

ANEXOS

SISTEMA DE CONTROL DOMÓTICO UTILIZANDO UNA
CENTRAL IP PBX BASADO EN SOFTWARE LIBRE

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1. Trabajos relacionados

Arquitectura basada en el protocolo SNMP

Elementos de la arquitectura:

- Agente (Gestiona Equipos dentro de una misma "Área")
- Punto Central de Control(Interactúa con los agentes sobre el status de los equipos, funciona como Gateway)
- MIB (Guarda la información de los equipos)

Está basado en los estándares de red IP y de SNMP. Esta construido en base a tres principios básicos.

-La definición de los equipos siendo controlados en un sistema MIB (Management Information Bases)

-La existencia de un punto focal que actúa como un Gateway entre la red doméstica y la interface de las aplicaciones del usuario.

-Una autonomía de los agentes de los equipos para realizar algunas funciones simples sin la intervención de la central de gestión de aplicaciones

La ventaja de SNMP con respecto a Web Server, es la posibilidad de enviar notificaciones a los clientes.

Los equipos y agentes están conectados a la LAN (está es como la columna vertebral de la comunicación doméstica).

Domotic House Gateway

La arquitectura de DHG se divide en tres capas:

La primera capa, implica todos los equipos que pueden ser conectados al DHG y sus controladores de programa, los cuales adaptan las tecnologías del equipo a los requerimientos del Gateway.

La capa central es la responsable del direccionamiento de mensajes de los eventos de bajo nivel desde y hacia varios equipos y el DHG.

La última capa es el núcleo de la inteligencia del sistema. Su principal función es gestionar los eventos lógicos.

La arquitectura resuelve la comunicación entre los dispositivos de hardware y la aplicación de control.

Elementos de la arquitectura:

- Interfaces de Aplicaciones, Hardware, y Aplicaciones
- Driver de los equipos
- Capa de Comunicación

- Administrador de Eventos
- Modelo de Casa
- Sistema Domótico Inteligente
- Run-Time Engine
-

Alarma Remota y sistema de comandos para residenciales domóticas a través de GSM-SMS [2]

El control de Alarmas mediante el envío de mensajes SMS desde un Celular.

Monitorear una Residencia y el control remoto mediante el envío de SMS.

Se usa el Celular porque es generalmente accesible y disponible para todas las personas.

Se usa el SMS ya que es un servicio global inalámbrico muy comúnmente usado y aceptado. Es barato y fácil de usar.

Elementos de la arquitectura:

- Microcontrolador
- Acondicionamiento de señal de los sensores y actuadores (Relés y optocopladores)
- Controlador: Para la comunicación con el celular
-

Interacción Móvil con entornos inteligentes a través de datos vinculados

El usuario abre la aplicación de su teléfono móvil para efectuar las operaciones. Luego toma una captura de la etiqueta visual que está cerca del dispositivo a controlar o accionar; la aplicación instalada en el móvil la decodifica para luego enviarla al controlador Domótico por Internet. Si el usuario es validado, se le envía una lista de opciones y comandos al usuario para que pueda controlar o monitorear el equipo.

Elementos de la arquitectura:

- UAID (UNIVERSAL ACCESS ID) Identifica al dispositivo. Es único para cada dispositivo.
- Aplicativo que extrae y decodifica una etiqueta (en este caso imagen)
- DGC (DOMOTICS GATEWAY CONTROLLER): Es un sistema de software que puede manejar diferentes aplicaciones y provee a los usuarios información y capacidad de control sobre los equipos.

El rol de los servicios web en el hogar

Considera las distintas soluciones para redes domóticas según los atributos de calidad: apertura, escalabilidad, heterogeneidad y topología.

Sustenta los servicios Web como una óptima solución para obtener las cualidades mencionadas.

2. SIP (Session Initiation Protocol)

Es un protocolo de señalización que permite establecer, modificar y finalizar una llamada. Cabe resaltar que este protocolo no es quien transporta la voz. En este caso, el protocolo que transporta la voz es RTP (Real Time Protocol), y SIP es el que gestiona el flujo de este. En la siguiente figura se observa cómo se establece una llamada entre el punto A y B. En este caso A genera la llamada y B la cuelga. SIP conforma Invite (Invitación), Trying (repuesta de invite), Ringing (Tono de timbre), 200 OK (Contestó), ACK (Confirmación), BYE (el usuario colgó).

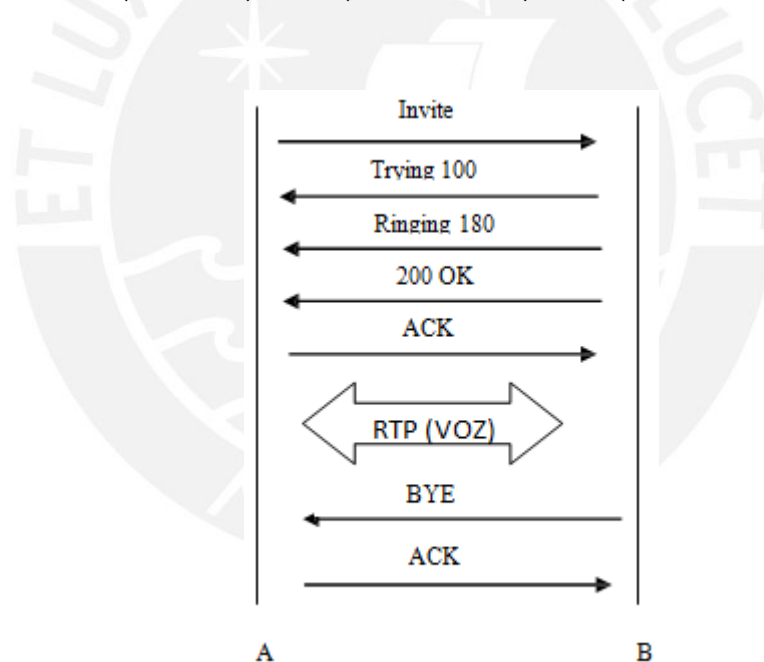


Figura 2.1 Flujo de una llamada VoIP con protocolo SIP

3. DTMF

Existen tres modos de envío de los DTMF. Inband, Outband, sip-info. En el primero los tonos son enviados en la media tal como son, debe usarse sólo CODECS sin comprensión (G711) para evitar la distorsión de estos. En el segundo, los tonos son

enviados como eventos mediante la norma RFC2833. En el tercero mediante notificaciones utilizando el protocolo SIP.

4. Asterisk

Es un software que funciona como IP PBX. Trabaja con VoIP, con tarjetas analógicas, digitales. En la tesis planteada se utilizó sólo VoIP; sin embargo, incluir otros tipos de telefonía no resulta muy complicado debido a la flexibilidad y simplicidad en el manejo de esta plataforma.

Para implementar una plataforma en Asterisk debe tenerse en cuenta los archivos de configuración que este tiene. Los básicos son dos tipos: Los Endpoints y el plan de marcado.

Endpoint

En estos archivos se configura los dispositivos SIP, troncales SIP o proveedores que soportan este protocolo. Se tienen distintos archivos dependiendo del protocolo a usar: iax.conf (protocolo IAX), sip.conf (protocolo sip), zapata.conf (tarjetas telefónicas analógicas), etc. En este caso se utilizó sólo el sip.conf debido a que se utilizó el protocolo SIP.

El siguiente código se utilizó para configurar los dispositivos telefónicos a usar.

```
[general]
context=default
localnet = 192.168.1.0/255.255.255.0
bindport=5060
bindaddr=0.0.0.0
port=5060
disallow=all
;allow=g729
;allow=alaw
allow=ulaw
canreinvite=no
nat=yes
externhost=wallyrouter.dyndns.org externrefresh=60
```

[101]

```
type=friend ; Friends place calls and receive calls
callerid=COUNTER 1
context=extensiones
username=101
secret=101
host=dynamic ; This peer register with ;
```

[700]

```
type=friend ; Friends place calls and receive calls
callerid=COUNTER 2
context=extensiones
username=700
secret=700
host=dynamic ; This peer register with
```

[102]

```
type=friend; Friends place calls and receive calls
callerid=COUNTER 3
context=extensiones
username=102
secret=102
host=dynamic
```

Plan de Marcado

Consta de un único archivo llamado `extensiones.conf`. Cabe resaltar que una “extensión” en el contexto de Asterisk no necesariamente refiere a un dispositivo telefónico dentro de la red de una PBX como se conoce normalmente. Una extensión es una regla o conjunto de reglas que se tiene dentro de un plan de marcado. Por ejemplo, la extensión 800 puede referir a un mensaje de bienvenida, luego una reproducción de una música, y luego de tres segundos colgar la llamada. Es decir cuando el usuario marque la extensión 800 seguirá todo este procedimiento. Para realizar estos procedimientos se tienen distintos comandos propios de Asterisk. Uno de estos comandos es el llamado AGI, que me permite ejecutar un script dentro del plan de marcado. El siguiente código se utilizó implementar el plan de marcado.

[general]

static=yes

writeprotect=yes

[extensiones]

exten => 101,1,Dial(SIP/101)

exten => 101,n,Hangup()

exten => 700,1,Dial(SIP/700)

exten => 700,n,Hangup()

exten => 102,1,Dial(SIP/102)

exten => 102,n,Hangup()

exten => 800,1,Goto(Prueba1,800,1)

exten => 801,1,Goto(AccesoRapido,801,1)

exten => 802,1,Goto(Bienvenido,802,1)

exten => 803,1,AGI(ejemplophp.php)

exten => 803,n,Hangup()

exten => 804,1,Goto(Plataforma,804,1)

[AccesoRapido]

exten => 801,1,Answer()

exten => 801,2,AGI(AccesoRapidoPlataforma.php)

exten => 801,n,Hangup()

[Alarma]

exten =>911,1,Answer()

exten =>911,n,Playback(Alarma)

exten =>911,n,Playback(Alarma)

exten =>911,n,Playback(Alarma)

exten =>911,n,Hangup()

[Plataforma]

exten => 804,1,Answer()

exten => 804,2,AGI(Plataforma.php)

exten => 804,n,Hangup()

Para mayor información puede consultarse en la bibliografía el documento [11]

5. Programación de los elementos del sistema

5.1 Código del programa módulo de control Atmega8L (lenguaje c)

```

/*****
Programa del Controlador de Equipos
Referencias: http://ethershield.thiseldo.co.uk/index.html
              http://www.tuxgraphics.org/
Las librerías pueden encontrarse en las referencias.
*****/

#include <avr/io.h>
#include "ip_arp_udp.h"
#include "enc28j60.h"
#include "timeout.h"
#include "avr_compat.h"
#include "net.h"
#include <stdlib.h>
#include <string.h>
#include <avr/pgmspace.h>
#include <avr/eeprom.h>
#include <avr/interrupt.h>

static uint8_t mymac[6] = {0x52,0x42,0x57,0x10,0x00,0x24};
static uint8_t myip[4] = {192,168,1,99};
static uint8_t udpsrvip[4] = {181,65,29,159};
static uint16_t myport =1200;
static uint8_t gwip[4] = {192,168,1,1};
static uint16_t udpsrvport=5151;
int alarma;
int alarma2;
const char* alarmaint0 = ":1A1310";
const char* alarmaint1 = ":2A1310";
char* alarmaactivada;

#define MYUDPPORT 1200
#define BUFFER_SIZE 250

