

VoIP Performance Management

Using Embedded Agents

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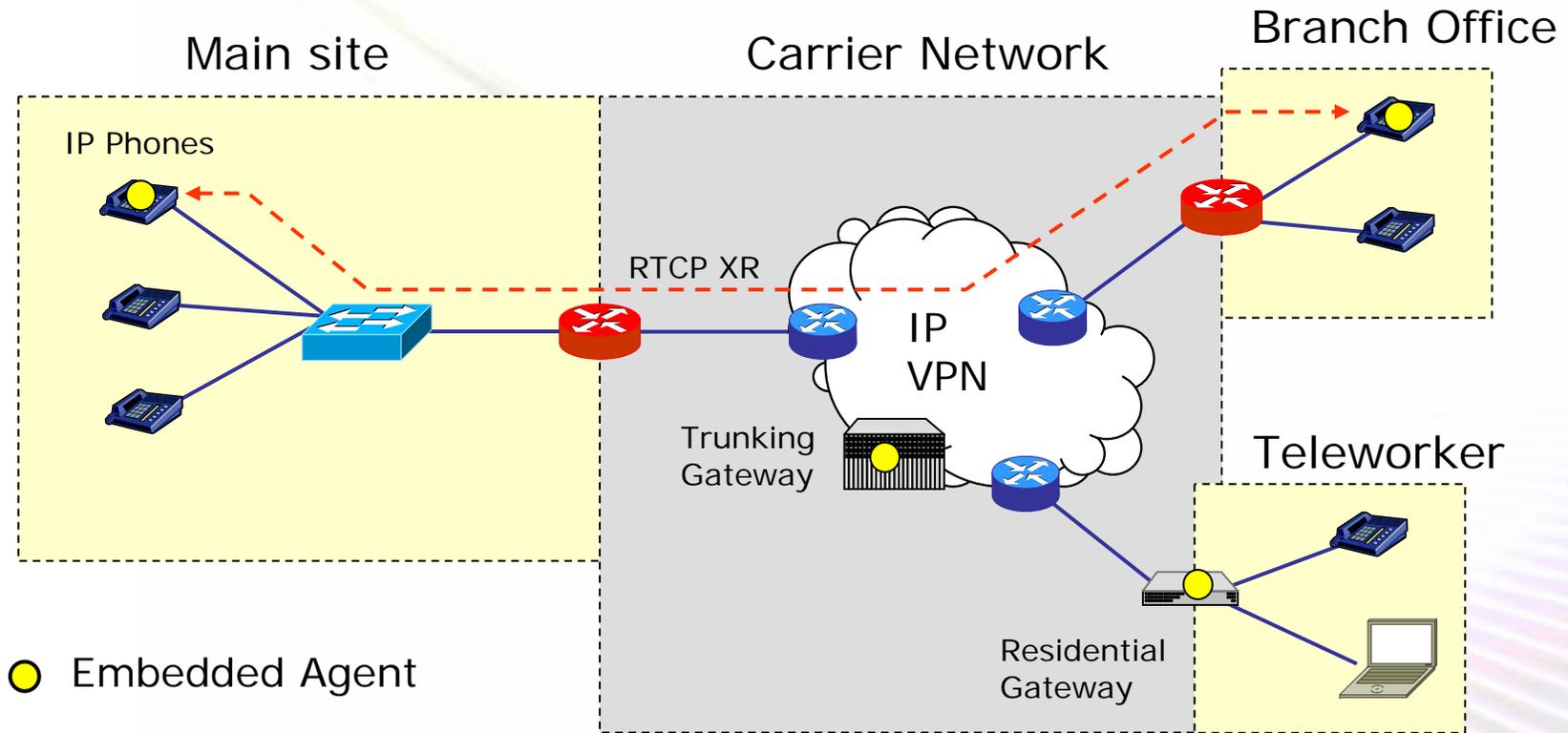


IP Voice/Video Management

- Voice/Video problems are very obvious to the user
- Problems can be transient and occur anywhere along the IP path
- Ideally – monitor every call end-to-end to detect and diagnose problems
- How?

