

ST20XX SIP New Features (SG vx.59)

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1 Overview

This document describes a set of features included in ST2030 and S2022 SIP v1.59 and 3.59 respectively in order to improve their usability in different environments.

2 Tracing tool

Tracing tool is a new feature that allows administrators to get SIP level traces remotely. Through telnet phone interface, sent and received SIP messages flow can be obtained. SIP data provided by this tool is shown split in headers and packet body as follows:

```
Recv from udp: 10.0.0.5:5060 00:00:00:01:066 (937 bytes)

INVITE sip:2205@10.0.0.55:5060 SIP/2.0
Via: SIP/2.0/UDP 10.0.0.5:5060;branch=z9hG4bK2b55f27f;rport
From: "Thomson-2204" <sip:2204@10.0.0.5>;tag=as1b93c676
To: <sip:2205@10.0.0.55:5060>
Contact: <sip:2204@10.0.0.5>
Call-ID: 7b068be424cee3565279b5cb075e248b@10.0.0.5
CSeq: 102 INVITE
User-Agent: Asterisk 1.4.11
Max-Forwards: 70
Remote-Party-ID: "Thomson-2204" <sip:2204@10.0.0.5>;privacy=off;screen=no
Date: Mon, 14 Jan 2008 14:17:14 GMT
Allow: INVITE, ACK, CANCEL, OPTIONS, BYE, REFER, SUBSCRIBE, NOTIFY
Supported: replaces
Alert-Info: <http://notused.com>;info=Clocks
P-Asserted-Identity: <sip:Asterisk@10.0.0.5>
Content-Type: application/sdp
Content-Length: 254

v=0
o=root 2036 2036 IN IP4 10.0.0.5
s=session
c=IN IP4 10.0.0.5
t=0 0
m=audio 17836 RTP/AVP 0 8 101
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=silenceSupp:off - - -
a=ptime:20
a=sendrecv
```

At first glance it can be noted there are two parts in the information for each packet.

The first one includes:

- packet sent or received

- destination address and port (for a sent packet) or source (for received packet).
- a time stamp, to locate the packets in the real time
- packet size

Second part is packet content itself.

2.1 Feature Activation

To use Tracing tool, a telnet connection has to be open. Then, feature will be enabled or disabled through a command: **sip tracer on / sip tracer off**.