```

```
static uint8_t buf[BUFFER_SIZE+1];
static uint8_t buf2[BUFFER_SIZE+1];
int main(void){
    alarma=0;
    uint16_t plen;
    uint8_t i=0;
    uint8_t payloadlen=0;
    delay_ms(100);
    DDRD = 1 << DDD2;//Se configuran los puertos
    PORTD |= (1 << PORTD2);
    DDRD = 1 << DDD3;
    PORTD |= (1 << PORTD3);
    GICR = (1<<INT0) ; // Para ATMEGA8
    GICR |= (1<<INT1) ;
    MCUCR |= (0<<ISC01) | (1<<ISC00);
    MCUCR |= (0<<ISC11) | (1<<ISC10);
    sei();
    /* Inicializando enc28j60*/
    enc28j60Init(mymac);
    delay_ms(20);
    enc28j60PhyWrite(PHLCON,0x880);
    delay_ms(500);
    enc28j60PhyWrite(PHLCON,0x990);
    delay_ms(500);
    enc28j60PhyWrite(PHLCON,0x880);
    delay_ms(500);
    enc28j60PhyWrite(PHLCON,0x990);
    delay_ms(500);
    enc28j60PhyWrite(PHLCON,0x476);
    delay_ms(20);
    init_ip_arp_udp(mymac,myip);
    client_set_gwip(gwip);
    DDRC|= (1<<DDC5);
    PORTC|= (1<<PC5);
    while(1){
        // Recibir el paquete
```

```

plen = enc28j60PacketReceive(BUFFER_SIZE, buf);
//Se verifica si un sensor se activó, en caso sea se envía un paquete.
if(alarma==1){
send_udp(buf2,alarmaactivada,strlen(alarmaactivada),MYUDPPORT, udpsrvip,
udpsrvport);
alarma=0;
}
/*Si plen es =0 el paquete esta con errores */
if(plen==0){
continue;
}
/* Si es mensaje ARP mandar respuesta*/
if(eth_type_is_arp_and_my_ip(buf,plen)){
make_arp_answer_from_request(buf,plen);
continue;
}
// Se verifica si el mensaje es para nosotros
if(eth_type_is_ip_and_my_ip(buf,plen)==0){
continue;}
/*Si el paquete es ICMP se manda respuesta*/
if(buf[IP_PROTO_P]==IP_PROTO_ICMP_V &&
buf[ICMP_TYPE_P]==ICMP_TYPE_ECHOREQUEST_V){
// a ping packet, let's send pong
make_echo_reply_from_request(buf,plen);
continue;}
/*Si el paquete es UDP: se verifica, se prende o apaga el led y se manda
respuesta*/
if (buf[IP_PROTO_P]==IP_PROTO_UDP_V){
payloadlen=buf[UDP_LEN_L_P]-UDP_HEADER_LEN;
if (payloadlen==8)
{
if (buf[UDP_DATA_P+3]=='H') {
cbi(PORTC,PC5);
make_udp_reply_from_request(buf,"high",6,myport);}
else {if(buf[UDP_DATA_P+3]=='L') {
sbi(PORTC,PC5);

```

```

make_udp_reply_from_request(buf,"low",6,myport);}
}}}}

    return (0);}

// Subrutinas de Interrupciones(Sensores)
ISR( INT0_vect ){
delay_ms(20);
if((PIND & (1<<PD2))==4)
{alarma=1;
alarmaactivada=alarmaint0;}}
////////////////////////////////////
ISR( INT1_vect ){
delay_ms(100);
if((PIND & (1<<PD3))==8)
{alarma=1;
alarmaactivada=alarmaint1;}}

```

5.2 Código del programa gestor de eventos (php)

ServidorUDP

```

<?php
set_time_limit(0); //para que no sea interrumpido el script
while(true){ //iniciamos un bucle infinito para que siempre escuche en el puerto
    $sock=socket_create(AF_INET,SOCK_DGRAM,SOL_UDP); //crea el socket
    if($sock===false){
        echo 'socket_create Fallo: '.socket_strerror(socket_last_error());
        break;}
    if((socket_bind($sock,"192.168.1.100",5151))===false){ //aqui configuramos la ip
y el puerto de escucha, por ahora esta en localhost para las pruebas
        socket_close($sock);
        echo 'socket_bind Fallo: '.socket_strerror(socket_last_error());
        break; }
    socket_recvfrom($sock,$buf,1024,0,$clientIP,$clientPort); //aqui hace la lectura
de lo que esta llegando al puerto, 1024 es el tamaño en bites a leer

if($buf===':1A1310'||$buf===':2A1310'){

```

```

echo "Lectura= $buf\n";
socket_close($sock);//se cierra el socket
system('php orignar.php 3887 >/dev/null &');
continue;}
socket_close($sock);//se cierra el socket}?>

```

Orignar.php(Conexión AML)

```

<?php
$timeout = 10;
$CID    = $argv[1];
$socket = @fsockopen('192.168.1.100','5038',$errno,$errstr,$timeout);
if (!$socket){
    $error = "No es posible conectarse al servidor: <br> $errstr ($errno)";
    echo $error;
}else{
    fwrite($socket,"Action: login\r\n");
    fwrite($socket,"UserName: astadmin\r\n");
    fwrite($socket,"Secret: 123456\r\n\r\n");
    fwrite($socket, "Action: originate\r\n");
    fwrite($socket, "Channel: SIP/101\r\n");
    fwrite($socket, "Exten: 801\r\n");
    fwrite($socket, "Context: extensiones\r\n");
    fwrite($socket, "Priority: 1\r\n");
    fwrite($socket, "Timeout: 10000\r\n");
    fwrite($socket, "Callerid: $CID\r\n\r\n");
    fwrite($socket, "Action: Logoff\r\n\r\n");
    $wrets = "";
    while (!feof($socket)) {
        $wrets .= fread($socket, 8192);    }
    fclose($socket);
    $msg = 'Conexion exitosa<br><br>';
    echo $msg;
    $lines = explode("\r\n",$wrets);
    foreach ($lines as $value){
        echo $value.'<br>'; }}?>

```

Clienteudp(AGI que se ejecuta desde el plan de marcado)

```
#!/usr/bin/php -q
<?php
$server_ip = '192.168.1.99';
$letra    = $argv[1];
$IPAddress  = $argv[2];
$server_port = 1200;
if ($socket = socket_create(AF_INET, SOCK_DGRAM, SOL_UDP)) {
socket_sendto($socket, $letra, strlen($letra), 0, $IPAddress, $server_port);
print "Time: " . date("%r") . "\n".("$letra");
```

5.3 Código del programa SID (php)

```
#!/usr/bin/php -q
<?php
require('phpagi-2.20/phpagi.php');
require ("Mysqlphp.php");
$agi = new AGI();
$agi->answer();
$intentos=1;
$nodispositivos="Disculpe, no tiene dispositivos asignados a su cuenta";
$opcioninva="Ha marcado una opcion invalida";
$IDConnect=conectar("usuarios","localhost","root","wallywallops88");
//Validacion de cuenta y clave
$response=$agi->get_data("/var/lib/asterisk/sounds/Bienvenido",4000,12);
$PIN = $response['result'];
$agi->exec("Noop","\PIN...$PIN...");
$IDConsulta=consulta("Select * from UserDetail where
PinyPass='$PIN'", $IDConnect);
$num_rows = mysql_num_rows($IDConsulta);
$row = mysql_fetch_row($IDConsulta);
while($intentos<3)
{
    if($num_rows!=0){
        break; }
$response=$agi->get_data("/var/lib/asterisk/sounds/Bienvenido2",4000,12);
$PIN = $response['result'];
```

```

$agi->exec("Noop","\PIN...$PIN...");
$IDConsulta=consulta("Select * from UserDetail where
PinyPass='$PIN'",$IDConnect);
$num_rows = mysql_num_rows($IDConsulta);
$intentos++;}
if($num_rows==0){
$agi->exec("Noop","\Pin o Pass mal, Numero de intentos=$intentos");
break;}//Fin de validacion, aqui continua si es que la cuenta es valida
else{
$agi->exec("Noop","Correcto!!!");
$IDConsulta2=consulta("Select Cuenta from UserDetail where
PinyPass='$PIN'",$IDConnect);
$row2= mysql_fetch_array($IDConsulta2);
$Cuentacliente=$row2[0];
$agi->exec("Noop","\Cuenta del cliente: $Cuentacliente");
$IDConsulta2=consulta("Select Dispositivo,OpcionMenu from Dispositivos where
Cuenta='$Cuentacliente' order by OpcionMenu asc",$IDConnect);
$num_rows2 = mysql_num_rows($IDConsulta2);
$row2 = mysql_fetch_array($IDConsulta2);
    if($num_rows2==0)
        {//$agi->text2wav($nodispositivos);
        $agi->exec("Background","Nohaydispositivos");
        break;}
$agi->exec("Noop","\Si tienes dispositivos!!! $num_rows2 \");
$scadenamenu="Despues del tono, ";
$i=1;
    do{
        $var1="Marque ".$row2["OpcionMenu"]." para el Dispositivo ";
        $row2["Dispositivo"]."; ";
        $scadenamenu=$scadenamenu.$var1;
        $i++; }
    while($row2=mysql_fetch_array($IDConsulta2));
$svolver=1;
while($svolver==1){
////////// GENERACION DE MENU DE DISPOSITIVOS, MENU PRINCIPAL
$agi->exec("Noop","\$scadenamenu");

```



```

$opinvalida=1;
    while($opinvalida==1){
        $agi->text2wav($cadenamenu);
        $response = $agi->get_data('beep', 4000, 3);
        $opciondisp= $response['result'];
$IDConsulta2=consulta("Select Identificador,Dispositivo,Tipo,IPAddress from
Dispositivos where Cuenta='$Cuentacliente' and
OpcionMenu='$opciondisp'", $IDConnect);
        $num_rows2 = mysql_num_rows($IDConsulta2);
            if($num_rows2==0)
                $agi->text2wav($opcioninva);
            else
                $opinvalida=0;}
$row2= mysql_fetch_array($IDConsulta2);
$TipoDispositivo=$row2[2];
$IDDispositivo=$row2[0];
$NombreDispositivo=$row2[1];
$IPAddress=$row2[3];
$agi->exec("Noop", "\"La IP es $IPAddress del $PIN\"");
//////////MENU DE DISPOSITIVO ESCOGIDO
switch( $TipoDispositivo ){
case A:
$repetirmenuA=0;
do{
$response=$agi->get_data("/var/lib/asterisk/sounds/MenuA",4000,1);
$opcion= $response['result'];
if ($opcion==1){
$agi->exec("Noop", "\"Marco la opcion 1 \|");
$cadena="php /var/lib/asterisk/agi-bin/PlataformasendUDP.php :3CH1310
$IPAddress >/dev/null &";
system($cadena);
$repetirmenuA=1;}
else{ if ($opcion==2)      {
        $agi->exec("Noop", "\"Marco la opcion 2 \|");
        $cadena="php /var/lib/asterisk/agi-bin/PlataformasendUDP.php :3CL1310
$IPAddress >/dev/null &";

```



```

<hr />
<form id="form1" name="form1" method="post" action="consulta1.php">
<div align="center"></div>
<table width="437" border="0" align="center">
  <tr>
    <td width="142">Pin </td>
    <td width="144"><input type="text" name="user" id="user" /></td>
  </tr>
  <tr>
    <td>Password</td>
    <td><input type="password" name="pass" id="pass" /> </td>
  </tr>
  <tr>
    <td>&nbsp;</td>
    <td colspan="2" align="center">
      <label>
        <input type="submit" name="enviar" id="enviar" value="Enviar" />
      </label> </td>
  </tr>
</table>
<div align="center"></div>
</form>
<hr />
</body>
</html>

