - Statistics Summary
 - Receiver Timestamp
 - DLRR
 - VoIP Metrics

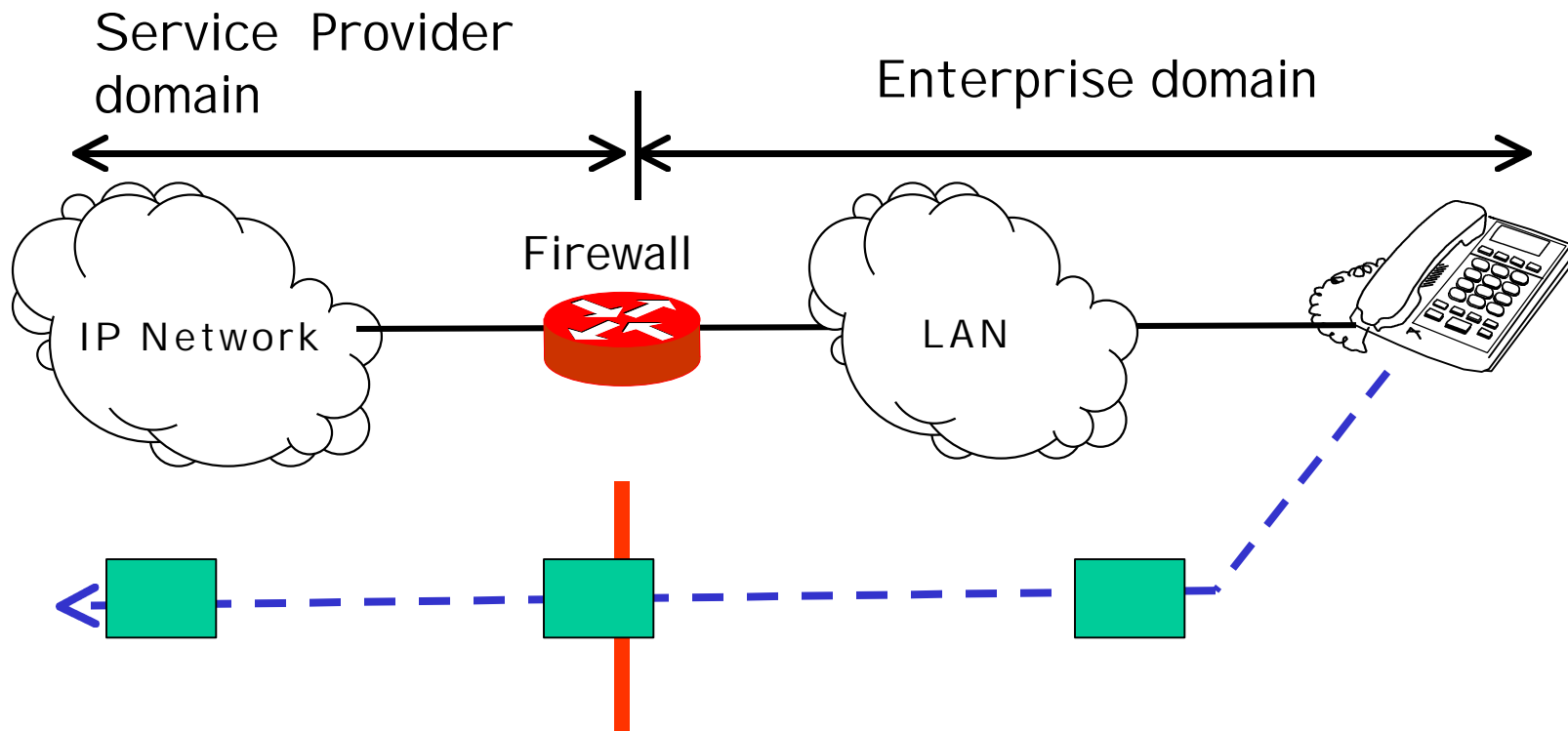
VoIP Metrics

- Added Implementation Specific provision – 24 bits
- Added Gmin parameter – allows some flexibility in deciding burst density threshold – default 16 corresponds to 6% minimum burst density
- Changed packet loss rate definitions to be binary fractions, consistent with RTCP usage
- Kept stats as cumulative – tolerant of lost reports & minimize data storage required by mid-stream monitoring systems
- Kept delays as mS – widely used and understood in this application
- Added definitions for null cases, e.g. if there were no bursts
- For some parameters – added “not available” value.
 - Desirable to keep most parameters as required to encourage implementers to provide a consistent data set (may have multiple vendors in a network)
- Added MOS-LQ (listening) and MOS-CQ (conversational)
 - Needed to make it clear whether delay is or is not included in estimated MOS