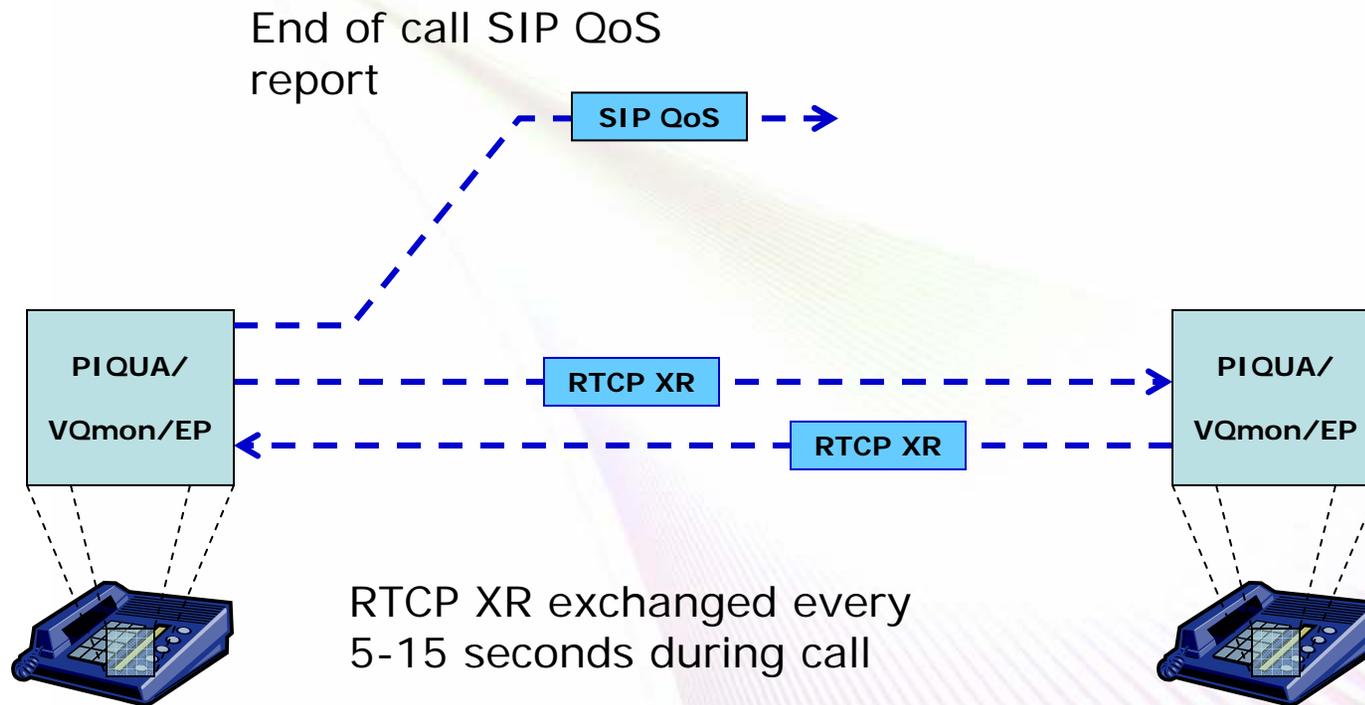
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Embedded Agents



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Performance Reporting



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RTCP XR Reports

Loss Rate	Discard Rate	Burst Density	Gap Density
Burst Duration (mS)		Gap Duration (mS)	
Round Trip Delay (mS)		End System Delay (mS)	
Signal level	RERL	Noise Level	Gmin
R Factor	Ext R	MOS-LQ	MOS-CQ
Rx Config	-	Jitter Buffer Nominal	
Jitter Buffer Max		Jitter Buffer Abs Max	

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SIP RTCP Summary

PUBLISH sip:collector@example.com SIP/2.0

Via: SIP/2.0/UDP pc22.example.com;branch=z9hG4bK3343d7

.....

Content-Type: application/rtpcpxr

Content-Length: ...

VQSessionReport

LocalMetrics:

TimeStamps=START:10012004.18.23.43 STOP:10012004.18.26.02

SessionDesc=PT:0 PD:G.711 SR:8000 FD:20 FPP:2 PLC:3 SSUP:on

CallID=1890463548@alice.uac.chicago.com

.....

