

SIP PUBLISH & SPA30x and SPA5xxG IP Phones

The SPA303 and SPA5xxG IP Phones support SIP PUBLISH as of firmware release 7.4.6.

The phones use SIP PUBLISH as described in RFC3903 to send at the end of a phone call, RTCP-XR-type statistics to a configured "collector". More information about RTCP-XR is available in RFC3611.

Following is an example of the information sent from a SPA50xG IP phone to a defined SIP PUBLISH Collector:

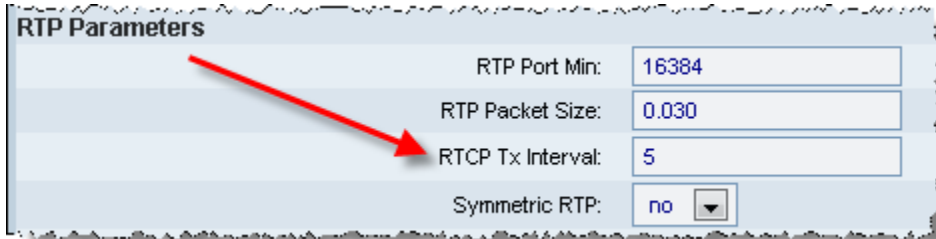
```
Internet Protocol, Src: 192.168.2.1 (192.168.2.1), Dst: 192.168.2.1 (192.168.2.1)
User Datagram Protocol, Src Port: sip (5060), Dst Port: onscreen (5080)
Session Initiation Protocol
  Request-Line: PUBLISH sip:collector@192.168.2.1:5080 SIP/2.0
  Message Header
  Message Body
    VQSessionReport: CallTerm\r\n
    LocalMetrics:\r\n
    Timestamps:START=1969-12-31T16:11:53Z STOP=1969-12-31T16:12:8Z\r\n
    SessionDesc:PT=9 PD=G722 SR=16000 FD=20 FO=80 FPP=2 PPS=100 PLC=1 SSUP=off\r\n
    CallID: ae1a223a-4b41f76f@192.168.2.1\r\n
    FromID: "BS8004" <sip:8004@192.168.2.1>\r\n
    ToID: "8003" <sip:8003@192.168.2.1>\r\n
    OrigID: "BS8004" <sip:8004@192.168.2.1>\r\n
    LocalAddr: IP=192.168.2.1 PORT=16404 SSRC=3883229079\r\n
    LocalMAC: 00:27:0d:58:1f:28\r\n
    RemoteAddr: IP=192.168.2.1 PORT=0 SSRC=3208418748\r\n
    RemoteMAC: 0\r\n
    JitterBuffer:JBA=3 JBR=2 JBN=100 JBM=100 JBX=960\r\n
    PacketLoss:NLR=0 JDR=0\r\n
    BurstGapLoss:BLD=0 BD=0 GLD=0 GD=63140 GMIN=16\r\n
    Delay:RTD=0 ESD=204 SOWD=102\r\n
    Signal:RERL=127\r\n
    QualityEst:RLQ=127 RCQ=69 MOSLQ=3.5 MOSCQ=3.5 QoEEstAlg=P.564\r\n
    DialogID:2859360;to-tag=803a9bbe9eee2bbbo0;from-tag=1994482749-1288125122810\r\n
```

Note: The image has been modified to obscure sensitive information

Enabling SIP PUBLISH

There are two steps to enabling SIP PUBLISH on a phone:

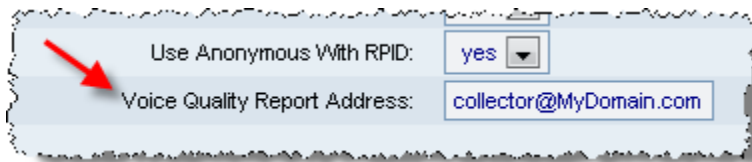
1. Configure the **SIP tab > RTP Parameters > RTCP_Tx_Interval** to be greater than 0 seconds [0 = disable]



The screenshot shows the 'RTP Parameters' configuration page. A red arrow points to the 'RTCP Tx Interval' field, which is set to '5'. Other fields include 'RTP Port Min' (16384), 'RTP Packet Size' (0.030), and 'Symmetric RTP' (no).

RTP Parameters	
RTP Port Min:	16384
RTP Packet Size:	0.030
RTCP Tx Interval:	5
Symmetric RTP:	no

2. Configure the **Ext N tab > SIP Settings > Voice Quality Report Address:**
 - name@FQDN [example collector@MyDomain.com]
 - name@IP_Address [example collector@10.10.10.10]
 - IP_Address [example: 10.10.10.10]



The screenshot shows the 'Voice Quality Report Address' configuration page. A red arrow points to the 'Voice Quality Report Address' field, which is set to 'collector@MyDomain.com'. The 'Use Anonymous With RPID' field is set to 'yes'.

Use Anonymous With RPID:	yes
Voice Quality Report Address:	collector@MyDomain.com

3. Save All Changes. The phone will now send a SIP PUBLISH to the identified collector at the end of each call.

Authentication

SIP PUBLISH uses the same authentication mechanism defined for SIP REGISTER in RFC3261.

Currently the SPA IP phones do not support SIP PUBLISH authentication between the phone and the collector. SPA phones, do of course, authenticate between user-agent servers and user-agent client for SIP REGISTER events.

RFC3261 describes and defines the need for authenticating of SIP **registration** in order to reduce:

- Registration Hijacking
- Server Impersonation
- Message Body Tampering
- Tearing Down Sessions
- Denial of Service Attacks

Consider that while SPA phones do not currently support authentication for SIP PUBLISH, risk is somewhat limited because:

- You configure the Voice_Quality_Report_Address that phones use as the SIP PUBLISH data target
This address will not be a secret on the Internet.
- The phones "throw the PUBLISH data over the fence" in that there is no verification of receipt
The collector collects the information as it arrives, to be analyzed at a later time.
- In the event that you are concerned that a denial of service (DoS) attack could be launched against your SIP PUBLISH Collector, you could install an access control list (ACL) in front of the collector so that you can limit, by MAC address, access to the collector.
- The SPA phones can be configured to enable SIP over TLS (RFC5246) which encrypts all SIP signaling.

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