VoIP Metrics Report Block

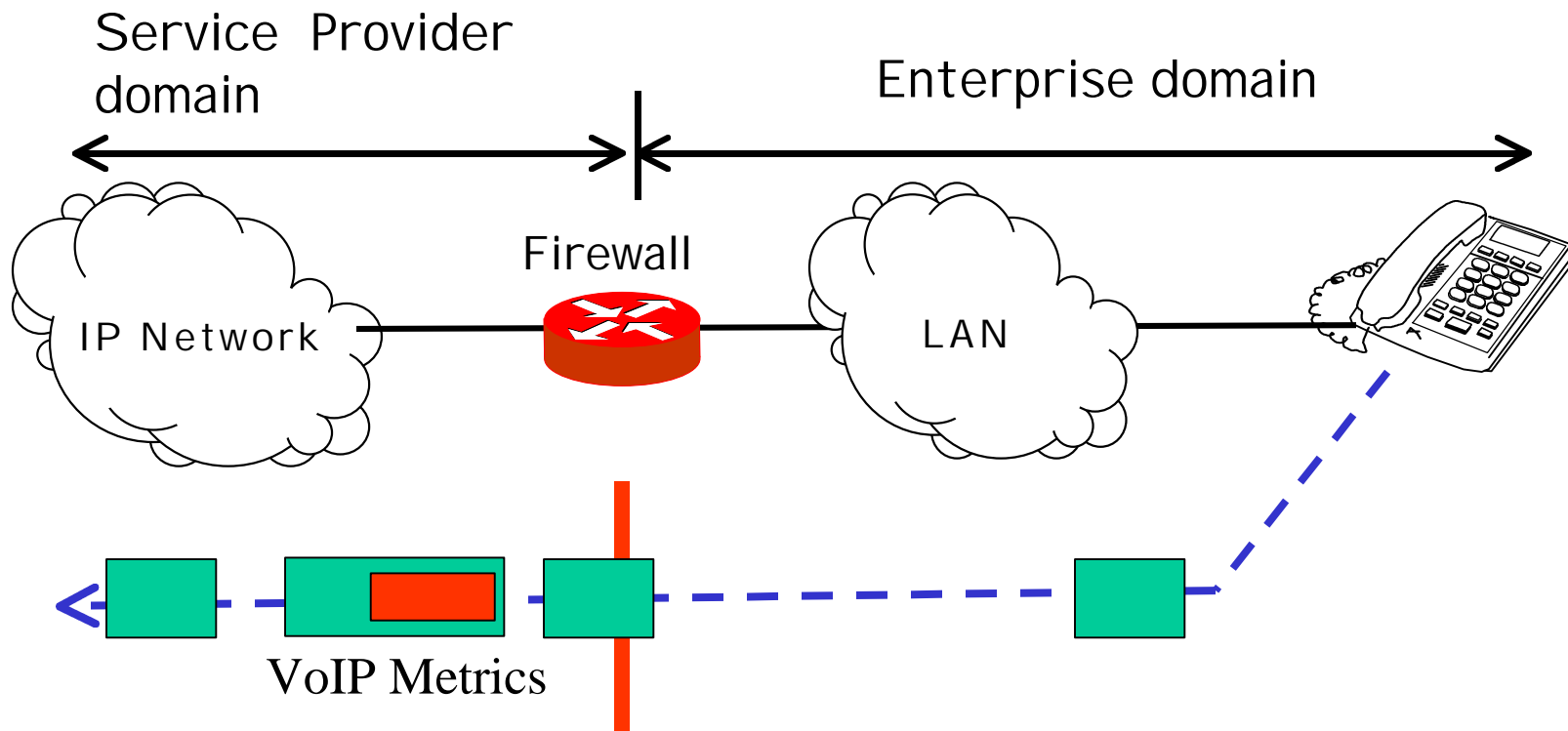
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0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
|      BT      | not used      |           length=6           |
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
|  Loss Rate  | Discard rate  |           Burst duration           |
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
| Burst density |      Gap duration      |           Gap density           |
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
|  Round trip delay      |           End system delay           |
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
|  Sig power  |  Echo level  | Noise level  |  Distortion  |
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
|  R Factor  |  R external  |  MOS-LQ     |  MOS-CQ     |
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
|  Gmin     |  Implementation Specific           |
+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+--+
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IP Centrex problem



Service provider is "responsible" for call quality but only has control over the IP network and no visibility into the corporate LAN

RTCP Extensions – helps



RTCP extension for VoIP provides constant real time feedback from endpoints