```

Consulta1.php(php y html)

```

<?php
require ("Mysqlphp.php");
//header("location:test1juniorlohizo.php");
//$link = mysql_connect('hostname','dbuser','dbpassword');
$num_rows=0;
$username = $_POST['user'];
$userpass = $_POST['pass'];
$namepass=$username.$userpass;
$IDConnect=conectar("usuarios","localhost","root","wallywallops88");
$IDConsulta=consulta("Select * from UserDetail where
PinyPass='$namepass'", $IDConnect);

```

```

$num_rows = mysql_num_rows($IDConsulta);
$row = mysql_fetch_row($IDConsulta);
if($num_rows==0)
echo "La cuenta $username incorrecta";
else
{$IDConsulta2=consulta("Select Cuenta, Name from UserDetail where
PinyPass='$namepass'", $IDConnect);
$row2= mysql_fetch_array($IDConsulta2);
$Cuentacliente=$row2[0];
$Namecliente=$row2[1];
$IDConsulta2=consulta("Select Dispositivo,IPaddress,Identificador,Tipo from
Dispositivos where Cuenta='$Cuentacliente' order by OpcionMenu
asc", $IDConnect);
$num_rows2 = mysql_num_rows($IDConsulta2);
$row2 = mysql_fetch_array($IDConsulta2);
    if($num_rows2==0)
        echo "No hay dispositivos asignados a su cuenta";
    else{
echo "<html>\n";
echo "<head>\n";
echo " \n";
echo " \n";
echo "<style type='text/css'>\n";
echo "ul#avmenu {\n";
echo "margin: 35px 0;\n";
echo "padding: 0;\n";
echo "font: 12px Verdana;\n";
echo "list-style-type: none;\n";
echo "}\n";
echo "ul#avmenu li {\n";
echo "display: inline;\n";
echo "}\n";
echo "ul#avmenu li a {\n";
echo "padding: 5px 10px;\n";
echo "border: 1px solid #aaa;\n";
echo "background-color: #eee;\n";

```

```
echo "color: #47a;\n";
echo "text-decoration: none;\n";
echo "}\n";
echo "ul#avmenu a:hover {\n";
echo "background: #fff;\n";
echo "color: #222;\n";
echo "}\n";
echo "ul#avmenu li.current a {\n";
echo "border:1px solid #777;\n";
echo "}\n";
echo "</style>\n";
echo "</head>\n";
echo "<body >\n";
echo "<h1><font color=\"#456787\">Bienvenido $Namecliente\n</font>";
echo "<div align=\"left\"><font color=\"#aaaaaa\">&nbsp;&raquo;&nbsp;&nbsp;Eliga el
dispositivo</font></div>";
echo "<hr />\n";
echo "<ul id=\"avmenu\">\n";
echo "<div align=\"center\"></div>";
echo "<table width=\"437\" border=\"0\" align=\"center\">";
do{
echo "<tr>";
$var1=$row2["Dispositivo"];
$var2=$row2["Tipo"];
$var3=$row2["IPaddress"];
//echo $var1;
echo "<td <li><a
href=\"consulta2.php?username1=$username&userpass1=$userpass&Dispo
sitivo=$var1&Tipo=$var2&IPaddress=$var3\">$var1</a></li>\n </td>";
echo "</tr>";
echo "<tr> <td </td> </tr>";
echo "<tr> <td </td> </tr>";
echo "<tr> <td </td> </tr>"; }
while($row2=mysql_fetch_array($IDConsulta2));
echo "</table>";
echo " <div align=\"center\"></div>";
```



```

{case A:
echo "<tr>";
echo "<td <form method=\"post\">";
echo " <input type=\"hidden\" name=\"act\" value=\"run\">";
echo " <input type=\"submit\" class=\"button\" value=\"Prender\">";
echo "</form> </td>";
echo "</tr>";
echo "<tr>";
echo "<td <form method=\"post\">\n";
echo " <input type=\"hidden\" name=\"act1\" value=\"run\">\n";
echo " <input type=\"submit\" class=\"button\" value=\"Apagar\">\n";
echo "</form>\n </td>";
echo "\n";
echo "</tr>";
//echo " <li><a href=\"index.html\">Second page</a></li>\n";
echo "<tr>";
echo "<td <form action=\"consulta1.php\" method=\"post\">\n";
echo "<input type=\"hidden\" name=\"user\" value=\"$username3\" />\n";
echo "<input type=\"hidden\" name=\"pass\" value=\"$userpass3\" />\n";
echo "<input type=\"submit\" class=\"button\" value=\"Volver al Menú Principal\"
/>\n";
echo "</form>\n</td>";
echo "</tr>";
//$cadena="php /var/lib/asterisk/agi-bin/PlataformasendUDP.php :3CL1310
$IPAddress >/dev/null &";
//system($cadena);
//echo $cadena;

break;
case S:
echo "<tr>";
echo"El estado de su sensor es";
echo "<td <form action=\"consulta1.php\" method=\"post\">\n";
echo "<input type=\"hidden\" name=\"user\" value=\"$username3\" />\n";
echo "<input type=\"hidden\" name=\"pass\" value=\"$userpass3\" />\n";
echo "<input type=\"submit\" class=\"button\" value=\"Volver al Menú Principal\"
/>\n";

```



```

echo "</form>\n</td>";
echo "</tr>";
break;
case O:
echo"El dispositivo esta inhabilitado";
echo "<form action=\"consulta1.php\" method=\"post\">\n";
echo "<input type=\"hidden\" name=\"user\" value=\"$username3\" />\n";
echo "<input type=\"hidden\" name=\"pass\" value=\"$userpass3\" />\n";
echo "<input type=\"submit\" class=\"button\" value=\"Volver al Menú Principal\"
/>\n";
echo "</form>\n";
break;}
echo "</table>";
echo " <div align=\"center\"></div>";
echo "</ul>\n";
echo "<hr />\n";
echo "</body>\n";
echo "</html>"
?>

<?php
  if (!empty($_POST['act']))
{ $cadena="php /var/lib/asterisk/agi-bin/PlataformasendUDP.php :3CL1310
$IPaddress >/dev/null &";
system($cadena);
echo "Se prendió"; } ?>

<?php
  if (!empty($_POST['act1']))
  {$cadena="php /var/lib/asterisk/agi-bin/PlataformasendUDP.php :3CH1310
$IPaddress >/dev/null &";
      system($cadena);
echo "Se apagó"; }?>

```

6. Registro de Eventos

Por cada evento generado o recibido, se va registrando en la tabla "RegistroddeEventos". En la tabla de abajo se observa como se registran los eventos. El formato es el siguiente: "la fecha y hora del evento generado// Identificador del dispositivo//Acción y/o Estado".

Por ejemplo en el ID = 1, se tiene que el 08-06-2012 a las 14:21:48 se activó la alarma ("A") con Identificador "2".

id	Log
1	08-06-2012 14:21:48//2//A
2	08-06-2012 14:21:48//2//A
3	08-06-2012 14:21:49//2//A
4	08-06-2012 14:21:51//2//A
5	08-06-2012 14:21:52//2//A
6	08-06-2012 14:22:35//3//CH
7	08-06-2012 14:22:36//3//CL
8	08-06-2012 14:22:37//3//CH
9	08-06-2012 14:22:37//3//CL
10	08-06-2012 14:22:41//3//CH
11	08-06-2012 14:22:41//3//CL
12	08-06-2012 14:22:54//16//CH
13	08-06-2012 14:22:54//16//CL
14	08-06-2012 14:22:55//16//CH
15	08-06-2012 14:22:55//16//CL
16	08-06-2012 14:23:08//1//A
17	08-06-2012 14:23:11//1//A
18	08-06-2012 14:23:12//1//A
19	08-06-2012 14:23:15//1//A
20	08-06-2012 14:23:17//1//A

7. Trazas, capturas e imágenes obtenidas de las pruebas realizadas

7.1 Pruebas realizadas con Asterisk en los locales

Controlador de Equipos Ventanilla

IP Pública 190.235.19.211

Controlador de Equipos Abancay

IP Pública 190.238.143.214

Servidor Domótico

IP Pública 181.65.29.159

Teléfono VoIP (Extensión 101)

IP Pública 190.235.19.211(en mismo local de Ventanilla), 190.238.143.214(en mismo local de Abancay), 190.113.194.57 (Surco), 190.113.194.134(La Molina)

TRAZA ID 1

Time	190.113.194.57	192.168.1.100	190.238.143.214
3.944	Request: INVITE sip		SIP/SDP: Request: INVITE
	sip:804@181.65.29.159;transport=UDP, with session description		
	(13206) -----> (5060)		
3.944	Status: 401 Unautho		SIP: Status: 401 Unauthorized
	(13206) <----- (5060)		
4.177	Request: ACK sip:80		SIP: Request: ACK sip:804@181.65.29.159;transport=UDP
	(13206) -----> (5060)		
4.344	Request: INVITE sip		SIP/SDP: Request: INVITE
	sip:804@181.65.29.159;transport=UDP, with session description		
	(13206) -----> (5060)		
4.347	Status: 100 Trying		SIP: Status: 100 Trying
	(13206) <----- (5060)		
4.348	Status: 200 OK, wit		SIP/SDP: Status: 200 OK, with session description
	(13206) <----- (5060)		
4.879	Request: ACK sip:80		SIP: Request: ACK sip:804@181.65.29.159
	(13206) -----> (5060)		
43.509	Source port: 43390		UDP: Source port: 43390 Destination port: scol
	(43390) -----> (1200)		
43.53	Source port: scol		UDP: Source port: scol Destination port: 43390
	(43390) <----- (1200)		
47.527	Source port: 40505		UDP: Source port: 40505 Destination port: scol
	(40505) -----> (1200)		
47.549	Source port: scol		UDP: Source port: scol Destination port: 40505
	(40505) <----- (1200)		
51.527	Source port: 35355		UDP: Source port: 35355 Destination port: scol
	(35355) -----> (1200)		
51.556	Source port: scol		UDP: Source port: scol Destination port: 35355
	(35355) <----- (1200)		
54.87	Request: BYE sip:80		SIP: Request: BYE sip:804@181.65.29.159
	(13206) -----> (5060)		
54.87	Status: 200 OK		SIP: Status: 200 OK
	(13206) <----- (5060)		

TRAZA ID 2

Time	190.113.194.57	192.168.1.100	190.238.143.214
4.874	Request: INVITE sip		SIP/SDP: Request: INVITE
	sip:804@181.65.29.159;transport=UDP, with session description		
	(13206) -----> (5060)		
4.874	Status: 401 Unautho		SIP: Status: 401 Unauthorized
	(13206) <----- (5060)		