Signal=SL:2 NL:10 RERL:14

QualityEst=RLQ:90 RCQ:85 EXTR:90 MOSLQ:3.4 MOSCQ:3.3

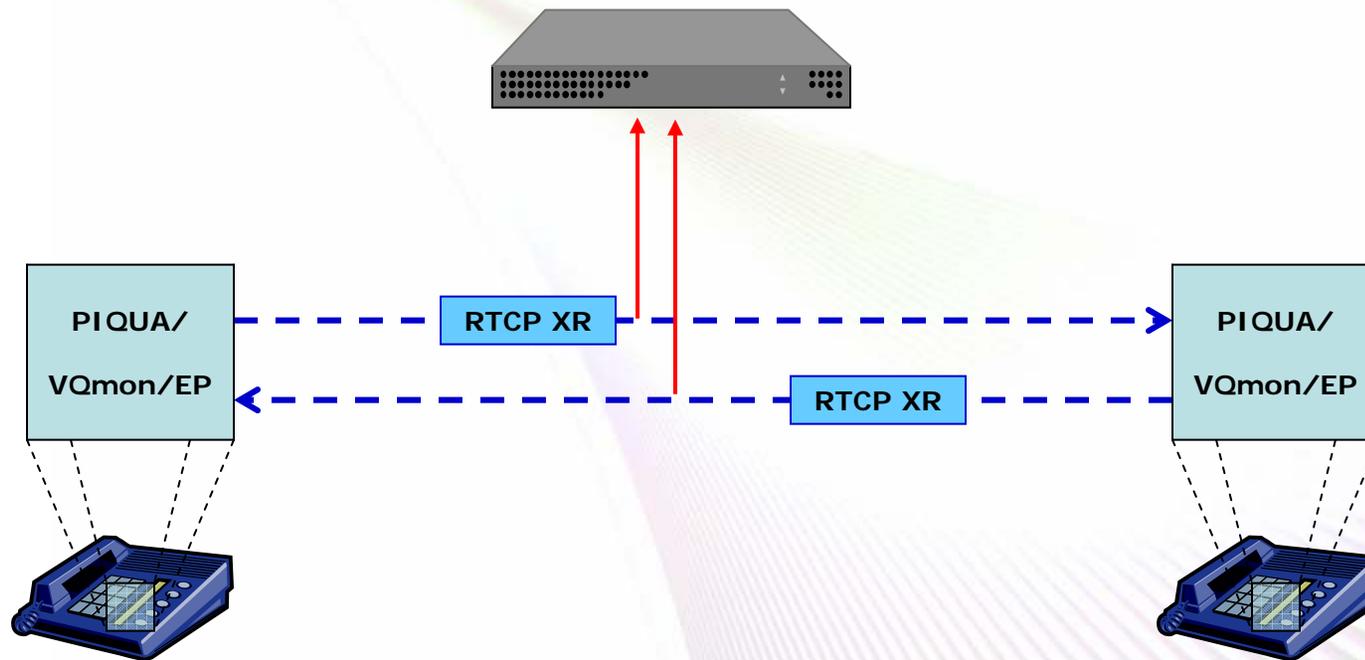
QoEEstAlg:VQMonv2.1

DialogID:38419823470834;to-tag=8472761;from-tag=9123dh311

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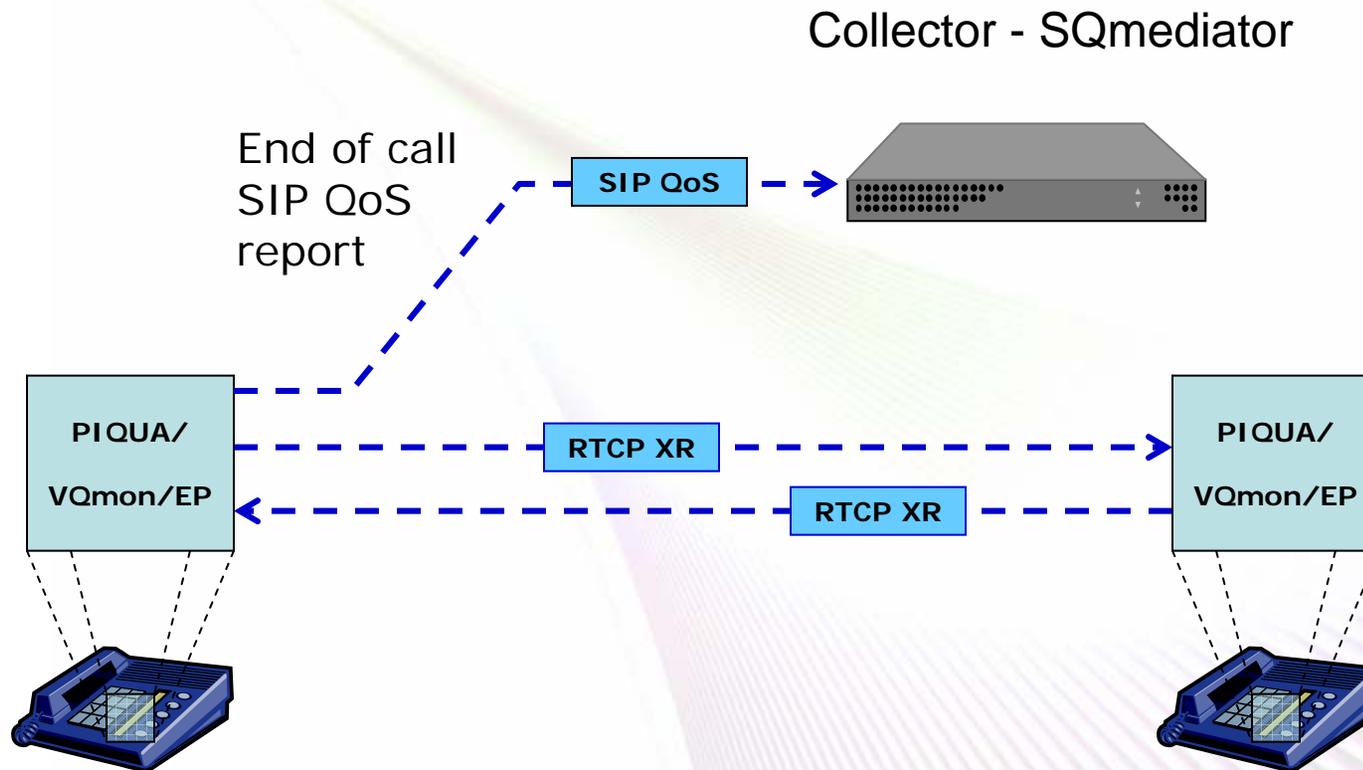
RTCP XR and Probes