Usual steps and output example:

```
telnet <ip>
Login: administrator
Password: 789234

[administrator]# sip tracer on

[administrator]#

[administrator]# Recv from udp: 10.0.0.5:5060 00:00:00:01:066 (937 bytes)

INVITE sip:2205@10.0.0.55:5060 SIP/2.0
Via: SIP/2.0/UDP 10.0.0.5:5060;branch=z9hG4bK2b55f27f;rport
From: "Thomson-2204" <sip:2204@10.0.0.5>;tag=as1b93c676
To: <sip:2205@10.0.0.55:5060>
Contact: <sip:2204@10.0.0.5>
Call-ID: 7b068be424cee3565279b5cb075e248b@10.0.0.5
CSeq: 102 INVITE
User-Agent: Asterisk 1.4.11
Max-Forwards: 70
Remote-Party-ID: "Thomson-2204" <sip:2204@10.0.0.5>;privacy=off;screen=no
Date: Mon, 14 Jan 2008 14:17:14 GMT
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Alert-Info: <http://notused.com>;info=Clocks
P-Asserted-Identity: <sip:Asterisk@10.0.0.5>
Content-Type: application/sdp
Content-Length: 254

v=0
o=root 2036 2036 IN IP4 10.0.0.5
s=session
c=IN IP4 10.0.0.5
t=0 0
m=audio 17836 RTP/AVP 0 8 101
a=rtpmap:0 PCMU/8000
a=rtpmap:8 PCMA/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-16
a=silenceSupp:off - - -
a=ptime:20
a=sendrecv

Sent to udp: 10.0.0.5:5060 00:00:00:01:096 (259 bytes) SIP/2.0 100 Trying

Via: SIP/2.0/UDP 10.0.0.5:5060;branch=z9hG4bK2b55f27f;rport
From: "Thomson-2204" <sip:2204@10.0.0.5>;tag=as1b93c676
To: <sip:2205@10.0.0.55:5060>
Call-ID: 7b068be424cee3565279b5cb075e248b@10.0.0.5
CSeq: 102 INVITE
Content-Length: 0
```

```
Sent to udp: 10.0.0.5:5060 00:00:00:01:126 (472 bytes) SIP/2.0 180 Ringing

Via: SIP/2.0/UDP 10.0.0.5:5060;branch=z9hG4bK2b55f27f;rport
From: "Thomson-2204" <sip:2204@10.0.0.5>;tag=aslb93c676
To: <sip:2205@10.0.0.55:5060>;tag=c0a80101-79d86
Call-ID: 7b068be424cee3565279b5cb075e248b@10.0.0.5
CSeq: 102 INVITE
Allow: INVITE,ACK,BYE,CANCEL,OPTIONS,PRACK,SUBSCRIBE,NOTIFY,UPDATE,REFER,REGISTER,INFO
Contact: <sip:2205@10.0.0.55:5060>
Allow-Events: reg,refer,dialog,message-summary,check-sync,talk,hold
Content-Length: 0

Sent to udp: 10.0.0.5:5060 00:00:00:02:896 (691 bytes)

SIP/2.0 200 OK
Via: SIP/2.0/UDP 10.0.0.5:5060;branch=z9hG4bK2b55f27f;rport
From: "Thomson-2204" <sip:2204@10.0.0.5>;tag=aslb93c676
To: <sip:2205@10.0.0.55:5060>;tag=c0a80101-79d86
Call-ID: 7b068be424cee3565279b5cb075e248b@10.0.0.5
CSeq: 102 INVITE
Allow: INVITE,ACK,BYE,CANCEL,OPTIONS,PRACK,SUBSCRIBE,NOTIFY,UPDATE,REFER,REGISTER,INFO
Contact: <sip:2205@10.0.0.55:5060>
Allow-Events: reg,refer,dialog,message-summary,check-sync,talk,hold
Content-Type: application/sdp
Content-Length: 191

v=0
o=2205 499958 499958 IN IP4 10.0.0.55
s=-
c=IN IP4 10.0.0.55
t=0 0
m=audio 41000 RTP/AVP 0 101
a=rtpmap:0 PCMU/8000
a=rtpmap:101 telephone-event/8000
a=fmtp:101 0-15
a=sendrecv

Recv from udp: 10.0.0.5:5060 00:00:00:02:908 (445 bytes)

ACK sip:2205@10.0.0.55:5060 SIP/2.0
Via: SIP/2.0/UDP 10.0.0.5:5060;branch=z9hG4bK6c7d8777;rport
From: "Thomson-2204" <sip:2204@10.0.0.5>;tag=aslb93c676
To: <sip:2205@10.0.0.55:5060>;tag=c0a80101-79d86
Contact: <sip:2204@10.0.0.5>
Call-ID: 7b068be424cee3565279b5cb075e248b@10.0.0.5
CSeq: 102 ACK
User-Agent: Asterisk 1.4.11
Max-Forwards: 70
Remote-Party-ID: "Thomson-2204" <sip:2204@10.0.0.5>;privacy=off;screen=no
Content-Length: 0
```

3 Download and update tone and language tables

Downloading and updating Tone table or Language table capability has been added to improve and enhance admin possibilities in terms of managing languages and tones of his/her phone/s.

Phone provides 9 language tables (English, French, Spanish, German, Italian, Norway, Russian, Portuguese, Deutsch), and now, 1 more extra language that can be uploaded by the admin.

Likewise, phone provides 11 tone tables (United States, France, Germany, Italy, Netherlands, Portugal, Spain, United Kingdom, Czech Rep, Slovenia, Austrian), and now, 1 more extra tone table that can be uploaded by admin.

Currently, ST20xx only support one additional table for Language and Tone, and user **can not** modify the original Tone or Language tables.

3.1 How to get the Templates:

To create the new extra Tone or Language table, first you must dump one file via Web GUI, then modify and upload it, based on the dumped file.