5.313	Request: INVITE sip sip:804@181.65.29.159;transport=UDP, with session description (13206) -----> (5060)	SIP/SDP: Request: INVITE
5.314	Status: 100 Trying (13206) <----- (5060)	SIP: Status: 100 Trying
5.331	Status: 200 OK, wit (13206) <----- (5060)	SIP/SDP: Status: 200 OK, with session description
5.347	Request: ACK sip:80 (13206) -----> (5060)	SIP: Request: ACK sip:804@181.65.29.159;transport=UDP
5.609	Request: ACK sip:80 (13206) -----> (5060)	SIP: Request: ACK sip:804@181.65.29.159
8.653	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)	(25828) -----> (13098)	
9.613	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)	(25828) -----> (13098)	
10.153	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Four
4 (end)	(25828) -----> (13098)	
10.773	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)	(25828) -----> (13098)	
11.433	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Five
5 (end)	(25828) -----> (13098)	
12.253	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
Three 3 (end)	(25828) -----> (13098)	
13.113	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Zero
0 (end)	(25828) -----> (13098)	
14.114	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
Three 3 (end)	(25828) -----> (13098)	
15.031	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Eight
8 (end)	(25828) -----> (13098)	
15.032	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Eight
8 (end)	(25828) -----> (13098)	
16.115	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)	(25828) -----> (13098)	
16.895	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
Pound # (end)	(25828) -----> (13098)	
39.154	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Five
5 (end)	(25828) -----> (13098)	
40.253	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
Pound # (end)	(25828) -----> (13098)	
42.254	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF One
1 (end)	(25828) -----> (13098)	
42.286	Source port: 52037 (52037) -----> (1200)	UDP: Source port: 52037 Destination port: scol
42.309	Source port: scol (52037) <----- (1200)	UDP: Source port: scol Destination port: 52037
45.273	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)	(25828) -----> (13098)	
45.301	Source port: 51383 (51383) -----> (1200)	UDP: Source port: 51383 Destination port: scol
45.329	Source port: scol (51383) <----- (1200)	UDP: Source port: scol Destination port: 51383
47.293	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF One
1 (end)	(25828) -----> (13098)	
47.364	Source port: 37201 (37201) -----> (1200)	UDP: Source port: 37201 Destination port: scol
47.389	Source port: scol (37201) <----- (1200)	UDP: Source port: scol Destination port: 37201
48.453	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)	(25828) -----> (13098)	
48.481	Source port: 59709 (59709) -----> (1200)	UDP: Source port: 59709 Destination port: scol
48.587	Source port: scol (59709) <----- (1200)	UDP: Source port: scol Destination port: 59709
49.913	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF One
1 (end)	(25828) -----> (13098)	

```

49.951          Source port: 36886      UDP: Source port: 36886 Destination port: scol
                (36886) -----> (1200)
50.675      Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)
(25828) -----> (13098)
50.706          Source port: 57281      UDP: Source port: 57281 Destination port: scol
                (57281) -----> (1200)
50.735          Source port: scol      UDP: Source port: scol Destination port: 57281
                (57281) <----- (1200)
51.595      Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF One
1 (end)
(25828) -----> (13098)
51.626          Source port: 35419      UDP: Source port: 35419 Destination port: scol
                (35419) -----> (1200)
51.653          Source port: scol      UDP: Source port: scol Destination port: 35419
                (35419) <----- (1200)
52.315      Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)
(25828) -----> (13098)
52.356          Source port: 46255      UDP: Source port: 46255 Destination port: scol
                (46255) -----> (1200)
52.385          Source port: scol      UDP: Source port: scol Destination port: 46255
                (46255) <----- (1200)
55.06      Request: BYE sip:80          SIP: Request: BYE sip:804@181.65.29.159
(13206) -----> (5060)
55.06      Status: 200 OK              SIP: Status: 200 OK
(13206) <----- (5060)
    
```

TRAZA ID 3

```

Time      190.113.194.57          190.238.143.214
                192.168.1.100
5.528      Request: INVITE sip          SIP/SDP: Request: INVITE
sip:804@181.65.29.159;transport=UDP, with session description
(13206) -----> (5060)
5.529      Status: 401 Unautho          SIP: Status: 401 Unauthorized
(13206) <----- (5060)
5.764      Request: ACK sip:80          SIP: Request: ACK sip:804@181.65.29.159;transport=UDP
(13206) -----> (5060)
5.947      Request: INVITE sip          SIP/SDP: Request: INVITE
sip:804@181.65.29.159;transport=UDP, with session description
(13206) -----> (5060)
5.948      Status: 100 Trying              SIP: Status: 100 Trying
(13206) <----- (5060)
5.954      Status: 200 OK, wit          SIP/SDP: Status: 200 OK, with session description
(13206) <----- (5060)
6.245      Request: ACK sip:80          SIP: Request: ACK sip:804@181.65.29.159
(13206) -----> (5060)
10.319     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)
(52737) -----> (14952)
11.048     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)
(52737) -----> (14952)
11.559     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Four
4 (end)
(52737) -----> (14952)
11.974     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)
(52737) -----> (14952)
12.379     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Five
5 (end)
(52737) -----> (14952)
13.118     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Three 3 (end)
(52737) -----> (14952)
13.831     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Zero
0 (end)
(52737) -----> (14952)
14.629     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Three 3 (end)
(52737) -----> (14952)
15.259     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Eight
8 (end)
(52737) -----> (14952)
15.269     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Eight
8 (end)
(52737) -----> (14952)
16.319     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)
(52737) -----> (14952)
19.42     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Pound # (end)
(52737) -----> (14952)
    
```

```

42.199      Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Five
5 (end)
(52737) -----> (14952)
43.38      Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Pound # (end)
(52737) -----> (14952)
51.638      Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF One
1 (end)
(52737) -----> (14952)
51.672      Source port: 49743          UDP: Source port: 49743 Destination port: scol
(49743) -----> (1200)
51.699      Source port: scol          UDP: Source port: scol Destination port: 49743
(49743) <----- (1200)
53.7        Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)
(52737) -----> (14952)
53.738      Source port: 44901          UDP: Source port: 44901 Destination port: scol
(44901) -----> (1200)
53.764      Source port: scol          UDP: Source port: scol Destination port: 44901
(44901) <----- (1200)
55.545      Request: BYE sip:80        SIP: Request: BYE sip:804@181.65.29.159
(13206) -----> (5060)
55.545      Status: 200 OK            SIP: Status: 200 OK
(13206) <----- (5060)
    
```

TRAZA ID 4

```

Time      190.238.143.214
          192.168.1.100
5.055     Request: INVITE sip        SIP/SDP: Request: INVITE sip:804@181.65.29.159, with session description
(1025) -----> (5060)
5.055     Status: 401 Unautho      SIP: Status: 401 Unauthorized
(1025) <----- (5060)
5.164     Request: ACK sip:80       SIP: Request: ACK sip:804@181.65.29.159
(1025) -----> (5060)
5.217     Request: INVITE sip        SIP/SDP: Request: INVITE sip:804@181.65.29.159, with session description
(1025) -----> (5060)
5.218     Status: 100 Trying        SIP: Status: 100 Trying
(1025) <----- (5060)
5.218     Status: 200 OK, wit      SIP/SDP: Status: 200 OK, with session description
(1025) <----- (5060)
5.509     Request: ACK sip:80       SIP: Request: ACK sip:804@181.65.29.159
(1025) -----> (5060)
9.703     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)
(4002) -----> (12102)
10.909    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Seven 7 (end)
(4002) -----> (12102)
11.42     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Four 4 (end)
(4002) -----> (12102)
11.882    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Seven 7 (end)
(4002) -----> (12102)
12.256    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Five 5 (end)
(4002) -----> (12102)
13.415    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Three 3 (end)
(4002) -----> (12102)
13.974    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Zero 0 (end)
(4002) -----> (12102)
14.672    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Three 3 (end)
(4002) -----> (12102)
15.318    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Eight 8 (end)
(4002) -----> (12102)
15.736    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Eight 8 (end)
(4002) -----> (12102)
16.205    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Seven 7 (end)
(4002) -----> (12102)
16.854    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Pound # (end)
(4002) -----> (12102)
39.514    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Five 5 (end)
    
```



```

(4002) -----> (12102)
40.025      Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Pound # (end)
(4002) -----> (12102)
42.975      Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)
(4002) -----> (12102)
43.019      Source port: 40953          UDP: Source port: 40953 Destination port: scol
(1200) <----- (40953)
43.042      Source port: scol          UDP: Source port: scol Destination port: 40953
(1200) -----> (40953)
44.812      Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)
(4002) -----> (12102)
44.85      Source port: 33045          UDP: Source port: 33045 Destination port: scol
(1200) <----- (33045)
44.88      Source port: scol          UDP: Source port: scol Destination port: 33045
(1200) -----> (33045)
46.905      Request: BYE sip:80        SIP: Request: BYE sip:804@181.65.29.159
(1025) -----> (5060)
46.906      Status: 200 OK            SIP: Status: 200 OK
(1025) <----- (5060)
    
```

TRAZA ID 5

```

Time      190.235.19.211      192.168.1.100
1.448      Status: 200 OK, wit    SIP/SDP: Status: 200 OK, with session description
(1029) -----> (5060)
2.689      Status: 487 Request    SIP: Status: 487 Request Terminated
(1029) -----> (5060)
5.448      Status: 200 OK, wit    SIP/SDP: Status: 200 OK, with session description
(1029) -----> (5060)
6.69      Status: 487 Request    SIP: Status: 487 Request Terminated
(1029) -----> (5060)
8.263      Source port: scol      UDP: Source port: scol Destination port: esri_sde
(1200) -----> (5151)
8.309      Request: INVITE sip    SIP/SDP: Request: INVITE
sip:101@190.235.19.211:5060;rinstance=d9540c8f5a859c29;transport=UDP
(1029) <----- (5060)
8.837      Status: 180 Ringing    SIP: Status: 180 Ringing
(1029) -----> (5060)
9.449      Status: 200 OK, wit    SIP/SDP: Status: 200 OK, with session description
(1029) -----> (5060)
9.945      Request: BYE sip:38    SIP: Request: BYE sip:3887@181.65.29.159
(1029) -----> (5060)
9.946      Status: 481 Call le    SIP: Status: 481 Call leg/transaction does not exist
(1029) <----- (5060)
10.691     Status: 487 Request    SIP: Status: 487 Request Terminated
(1029) -----> (5060)
15.878     Status: 200 OK, wit    SIP/SDP: Status: 200 OK, with session description
(1029) -----> (5060)
15.879     Request: ACK sip:10    SIP: Request: ACK sip:101@190.235.19.211:5060
(1029) <----- (5060)
16.381     Status: 200 OK, wit    SIP/SDP: Status: 200 OK, with session description
(1029) -----> (5060)
17.379     Status: 200 OK, wit    SIP/SDP: Status: 200 OK, with session description
(1029) -----> (5060)
19.381     Status: 200 OK, wit    SIP/SDP: Status: 200 OK, with session description
(1029) -----> (5060)
23.376     Status: 200 OK, wit    SIP/SDP: Status: 200 OK, with session description
(1029) -----> (5060)
25.014     Request: BYE sip:10    SIP: Request: BYE sip:101@190.235.19.211:5060
(1029) <----- (5060)
    
```

TRAZA ID 6

```

Time      190.235.19.211      192.168.1.100
10.645     Source port: scol      UDP: Source port: scol Destination port: esri_sde
(1200) -----> (5151)
10.682     Request: INVITE sip    SIP/SDP: Request: INVITE
sip:101@190.235.19.211:5060;rinstance=d9540c8f5a859c29;transport=UDP
(1029) <----- (5060)
10.908     Status: 180 Ringing    SIP: Status: 180 Ringing
(1029) -----> (5060)
19.872     Status: 200 OK, wit    SIP/SDP: Status: 200 OK, with session description
(1029) -----> (5060)
19.873     Request: ACK sip:10    SIP: Request: ACK sip:101@190.235.19.211:5060
29.01     Request: BYE sip:10    SIP: Request: BYE sip:101@190.235.19.211:5060
(1029) <----- (5060)
    
```