Probe or Analyzer - SQprobe



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SIP Report Collection



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Key Points

- Embedded agent performance reporting model
 - Efficient
 - Scalable
 - Informative
 - Standardized protocols
 - Complementary to probes & analyzers

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VoIP Performance Management

Using Embedded Agents

Contact:

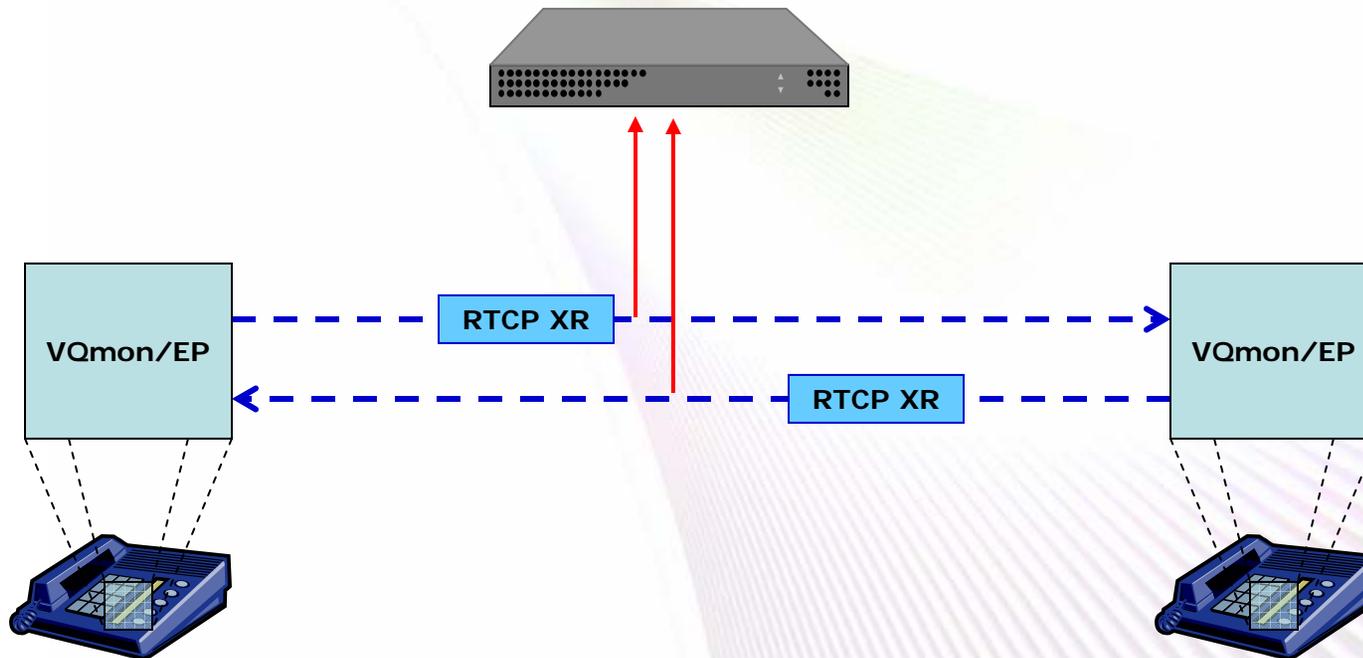
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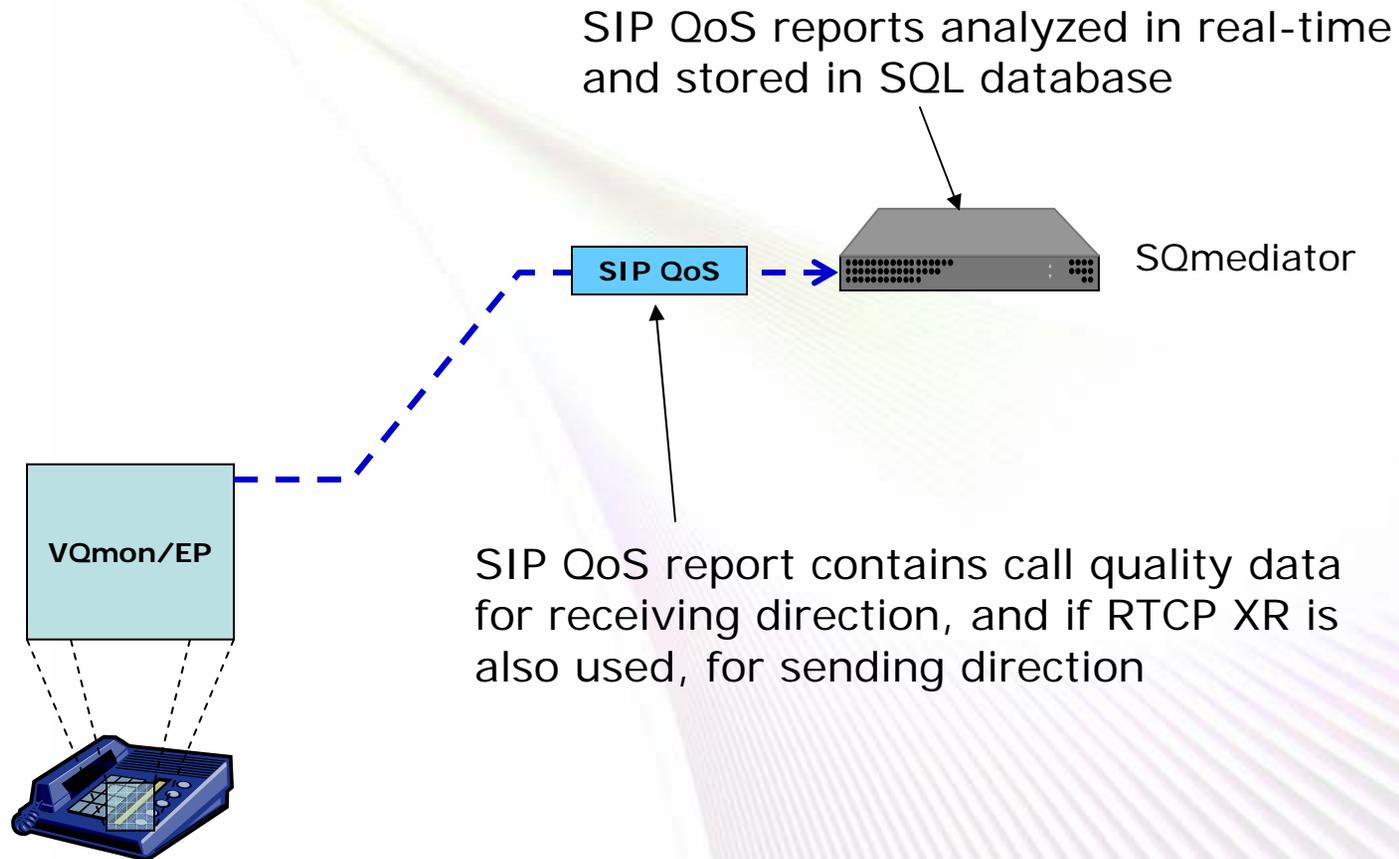
SQprobe for mid-stream analysis/collection

SQprobe - analyzes RTP streams directly, collects RTCP XR messages and integrates local measurements with endpoint reported data



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SQmediator for call quality reporting



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