You can also do it through Telnet:

```
[administrator]# tftp2
tftp2 telcpg X.X.X.X filename [f/F]
tftp2 all X.X.X.X filename [f/F]
tftp2 melody X.X.X.X filename
tftp2 sys_melody X.X.X.X filename
tftp2 cwt_melody X.X.X.X filename
tftp2 listparms X.X.X.X filename
tftp2 listlangtable X.X.X.X filename Language-index
tftp2 langtable X.X.X.X filename
tftp2 listtonetable X.X.X.X filename Country-index
      US(0) - UNITED STATES
      FR(1) - France
      DE(2) - Germany
      IT(3) - Italy
      NL(4) - Netherlands
      PT(5) - Portugal
      ES(6) - Spain
      GB(7) - UNITED KINGDOM
      CZ(8) - CZECH Rep.
      SI(9) - Slovenia
      AT(10) - Austrian
      XX(11) - Extra(Downloadable) Country tone
tftp2 tonetable X.X.X.X filename
tftp2 putimage X.X.X.X filename [f/F]
tftp2 putfile X.X.X.X filename [f/F]
```

For example, to get US :

```
[administrator]# tftp2 listtonetable 10.0.0.1 ToneTbl.zz 0
```

or, to get English :

```
[administrator]# tftp2 listlangtable 10.0.0.1 LangTable.zz 1
```

Finally we will have the Templates to create the new tables:

Nombre	Tamaño	Tipo	Fecha de modificación
LangTbl.zz	28 KB	Archivo ZZ	07/02/2008 13:39
ToneTbl.zz	9 KB	Archivo ZZ	07/02/2008 14:13

3.2 How to modify the Templates:

Tone/Language template files are "txt" files and follow XML format:

<pre><ThomsonLanguageTable> <ProductName>ST2030(S) </ProductName> <Country>NewOne</Country> <Charset>Latin-1</Charset> <ThomsonDisplayString> <Switch> <SwitchOFF>OFF</SwitchOFF> <SwitchON>ON</SwitchON> </Switch> <Block> <BlockOFF>Unblock</BlockOFF> <BlockON>Block</BlockON> </Block> <LineStatus> <LS-Idle>Idle</LS-Idle> <LS-Ring>Ring</LS-Ring> <LS-Talking>Talking</LS-Talking> </LineStatus> </ThomsonDisplayString> </ThomsonLanguageTable></pre>	<pre><ThomsonToneTable> <Country-TableName>NewOne</Country-TableName> <Busy> <Num-of-Element>2</Num-of-Element> <Tone-Element-1> <Num-of-Tones>2</Num-of-Tones> <Freq-1>480</Freq-1> <Amp-1>240</Amp-1> <Freq-2>620</Freq-2> <Amp-2>240</Amp-2> <Duration>500</Duration> </Tone-Element-1> <Tone-Element-2> <Num-of-Tones>0</Num-of-Tones> <Duration>500</Duration> </Tone-Element-2> </Busy> <Ring-Back> <Num-of-Element>2</Num-of-Element> </Ring-Back> </ThomsonToneTable></pre>
--	---

If you modify :

```
<ThomsonToneTable>
  <Country-TableName>Spain 2</Country-TableName>
  <Busy>
    <Num-of-Element>2</Num-of-Element>
    ...
  </Busy>
  ...
</ThomsonToneTable>
```

this means the name of the extra tone table will be "Spain 2".

And:

```
<ThomsonLanguageTable>
  <ProductName>ST2030 (S)</ProductName>
  <Country>Czech</Country>
  <Charset>Latin-2</Charset>
  <ThomsonDisplayString>
    ...
  ...
</ThomsonLanguageTable>
```

means the name of the extra language table will be "Czech".

The new language table should be based on Latin-1, Latin-2, Cyrillic and Hebrew character set. The character table name must be indicated in the language file in the tag:

```
<ThomsonLanguageTable>
  <ProductName>ST2030 (S)</ProductName>
  <Country>Czech</Country>
  <Charset>Latin-2</Charset>
  <ThomsonDisplayString>
    <Switch>
      <SwitchOFF>OFF</SwitchOFF>
      <SwitchON>ON</SwitchON>
    </Switch>

    <Block>
      <BlockOFF>Odblokovat</BlockOFF>
      <BlockON>Blokovat</BlockON>
    </Block>

    <LineStatus>
      <LS-Idle>Neèinný</LS-Idle>
      ...
    ...
  ...
</ThomsonLanguageTable>
```

Words the admin can modify are the ones between xml tags.

Limitations:

1. Tone table limits - >

- Country-TableName is up to 64 characters,
- Num-of-Element is up to 6,
- Num-of-Tones is up to 4,
- Freq (frequency) is up to 3000Hz,
- Amp is between -800 ~ +30 (*0.1 db),
- Duration is up to 60000 seconds.

2. Language table limits - >

Length limit - > refer to the limit of MMI display

- LCD Central Line – 20 characters (ST2030),
24 characters (ST2022);
- right upper corner of LCD – 6 characters;
- soft keys – 6 characters (ST2030),
7 characters (ST2022).