TRAZA ID 7

```

Time      190.235.19.211      190.113.194.134
    
```


192.168.1.100
 5.334 Source port: scol UDP: Source port: scol Destination port: esri_sde
 (1200) -----> (5151)
 5.37 Request: INVITE sip SIP/SDP: Request:
 INVITE101@192.168.43.8:5060;rinstance=253c2ff1818fc3cd;transport=UDP,
 (5060) -----> (16444)
 5.712 Status: 180 Ringing SIP: Status: 180 Ringing
 (5060) <----- (16444)
 12.296 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
 (5060) <----- (16444)
 12.296 Request: ACK sip:10 SIP: Request: ACK
 sip:101@192.168.43.8:5060;rinstance=253c2ff1818fc3cd;transport=UDP
 (5060) -----> (16444)
 14.872 Request: BYE sip:38 SIP: Request: BYE sip:3887@181.65.29.159
 (5060) <----- (16444)
 14.872 Status: 200 OK SIP: Status: 200 OK
 (5060) -----> (16444)

TRAZA ID 8

Time 190.235.19.211 190.113.194.134
 192.168.1.100
 8.467 Source port: scol UDP: Source port: scol Destination port: esri_sde
 (1200) -----> (5151)
 8.539 Request: INVITE sip SIP/SDP: Request: INVITE
 192.168.43.8:5060;rinstance=253c2ff1818fc3cd;transport=UDP
 (5060) -----> (16444)
 8.841 Status: 180 Ringing SIP: Status: 180 Ringing
 (5060) <----- (16444)
 12.048 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
 (5060) <----- (16444)
 12.049 Request: ACK sip:10 SIP: Request: ACK
 sip:101@192.168.43.8:5060;rinstance=253c2ff1818fc3cd;transport=UDP
 (5060) -----> (16444)
 15.232 Request: BYE sip:38 SIP: Request: BYE sip:3887@181.65.29.159
 (5060) <----- (16444)
 15.233 Status: 200 OK SIP: Status: 200 OK
 (5060) -----> (16444)

TRAZA ID 9

Time 190.235.19.211 190.113.194.134
 192.168.1.100
 4.512 Source port: scol UDP: Source port: scol Destination port: esri_sde
 (1200) -----> (5151)
 4.545 Request: INVITE sip SIP/SDP: Request: INVITE
 sip:101@192.168.43.8:5060;rinstance=253c2ff1818fc3cd;transport=UDP, with session description
 (5060) -----> (16444)
 4.902 Status: 180 Ringing SIP: Status: 180 Ringing
 (5060) <----- (16444)
 6.625 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
 (5060) <----- (16444)
 6.626 Request: ACK sip:10 SIP: Request: ACK
 sip:101@192.168.43.8:5060;rinstance=253c2ff1818fc3cd;transport=UDP
 (5060) -----> (16444)
 7.185 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
 (5060) <----- (16444)
 8.89 Request: BYE sip:38 SIP: Request: BYE sip:3887@181.65.29.159
 (5060) <----- (16444)
 8.89 Status: 200 OK SIP: Status: 200 OK
 (5060) -----> (16444)

TRAZA ID 10

Time 190.235.19.211 192.168.1.100
 14.834 Source port: scol UDP: Source port: scol Destination port: esri_sde
 (1200) -----> (5151)
 14.905 Request: INVITE sip SIP/SDP: Request: INVITE
 sip:101@190.235.19.211:5060;rinstance=d9540c8f5a859c29;transport=UDP, with session description
 (1029) <----- (5060)
 15.044 Status: 180 Ringing SIP: Status: 180 Ringing
 (1029) -----> (5060)
 23.259 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
 (1029) -----> (5060)
 23.259 Request: ACK sip:10 SIP: Request: ACK sip:101@190.235.19.211:5060
 (1029) <----- (5060)
 23.727 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
 (1029) -----> (5060)
 24.717 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
 (1029) -----> (5060)
 26.715 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
 (1029) -----> (5060)

TRAZA ID 11

```

Time      190.235.19.211                192.168.1.100
8.76      Source port: scol                UDP: Source port: scol Destination port: esri_sde
(1200) -----> (5151)
8.8       Request: INVITE sip                SIP/SDP: Request: INVITE sip:qoczefsk@190.235.19.211:63617, with session
description
(1024) <----- (5060)
8.898     Status: 100 Trying                SIP: Status: 100 Trying
(1024) -----> (5060)
8.919     Status: 180 Ringing              SIP: Status: 180 Ringing
(1024) -----> (5060)
15.576    Status: 200 OK, wit               SIP/SDP: Status: 200 OK, with session description
(1024) -----> (5060)
15.577    Request: ACK sip:qo               SIP: Request: ACK sip:qoczefsk@190.235.19.211:63617
(1024) <----- (5060)
18.479    Request: BYE sip:38              SIP: Request: BYE sip:3887@181.65.29.159
(1024) -----> (5060)
18.479    Status: 200 OK                   SIP: Status: 200 OK
(1024) <----- (5060)
    
```

TRAZA ID 12

```

Time      190.235.19.211                192.168.1.100
14.08     Source port: scol                UDP: Source port: scol Destination port: esri_sde
(1200) -----> (5151)
14.115    Request: INVITE sip                SIP/SDP: Request: INVITE sip:qoczefsk@190.235.19.211:63617, with session
description
(1024) <----- (5060)
14.187    Status: 100 Trying                SIP: Status: 100 Trying
(1024) -----> (5060)
14.208    Status: 180 Ringing              SIP: Status: 180 Ringing
(1024) -----> (5060)
21.938    Status: 200 OK, wit               SIP/SDP: Status: 200 OK, with session description
(1024) -----> (5060)
21.938    Request: ACK sip:qo               SIP: Request: ACK sip:qoczefsk@190.235.19.211:63617
(1024) <----- (5060)
24.562    Request: BYE sip:38              SIP: Request: BYE sip:3887@181.65.29.159
(1024) -----> (5060)
24.565    Status: 200 OK                   SIP: Status: 200 OK
(1024) <----- (5060)
    
```

TRAZA ID 13

```

Time      190.235.19.211                190.113.194.134
                                                192.168.1.100
7.004     Source port: scol                UDP: Source port: scol Destination port: esri_sde
(1200) -----> (5151)
7.075     Request: INVITE sip                SIP/SDP: Request: INVITE
sip:101@192.168.43.8:5060;rinstance=3d9b095eed8ff26;transport=UDP, with session description
(5060) -----> (16346)
7.405     Status: 180 Ringing              SIP: Status: 180 Ringing
(5060) <----- (16346)
13.888    Status: 200 OK, wit               SIP/SDP: Status: 200 OK, with session description
(5060) <----- (16346)
13.888    Request: ACK sip:10              SIP: Request: ACK
sip:101@192.168.43.8:5060;rinstance=3d9b095eed8ff26;transport=UDP
(5060) -----> (16346)
16.403    Request: BYE sip:38              SIP: Request: BYE sip:3887@181.65.29.159
(5060) <----- (16346)
16.405    Status: 200 OK                   SIP: Status: 200 OK
(5060) -----> (16346)
    
```

TRAZA ID 14

```

Time      190.235.19.211                190.113.194.134
                                                192.168.1.100
8.276     Source port: scol                UDP: Source port: scol Destination port: esri_sde
(1200) -----> (5151)
8.353     Request: INVITE sip                SIP/SDP: Request: INVITE
sip:101@192.168.43.8:5060;rinstance=3d9b095eed8ff26;transport=UDP, with session description
(5060) -----> (16346)
8.682     Status: 180 Ringing              SIP: Status: 180 Ringing
(5060) <----- (16346)
14.965    Status: 200 OK, wit               SIP/SDP: Status: 200 OK, with session description
(5060) <----- (16346)
14.966    Request: ACK sip:10              SIP: Request: ACK
sip:101@192.168.43.8:5060;rinstance=3d9b095eed8ff26;transport=UDP
(5060) -----> (16346)
20.581    Request: BYE sip:38              SIP: Request: BYE sip:3887@181.65.29.159
(5060) <----- (16346)
20.584    Status: 200 OK                   SIP: Status: 200 OK
    
```

(5060) -----> (16346)

TRAZA ID 15

Time	190.235.19.211	190.113.194.134	
		192.168.1.100	
7.425	Source port: scol		UDP: Source port: scol Destination port: esri_sde
	(1200) ----->	(5151)	
7.455		Request: INVITE sip	SIP/SDP: Request: INVITE
sip:101@192.168.43.8:5060;	rinstance=3d9b095eed8ff26;	transport=UDP,	with session description
	(5060) ----->	(16346)	
7.783		Status: 180 Ringing	SIP: Status: 180 Ringing
	(5060) <-----	(16346)	
15.327		Status: 200 OK, wit	SIP/SDP: Status: 200 OK, with session description
	(5060) <-----	(16346)	
15.327		Request: ACK sip:10	SIP: Request: ACK
sip:101@192.168.43.8:5060;	rinstance=3d9b095eed8ff26;	transport=UDP	
	(5060) ----->	(16346)	
15.807		Status: 200 OK, wit	SIP/SDP: Status: 200 OK, with session description
	(5060) <-----	(16346)	
17.711		Request: BYE sip:38	SIP: Request: BYE sip:3887@181.65.29.159
	(5060) <-----	(16346)	
17.712		Status: 200 OK	SIP: Status: 200 OK
	(5060) ----->	(16346)	

TRAZA ID 16

Time	190.238.143.214	190.113.194.57	
		192.168.1.100	
8.825	Source port: scol		UDP: Source port: scol Destination port: esri_sde
	(1200) ----->	(5151)	
8.872		Request: INVITE sip	SIP/SDP: Request: INVITE
sip:101@192.168.43.8:5060;	rinstance=3f3ed236702ef8ca;	transport=UDP,	with session description
	(5060) ----->	(13206)	
9.183		Status: 180 Ringing	SIP: Status: 180 Ringing
	(5060) <-----	(13206)	
16.389		Status: 200 OK, wit	SIP/SDP: Status: 200 OK, with session description
	(5060) <-----	(13206)	
16.39		Request: ACK sip:10	SIP: Request: ACK
sip:101@192.168.43.8:5060;	rinstance=3f3ed236702ef8ca;	transport=UDP	
	(5060) ----->	(13206)	
18.917		Request: BYE sip:38	SIP: Request: BYE sip:3887@181.65.29.159
	(5060) <-----	(13206)	
18.921		Status: 200 OK	SIP: Status: 200 OK
	(5060) ----->	(13206)	

TRAZA ID 17

Time	190.238.143.214	190.113.194.57	
		192.168.1.100	
5.413	Source port: scol		UDP: Source port: scol Destination port: esri_sde
	(1200) ----->	(5151)	
5.445		Request: INVITE sip	SIP/SDP: Request: INVITE
sip:101@192.168.43.8:5060;	rinstance=3f3ed236702ef8ca;	transport=UDP,	with session description
	(5060) ----->	(13206)	
6.721		Status: 180 Ringing	SIP: Status: 180 Ringing
	(5060) <-----	(13206)	
13.145		Status: 200 OK, wit	SIP/SDP: Status: 200 OK, with session description
	(5060) <-----	(13206)	
13.145		Request: ACK sip:10	SIP: Request: ACK
sip:101@192.168.43.8:5060;	rinstance=3f3ed236702ef8ca;	transport=UDP	
	(5060) ----->	(13206)	
17.211		Request: BYE sip:38	SIP: Request: BYE sip:3887@181.65.29.159
	(5060) <-----	(13206)	
17.211		Status: 200 OK	SIP: Status: 200 OK
	(5060) ----->	(13206)	

TRAZA ID 18

Time	190.238.143.214	190.113.194.57	
		192.168.1.100	
4.752	Source port: scol		UDP: Source port: scol Destination port: esri_sde
	(1200) ----->	(5151)	
4.827		Request: INVITE sip	SIP/SDP: Request: INVITE
sip:101@192.168.43.8:5060;	rinstance=3f3ed236702ef8ca;	transport=UDP,	with session description
	(5060) ----->	(13206)	
5.149		Status: 180 Ringing	SIP: Status: 180 Ringing
	(5060) <-----	(13206)	
13.094		Status: 200 OK, wit	SIP/SDP: Status: 200 OK, with session description
	(5060) <-----	(13206)	
13.095		Request: ACK sip:10	SIP: Request: ACK
sip:101@192.168.43.8:5060;	rinstance=3f3ed236702ef8ca;	transport=UDP	
	(5060) ----->	(13206)	
17.439		Request: BYE sip:38	SIP: Request: BYE sip:3887@181.65.29.159
	(5060) <-----	(13206)	

17.44 Status: 200 OK SIP: Status: 200 OK
(5060) -----> (13206)

TRAZA ID 19

Time 190.238.143.214 190.113.194.57
192.168.1.100
8.741 Source port: scol UDP: Source port: scol Destination port: esri_sde
(1200) -----> (5151)
8.823 Request: INVITE sip SIP/SDP: Request: INVITE
sip:101@192.168.43.8:5060;rinstance=3f3ed236702ef8ca;transport=UDP, with session description
(5060) -----> (13206)
9.21 Status: 180 Ringing SIP: Status: 180 Ringing
(5060) <----- (13206)
15.177 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
(5060) <----- (13206)
15.177 Request: ACK sip:10 SIP: Request: ACK
sip:101@192.168.43.8:5060;rinstance=3f3ed236702ef8ca;transport=UDP
(5060) -----> (13206)
16.513 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
(5060) <----- (13206)
19.1 Request: BYE sip:38 SIP: Request: BYE sip:3887@181.65.29.159
(5060) <----- (13206)
19.101 Status: 200 OK SIP: Status: 200 OK
(5060) -----> (13206)

TRAZA ID 20

Time 190.238.143.214 190.113.194.57
192.168.1.100
7.012 Source port: scol UDP: Source port: scol Destination port: esri_sde
(1200) -----> (5151)
7.113 Request: INVITE sip SIP/SDP: Request: INVITE
sip:101@192.168.43.8:5060;rinstance=3f3ed236702ef8ca;transport=UDP, with session description
(5060) -----> (13206)
7.418 Status: 180 Ringing SIP: Status: 180 Ringing
(5060) <----- (13206)
16.177 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
(5060) <----- (13206)
16.177 Request: ACK sip:10 SIP: Request: ACK
sip:101@192.168.43.8:5060;rinstance=3f3ed236702ef8ca;transport=UDP
(5060) -----> (13206)
19.969 Request: BYE sip:38 SIP: Request: BYE sip:3887@181.65.29.159
(5060) <----- (13206)
19.969 Status: 200 OK SIP: Status: 200 OK
(5060) -----> (13206)

TRAZA ID 21

Time 190.238.143.214 190.113.194.57
192.168.1.100
6.215 Source port: scol UDP: Source port: scol Destination port: esri_sde
(1200) -----> (5151)
6.255 Request: INVITE sip SIP/SDP: Request: INVITE
sip:101@192.168.43.8:5060;rinstance=3f3ed236702ef8ca;transport=UDP, with session description
(5060) -----> (13206)
6.549 Status: 180 Ringing SIP: Status: 180 Ringing
(5060) <----- (13206)
14.554 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
(5060) <----- (13206)
14.555 Request: ACK sip:10 SIP: Request: ACK
sip:101@192.168.43.8:5060;rinstance=3f3ed236702ef8ca;transport=UDP
(5060) -----> (13206)
18.422 Request: BYE sip:38 SIP: Request: BYE sip:3887@181.65.29.159
(5060) <----- (13206)
18.422 Status: 200 OK SIP: Status: 200 OK
(5060) -----> (13206)

TRAZA ID 22

Time 190.235.19.211 192.168.1.100
13.477 Request: INVITE sip SIP/SDP: Request: INVITE sip:804@181.65.29.159, with session description
(1030) -----> (5060)
13.478 Status: 401 Unautho SIP: Status: 401 Unauthorized
(1030) <----- (5060)
13.575 Request: ACK sip:80 SIP: Request: ACK sip:804@181.65.29.159
(1030) -----> (5060)
13.626 Request: INVITE sip SIP/SDP: Request: INVITE sip:804@181.65.29.159, with session description
(1030) -----> (5060)
13.626 Status: 100 Trying SIP: Status: 100 Trying
(1030) <----- (5060)
13.633 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
(1030) <----- (5060)
13.863 Request: ACK sip:80 SIP: Request: ACK sip:804@181.65.29.159

(1030) -----> (5060)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)

18.31

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Seven 7 (end)

18.888

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Four 4 (end)

19.346

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Seven 7 (end)

19.778

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Five 5 (end)

20.316

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Three 3 (end)

21.568

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Zero 0 (end)

22.352

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Three 3 (end)

22.912

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Eight 8 (end)

23.604

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Eight 8 (end)

23.979

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Seven 7 (end)

24.662

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Pound # (end)

25.416

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Three 3 (end)

48.128

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Pound # (end)

48.778

(4002) -----> (13128)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)

52.443

(4002) -----> (13128)
Source port: 53320 UDP: Source port: 53320 Destination port: scol

52.482

(1200) <----- (53320)
Source port: scol UDP: Source port: scol Destination port: 53320

52.507

(1200) -----> (53320)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)

53.469

(4002) -----> (13128)
Source port: 60636 UDP: Source port: 60636 Destination port: scol

53.502

(1200) <----- (60636)
Source port: scol UDP: Source port: scol Destination port: 60636

53.548

(1200) -----> (60636)
Request: BYE sip:80 SIP: Request: BYE sip:804@181.65.29.159

55.177

(1030) -----> (5060)
Status: 200 OK SIP: Status: 200 OK

55.18

(1030) <----- (5060)

TRAZA ID 23

Time 190.235.19.211 192.168.1.100

7.453 Request: INVITE sip SIP/SDP: Request: INVITE sip:804@181.65.29.159, with session description

(1030) -----> (5060)
Status: 401 Unautho SIP: Status: 401 Unauthorized

7.454

(1030) <----- (5060)
Request: ACK sip:80 SIP: Request: ACK sip:804@181.65.29.159

7.542

(1030) -----> (5060)
Request: INVITE sip SIP/SDP: Request: INVITE sip:804@181.65.29.159, with session description

7.592

(1030) -----> (5060)
Status: 100 Trying SIP: Status: 100 Trying

7.593

(1030) <----- (5060)
Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description

7.594

(1030) <----- (5060)
Request: ACK sip:80 SIP: Request: ACK sip:804@181.65.29.159

7.792

(1030) -----> (5060)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)

11.576

(4004) -----> (19970)

12.087	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Seven 7 (end)
	(4004) -----> (19970)	
12.455	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Four 4 (end)
	(4004) -----> (19970)	
12.829	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Seven 7 (end)
	(4004) -----> (19970)	
13.619	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Five 5 (end)
	(4004) -----> (19970)	
14.405	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Three 3 (end)
	(4004) -----> (19970)	
15.055	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Zero 0 (end)
	(4004) -----> (19970)	
15.755	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Three 3 (end)
	(4004) -----> (19970)	
16.359	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Eight 8 (end)
	(4004) -----> (19970)	
16.776	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Eight 8 (end)
	(4004) -----> (19970)	
17.242	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Seven 7 (end)
	(4004) -----> (19970)	
18.031	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Pound # (end)
	(4004) -----> (19970)	
41.241	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Three 3 (end)
	(4004) -----> (19970)	
41.762	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Pound # (end)
	(4004) -----> (19970)	
44.826	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)
	(4004) -----> (19970)	
44.857	Source port: 35629	UDP: Source port: 35629 Destination port: scol
	(1200) <----- (35629)	
45.665	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)
	(4004) -----> (19970)	
45.699	Source port: 36350	UDP: Source port: 36350 Destination port: scol
	(1200) <----- (36350)	
45.793	Source port: scol	UDP: Source port: scol Destination port: 36350
	(1200) -----> (36350)	
46.804	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)
	(4004) -----> (19970)	
46.839	Source port: 38598	UDP: Source port: 38598 Destination port: scol
	(1200) <----- (38598)	
46.865	Source port: scol	UDP: Source port: scol Destination port: 38598
	(1200) -----> (38598)	
47.803	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)
	(4004) -----> (19970)	
47.84	Source port: 47612	UDP: Source port: 47612 Destination port: scol
	(1200) <----- (47612)	
47.866	Source port: scol	UDP: Source port: scol Destination port: 47612
	(1200) -----> (47612)	
49.052	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)
	(4004) -----> (19970)	
49.087	Source port: 45132	UDP: Source port: 45132 Destination port: scol
	(1200) <----- (45132)	
49.212	Source port: scol	UDP: Source port: scol Destination port: 45132
	(1200) -----> (45132)	
49.988	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)
	(4004) -----> (19970)	
50.022	Source port: 53081	UDP: Source port: 53081 Destination port: scol
	(1200) <----- (53081)	
50.045	Source port: scol	UDP: Source port: scol Destination port: 53081
	(1200) -----> (53081)	
51.106	Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)
	(4004) -----> (19970)	
51.134	Source port: 33440	UDP: Source port: 33440 Destination port: scol
	(1200) <----- (33440)	
51.164	Source port: scol	UDP: Source port: scol Destination port: 33440

53.836 (1200) -----> (33440)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)

(4004) -----> (19970)
Source port: 53976 UDP: Source port: 53976 Destination port: scol

53.868 (1200) <----- (53976)
Source port: scol UDP: Source port: scol Destination port: 53976

53.943 (1200) -----> (53976)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)

55.044 (4004) -----> (19970)
Source port: 58803 UDP: Source port: 58803 Destination port: scol

55.079 (1200) <----- (58803)
Source port: scol UDP: Source port: scol Destination port: 58803

55.113 (1200) -----> (58803)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)

55.88 (4004) -----> (19970)
Source port: 33077 UDP: Source port: 33077 Destination port: scol

55.939 (1200) <----- (33077)
Source port: scol UDP: Source port: scol Destination port: 33077

55.993 (1200) -----> (33077)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)

57.037 (4004) -----> (19970)
Source port: 39809 UDP: Source port: 39809 Destination port: scol

57.096 (1200) <----- (39809)
Source port: scol UDP: Source port: scol Destination port: 39809

57.161 (1200) -----> (39809)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)

57.788 (4004) -----> (19970)
Source port: 49971 UDP: Source port: 49971 Destination port: scol

57.825 (1200) <----- (49971)
Source port: scol UDP: Source port: scol Destination port: 49971

57.853 (1200) -----> (49971)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)

58.583 (4004) -----> (19970)
Source port: 41083 UDP: Source port: 41083 Destination port: scol

58.623 (1200) <----- (41083)
Source port: scol UDP: Source port: scol Destination port: 41083