Reserved characters should be used as follows within Language and Tone tables:

& → &

< → <

> → >

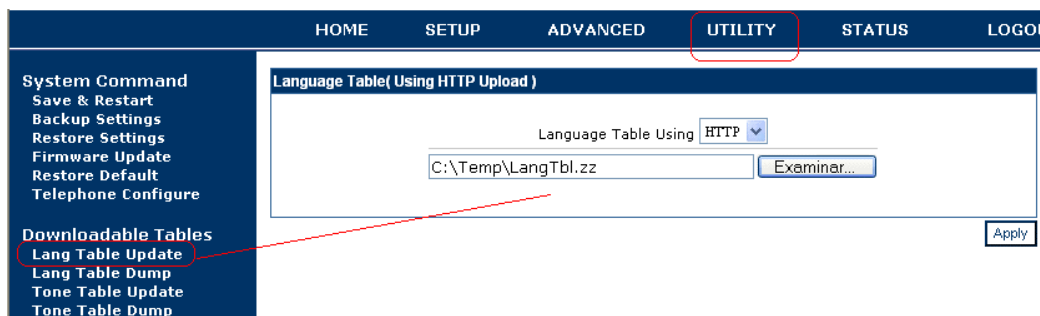
' → '

" → "

3.3 How to upload the Templates:

Language and tone tables can be uploaded using APS, through telnet application or via Web GUI.

A) Through the Web Gui:



HOME	SETUP	ADVANCED	UTILITY	STATUS	LOGOUT
<div> <div> System Command Save & Restart Backup Settings Restore Settings Firmware Update Restore Default Telephone Configure </div> <div> Downloadable Tables Lang Table Update Lang Table Dump Tone Table Update Tone Table Dump </div> </div> <div> <div>Tone Table(Using HTTP Upload)</div> <div> Tone Table Using HTTP </div> <div> <input type="text" value="C:\Temp\ToneTbl.zz"/> <input type="button" value="Examiner..."/> </div> <div> <input type="button" value="Apply"/> </div> </div>					

B) Through Telnet

```
[administrator]# tftp2 langtable 10.0.0.1 LangTable.zz
```

```
[administrator]# tftp2 tonetable 10.0.0.1 ToneTbl.zz
```

C) Through APS:

• File Syntax for TFTP APS:

```
[application]
fw_filename=v2030SG.080227.1.59.3.zz

[config]
telcfg=TelConf2030SG_v1.59.3.txt
common_config=ComConf2030SG_v1.59.3.txt
melodies=Melodies.txt
system_melodies=Sys_Ringtones.txt
call_waiting_tone=Bellcore_CW.txt
tone_table=ToneTable.txt
language_table=LangTable.txt
```

• File Syntax for HTTP APS:

```
[application]
fw_url=http://10.8.1.217/v2030SG.080227.1.59.3.zz

[config]
common_config=http://10.8.1.217/ComConf2030SG_v1.59.3.txt
telcfg=http://10.8.1.217/TelConf2030SG_v1.59.3.txt
melodies=http://10.8.1.217/Melodies.txt
system_melodies=http://10.8.1.217/Sys_Ringtones.txt
call_waiting_tone=http://10.8.1.217/ Bellcore_CW.txt
tone_table=http://10.8.1.217/tonetable.txt
language_table=http://10.8.1.217/langtable.txt
config=http://10.8.1.217/
```

The files are temporarily uploaded, so they will be deleted after reset to default.

3.4 Feature Activation

Once the files have been uploaded, user can activate them by the following means:

A) Through Keypad : Only Language table can be changed. Menu → Config → Personalize → Lang option → Edit → choose your own table and save.

B) Through Telnet : Only Tone table can be changed:

```
[administrator]# sys set country
      US - UNITED STATES
      FR - France
      DE - Germany
      IT - Italy
      NL - Netherlands
      PT - Portugal
      ES - Spain
      GB - UNITED KINGDOM
      CZ - CZECH Rep.
      SI - Slovenia
      AT - Austrian
      XX - Spain 2
[Error] Syntax error
[administrator]# sys set country XX
[OK] Set OK
```

C) Through APS :

```
[ipp]
LanguageType=9 (from 0-English to 9-extra lang)
...
[sys]
CountryCode=XX (XX to choose extra tone table)
```

[EOF]