58.645 (1200) -----> (41083)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)

59.253 (4004) -----> (19970)
Source port: 60573 UDP: Source port: 60573 Destination port: scol

59.288 (1200) <----- (60573)
Source port: scol UDP: Source port: scol Destination port: 60573

59.332 (1200) -----> (60573)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)

60.152 (4004) -----> (19970)
Source port: 49676 UDP: Source port: 49676 Destination port: scol

60.187 (1200) <----- (49676)
Source port: scol UDP: Source port: scol Destination port: 49676

60.221 (1200) -----> (49676)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)

60.94 (4004) -----> (19970)
Source port: 50924 UDP: Source port: 50924 Destination port: scol

60.977 (1200) <----- (50924)
Source port: scol UDP: Source port: scol Destination port: 50924

61.002 (1200) -----> (50924)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)

61.687 (4004) -----> (19970)
Source port: 43796 UDP: Source port: 43796 Destination port: scol

61.72 (1200) <----- (43796)
Source port: scol UDP: Source port: scol Destination port: 43796

61.753 (1200) -----> (43796)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)

62.29 (4004) -----> (19970)
Source port: 56711 UDP: Source port: 56711 Destination port: scol

62.323 (1200) <----- (56711)
Source port: scol UDP: Source port: scol Destination port: 56711

62.396 (1200) -----> (56711)
Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)

62.985 (4004) -----> (19970)
Source port: 51392 UDP: Source port: 51392 Destination port: scol

63.025 (1200) <----- (51392)
Source port: scol UDP: Source port: scol Destination port: 51392

63.139 (1200) -----> (51392)


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63.84      Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)
          (4004) -----> (19970)
63.879    Source port: 57426          UDP: Source port: 57426 Destination port: scol
          (1200) <----- (57426)
63.95     Source port: scol          UDP: Source port: scol Destination port: 57426
          (1200) -----> (57426)
64.751    Request: BYE sip:80         SIP: Request: BYE sip:804@181.65.29.159
          (1030) -----> (5060)
64.754    Status: 200 OK            SIP: Status: 200 OK
          (1030) <----- (5060)
    
```

TRAZA ID 24

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Time      190.235.19.211
          192.168.1.100
10.244    Request: INVITE sip            SIP/SDP: Request: INVITE sip:804@181.65.29.159, with session description
          (1030) -----> (5060)
10.245    Status: 401 Unautho         SIP: Status: 401 Unauthorized
          (1030) <----- (5060)
10.312    Request: ACK sip:80         SIP: Request: ACK sip:804@181.65.29.159
          (1030) -----> (5060)
10.362    Request: INVITE sip            SIP/SDP: Request: INVITE sip:804@181.65.29.159, with session description
          (1030) -----> (5060)
10.363    Status: 100 Trying          SIP: Status: 100 Trying
          (1030) <----- (5060)
10.363    Status: 200 OK, wit         SIP/SDP: Status: 200 OK, with session description
          (1030) <----- (5060)
10.555    Request: ACK sip:80         SIP: Request: ACK sip:804@181.65.29.159
          (1030) -----> (5060)
15.343    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)
          (4006) -----> (11830)
15.765    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Seven 7 (end)
          (4006) -----> (11830)
16.179    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Four 4 (end)
          (4006) -----> (11830)
16.554    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Seven 7 (end)
          (4006) -----> (11830)
17.154    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Five 5 (end)
          (4006) -----> (11830)
17.848    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Three 3 (end)
          (4006) -----> (11830)
18.455    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Zero 0 (end)
          (4006) -----> (11830)
19.059    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Three 3 (end)
          (4006) -----> (11830)
19.569    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Eight 8 (end)
          (4006) -----> (11830)
19.851    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Eight 8 (end)
          (4006) -----> (11830)
20.356    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Seven 7 (end)
          (4006) -----> (11830)
20.92     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Pound # (end)
          (4006) -----> (11830)
43.21     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Three 3 (end)
          (4006) -----> (11830)
44.05     Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Pound # (end)
          (4006) -----> (11830)
48.131    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)
          (4006) -----> (11830)
48.17     Source port: 60044          UDP: Source port: 60044 Destination port: scol
          (1200) <----- (60044)
48.193    Source port: scol          UDP: Source port: scol Destination port: 60044
          (1200) -----> (60044)
49.567    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)
          (4006) -----> (11830)
    
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49.603      Source port: 38991      UDP: Source port: 38991 Destination port: scol
(1200) <----- (38991)
49.631      Source port: scol      UDP: Source port: scol Destination port: 38991
(1200) -----> (38991)
51.057      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)
(4006) -----> (11830)
51.087      Source port: 36873      UDP: Source port: 36873 Destination port: scol
(1200) <----- (36873)
51.115      Source port: scol      UDP: Source port: scol Destination port: 36873
(1200) -----> (36873)
52.493      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)
(4006) -----> (11830)
52.527      Source port: 55063      UDP: Source port: 55063 Destination port: scol
(1200) <----- (55063)
52.555      Source port: scol      UDP: Source port: scol Destination port: 55063
(1200) -----> (55063)
53.94       Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)
(4006) -----> (11830)
53.968      Source port: 39779      UDP: Source port: 39779 Destination port: scol
(1200) <----- (39779)
53.994      Source port: scol      UDP: Source port: scol Destination port: 39779
(1200) -----> (39779)
55.143      Request: REGISTER s      SIP: Request: REGISTER sip:181.65.29.159
(1030) -----> (5060)
55.143      Status: 401 Unautho      SIP: Status: 401 Unauthorized (0 bindings)
(1030) <----- (5060)
55.234      Request: REGISTER s      SIP: Request: REGISTER sip:181.65.29.159
(1030) -----> (5060)
55.235      Status: 200 OK (        SIP: Status: 200 OK (1 bindings)
(1030) <----- (5060)
55.603      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF One 1 (end)
(4006) -----> (11830)
55.639      Source port: 38500      UDP: Source port: 38500 Destination port: scol
(1200) <----- (38500)
55.667      Source port: scol      UDP: Source port: scol Destination port: 38500
(1200) -----> (38500)
59.048      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Four 4 (end)
(4006) -----> (11830)
61.226      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Five 5 (end)
(4006) -----> (11830)
63.455      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Two 2 (end)
(4006) -----> (11830)
63.512      Source port: 49341      UDP: Source port: 49341 Destination port: scol
(1200) <----- (49341)
63.541      Source port: scol      UDP: Source port: scol Destination port: 49341
(1200) -----> (49341)
66.078      Request: BYE sip:80      SIP: Request: BYE sip:80@181.65.29.159
(1030) -----> (5060)
66.078      Status: 200 OK          SIP: Status: 200 OK
(1030) <----- (5060)
    
```

TRAZA ID 25

```

Time      190.113.194.134      190.235.19.211
          192.168.1.100
12.092      Request: INVITE sip      SIP/SDP: Request: INVITE
sip:804@181.65.29.159;transport=UDP, with session description
(16444) -----> (5060)
12.092      Status: 401 Unautho      SIP: Status: 401 Unauthorized
(16444) <----- (5060)
12.351      Request: ACK sip:80      SIP: Request: ACK sip:80@181.65.29.159;transport=UDP
(16444) -----> (5060)
12.494      Request: INVITE sip      SIP/SDP: Request: INVITE
sip:804@181.65.29.159;transport=UDP, with session description
(16444) -----> (5060)
12.494      Status: 100 Trying      SIP: Status: 100 Trying
(16444) <----- (5060)
12.496      Status: 200 OK, wit      SIP/SDP: Status: 200 OK, with session description
(16444) <----- (5060)
12.807      Request: ACK sip:80      SIP: Request: ACK sip:80@181.65.29.159
(16444) -----> (5060)
16.185      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)
(45463) -----> (14682)
16.802      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)
(45463) -----> (14682)
    
```

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17.347      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Four
4 (end)
(45463) -----> (14682)
17.803      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)
(45463) -----> (14682)
18.522      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Five
5 (end)
(45463) -----> (14682)
19.163      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF
Three 3 (end)
(45463) -----> (14682)
20.083      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Zero
0 (end)
(45463) -----> (14682)
21.003      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF
Three 3 (end)
(45463) -----> (14682)
22.245      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Eight
8 (end)
(45463) -----> (14682)
22.246      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Eight
8 (end)
(45463) -----> (14682)
23.782      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)
(45463) -----> (14682)
25.104      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF
Pound # (end)
(45463) -----> (14682)
47.316      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF
Three 3 (end)
(45463) -----> (14682)
48.142      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF
Pound # (end)
(45463) -----> (14682)
51.084      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF One
1 (end)
(45463) -----> (14682)
51.123      Source port: 52501      UDP: Source port: 52501 Destination port: scol
(52501) -----> (1200)
51.152      Source port: scol      UDP: Source port: scol Destination port: 52501
(52501) <----- (1200)
53.402      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)
(45463) -----> (14682)
53.643      Source port: 59474      UDP: Source port: 59474 Destination port: scol
(59474) -----> (1200)
53.667      Source port: scol      UDP: Source port: scol Destination port: 59474
(59474) <----- (1200)
57.107      Request: BYE sip:80      SIP: Request: BYE sip:804@181.65.29.159
(16444) -----> (5060)
57.111      Status: 200 OK          SIP: Status: 200 OK
(16444) <----- (5060)
    
```

TRAZA ID 26

```

Time      190.113.194.134      190.235.19.211
          192.168.1.100
5.875      Request: INVITE sip      SIP/SDP: Request: INVITE
sip:804@181.65.29.159;transport=UDP, with session description
(16444) -----> (5060)
5.875      Status: 401 Unautho      SIP: Status: 401 Unauthorized
(16444) <----- (5060)
6.124      Request: ACK sip:80      SIP: Request: ACK sip:804@181.65.29.159;transport=UDP
(16444) -----> (5060)
6.355      Request: INVITE sip      SIP/SDP: Request: INVITE
sip:804@181.65.29.159;transport=UDP, with session description
(16444) -----> (5060)
6.358      Status: 100 Trying        SIP: Status: 100 Trying
(16444) <----- (5060)
6.358      Status: 200 OK, wit      SIP/SDP: Status: 200 OK, with session description
(16444) <----- (5060)
6.669      Request: ACK sip:80      SIP: Request: ACK sip:804@181.65.29.159
(16444) -----> (5060)
11.545      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)
(26613) -----> (10136)
12.756      Payload type=RTP Ev      RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)
(26613) -----> (10136)
    
```

13.235 4 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF Four
13.714 Seven 7 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF
14.415 5 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF Five
15.22 Three 3 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF
16.016 0 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF Zero
17.096 Three 3 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF
17.914 8 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF Eight
17.915 8 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF Eight
19.114 Seven 7 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF
19.797 Pound # (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF
41.897 Three 3 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF
42.636 Pound # (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF
47.116 1 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF One
47.157	Source port: 40668 (40668) -----> (1200)	UDP: Source port: 40668 Destination port: scol
47.181	Source port: scol (40668) <----- (1200)	UDP: Source port: scol Destination port: 40668
50.596 2 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF Two
50.631	Source port: 33427 (33427) -----> (1200)	UDP: Source port: 33427 Destination port: scol
50.66	Source port: scol (33427) <----- (1200)	UDP: Source port: scol Destination port: 33427
57.636 5 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF Five
60.637 1 (end)	Payload type=RTP Ev (26613) -----> (10136)	RTP EVENT: Payload type=RTP Event, DTMF One
60.676	Source port: 38868 (38868) -----> (1200)	UDP: Source port: 38868 Destination port: scol
60.701	Source port: scol (38868) <----- (1200)	UDP: Source port: scol Destination port: 38868
62.811	Request: BYE sip:80 (16444) -----> (5060)	SIP: Request: BYE sip:804@181.65.29.159
62.813	Status: 200 OK (16444) <----- (5060)	SIP: Status: 200 OK

TRAZA ID 27

Time	190.113.194.134	190.235.19.211	
		192.168.1.100	
4.933	Request: INVITE sip		SIP/SDP: Request: INVITE
	sip:804@181.65.29.159;transport=UDP, with session description (16444) -----> (5060)		
4.933	Status: 401 Unautho		SIP: Status: 401 Unauthorized
	(16444) <----- (5060)		
5.167	Request: ACK sip:80		SIP: Request: ACK sip:804@181.65.29.159;transport=UDP
	(16444) -----> (5060)		
5.354	Request: INVITE sip		SIP/SDP: Request: INVITE
	sip:804@181.65.29.159;transport=UDP, with session description (16444) -----> (5060)		
5.354	Status: 100 Trying		SIP: Status: 100 Trying
	(16444) <----- (5060)		
5.363	Status: 200 OK, wit		SIP/SDP: Status: 200 OK, with session description
	(16444) <----- (5060)		
5.651	Request: ACK sip:80		SIP: Request: ACK sip:804@181.65.29.159

11.077 2 (end)	(16444) -----> (5060) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Two
12.024 Seven 7 (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
12.695 4 (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Four
13.194 Seven 7 (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
13.694 5 (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Five
14.695 Three 3 (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
15.479 0 (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Zero
16.575 Three 3 (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
17.495 8 (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Eight
17.496 8 (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Eight
18.834 Seven 7 (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
19.496 Pound # (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
42.225 Three 3 (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
43.456 Pound # (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF
53.084 1 (end)	(27826) -----> (12058) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF One
53.115	(27826) -----> (12058) Source port: 43611	UDP: Source port: 43611 Destination port: scol
53.138	(43611) -----> (1200) Source port: scol	UDP: Source port: scol Destination port: 43611
55.446 2 (end)	(43611) <----- (1200) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Two
55.487	(27826) -----> (12058) Source port: 50836	UDP: Source port: 50836 Destination port: scol
55.511	(50836) -----> (1200) Source port: scol	UDP: Source port: scol Destination port: 50836
56.806 1 (end)	(50836) <----- (1200) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF One
56.835	(27826) -----> (12058) Source port: 45599	UDP: Source port: 45599 Destination port: scol
56.867	(45599) -----> (1200) Source port: scol	UDP: Source port: scol Destination port: 45599
58.007 2 (end)	(45599) <----- (1200) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF Two
58.049	(27826) -----> (12058) Source port: 50622	UDP: Source port: 50622 Destination port: scol
58.072	(50622) -----> (1200) Source port: scol	UDP: Source port: scol Destination port: 50622
59.037 1 (end)	(50622) <----- (1200) Payload type=RTP Ev	RTP EVENT: Payload type=RTP Event, DTMF One
59.081	(27826) -----> (12058) Source port: 59439	UDP: Source port: 59439 Destination port: scol
59.105	(59439) -----> (1200) Source port: scol	UDP: Source port: scol Destination port: 59439
61.003	(59439) <----- (1200) Request: BYE sip:80	SIP: Request: BYE sip:804@181.65.29.159
61.003	(16444) -----> (5060) Status: 200 OK	SIP: Status: 200 OK
	(16444) <----- (5060)	

TRAZA ID 28

Time 192.168.1.35 192.168.1.99


```

192.168.1.100
0      Request: INVITE sip
session description
(44000) -----> (5060)
0.001      Status: 401 Unautho
(44000) <----- (5060)
0.01      Request: ACK sip:80
(44000) -----> (5060)
0.012      Request: INVITE sip
session description
(44000) -----> (5060)
0.012      Status: 100 Trying
(44000) <----- (5060)
0.013      Status: 200 OK, wit
(44000) <----- (5060)
0.07      Request: ACK sip:80
(44000) -----> (5060)
3.702      Payload type=RTP Ev
2 (end)
(4006) -----> (15778)
4.259      Payload type=RTP Ev
Seven 7 (end)
(4006) -----> (15778)
4.631      Payload type=RTP Ev
4 (end)
(4006) -----> (15778)
5.048      Payload type=RTP Ev
Seven 7 (end)
(4006) -----> (15778)
5.652      Payload type=RTP Ev
5 (end)
(4006) -----> (15778)
6.354      Payload type=RTP Ev
Three 3 (end)
(4006) -----> (15778)
7.093      Payload type=RTP Ev
0 (end)
(4006) -----> (15778)
8.115      Payload type=RTP Ev
Three 3 (end)
(4006) -----> (15778)
8.857      Payload type=RTP Ev
8 (end)
(4006) -----> (15778)
9.275      Payload type=RTP Ev
8 (end)
(4006) -----> (15778)
9.971      Payload type=RTP Ev
Seven 7 (end)
(4006) -----> (15778)
10.715     Payload type=RTP Ev
Pound # (end)
(4006) -----> (15778)
22.046     Payload type=RTP Ev
Three 3 (end)
(4006) -----> (15778)
22.603     Payload type=RTP Ev
Pound # (end)
(4006) -----> (15778)
25.947     Payload type=RTP Ev
1 (end)
(4006) -----> (15778)
25.982     Source port: 48772
(48772) -----> (1200)
25.983     Source port: scol
(48772) <----- (1200)
27.247     Payload type=RTP Ev
2 (end)
(4006) -----> (15778)
27.283     Source port: 55187
(55187) -----> (1200)
27.284     Source port: scol
(55187) <----- (1200)
28.269     Payload type=RTP Ev
1 (end)
(4006) -----> (15778)
28.305     Source port: 49414
(49414) -----> (1200)
28.306     Source port: scol
(49414) <----- (1200)
29.896     Payload type=RTP Ev
2 (end)
(4006) -----> (15778)
29.928     Source port: 33600
(33600) -----> (1200)
SIP/SDP: Request: INVITE sip:804@192.168.1.100, with
SIP: Status: 401 Unauthorized
SIP: Request: ACK sip:804@192.168.1.100
SIP/SDP: Request: INVITE sip:804@192.168.1.100, with
SIP: Status: 100 Trying
SIP/SDP: Status: 200 OK, with session description
SIP: Request: ACK sip:804@192.168.1.100
RTP EVENT: Payload type=RTP Event, DTMF Two
RTP EVENT: Payload type=RTP Event, DTMF
RTP EVENT: Payload type=RTP Event, DTMF Four
RTP EVENT: Payload type=RTP Event, DTMF
RTP EVENT: Payload type=RTP Event, DTMF Five
RTP EVENT: Payload type=RTP Event, DTMF
RTP EVENT: Payload type=RTP Event, DTMF Zero
RTP EVENT: Payload type=RTP Event, DTMF
RTP EVENT: Payload type=RTP Event, DTMF Eight
RTP EVENT: Payload type=RTP Event, DTMF Eight
RTP EVENT: Payload type=RTP Event, DTMF
RTP EVENT: Payload type=RTP Event, DTMF
RTP EVENT: Payload type=RTP Event, DTMF
RTP EVENT: Payload type=RTP Event, DTMF One
UDP: Source port: 48772 Destination port: scol
UDP: Source port: scol Destination port: 48772
RTP EVENT: Payload type=RTP Event, DTMF Two
UDP: Source port: 55187 Destination port: scol
UDP: Source port: scol Destination port: 55187
RTP EVENT: Payload type=RTP Event, DTMF One
UDP: Source port: 49414 Destination port: scol
UDP: Source port: scol Destination port: 49414
RTP EVENT: Payload type=RTP Event, DTMF Two
UDP: Source port: 33600 Destination port: scol
    
```

```

29.929          Source port: scol          UDP: Source port: scol Destination port: 33600
                (33600) <----- (1200)
31.613          Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF One
1 (end)
(4006) -----> (15778)
31.644          Source port: 53336          UDP: Source port: 53336 Destination port: scol
                (53336) -----> (1200)
31.645          Source port: scol          UDP: Source port: scol Destination port: 53336
                (53336) <----- (1200)
32.542          Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)
(4006) -----> (15778)
32.576          Source port: 34213          UDP: Source port: 34213 Destination port: scol
                (34213) -----> (1200)
32.577          Source port: scol          UDP: Source port: scol Destination port: 34213
                (34213) <----- (1200)
33.378          Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF One
1 (end)
(4006) -----> (15778)
33.417          Source port: 46422          UDP: Source port: 46422 Destination port: scol
                (46422) -----> (1200)
33.418          Source port: scol          UDP: Source port: scol Destination port: 46422
                (46422) <----- (1200)
34.567          Request: BYE sip:80          SIP: Request: BYE sip:804@192.168.1.100
(44000) -----> (5060)
34.567          Status: 200 OK              SIP: Status: 200 OK
(44000) <----- (5060)
    
```

TRAZA ID 29

```

Time    192.168.1.35          192.168.1.99
                192.168.1.100
0        Request: INVITE sip          SIP/SDP: Request: INVITE sip:804@192.168.1.100, with
session description
(44000) -----> (5060)
0        Status: 401 Unautho          SIP: Status: 401 Unauthorized
(44000) <----- (5060)
0.008    Request: ACK sip:80          SIP: Request: ACK sip:804@192.168.1.100
(44000) -----> (5060)
0.009    Request: INVITE sip          SIP/SDP: Request: INVITE sip:804@192.168.1.100, with
session description
(44000) -----> (5060)
0.009    Status: 100 Trying           SIP: Status: 100 Trying
(44000) <----- (5060)
0.01     Status: 200 OK, wit          SIP/SDP: Status: 200 OK, with session description
(44000) <----- (5060)
0.082    Request: ACK sip:80          SIP: Request: ACK sip:804@192.168.1.100
(44000) -----> (5060)
3.919    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)
(4004) -----> (18222)
4.708    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)
(4004) -----> (18222)
5.171    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Four
4 (end)
(4004) -----> (18222)
5.545    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)
(4004) -----> (18222)
6.333    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Five
5 (end)
(4004) -----> (18222)
6.843    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Three 3 (end)
(4004) -----> (18222)
7.633    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Zero
0 (end)
(4004) -----> (18222)
8.378    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Three 3 (end)
(4004) -----> (18222)
9.027    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Eight
8 (end)
(4004) -----> (18222)
9.4      Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF Eight
8 (end)
(4004) -----> (18222)
9.955    Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Seven 7 (end)
(4004) -----> (18222)
10.745   Payload type=RTP Ev          RTP EVENT: Payload type=RTP Event, DTMF
Pound # (end)
(4004) -----> (18222)
    
```



```

21.707 Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF
Three 3 (end)
(4004) -----> (18222)
22.354 Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF
Pound # (end)
(4004) -----> (18222)
25.606 Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)
(4004) -----> (18222)
25.649 Source port: 45758 UDP: Source port: 45758 Destination port: scol
(45758) -----> (1200)
25.65 Source port: scol UDP: Source port: scol Destination port: 45758
(45758) <----- (1200)
26.72 Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF One
1 (end)
(4004) -----> (18222)
26.755 Source port: 58954 UDP: Source port: 58954 Destination port: scol
(58954) -----> (1200)
26.756 Source port: scol UDP: Source port: scol Destination port: 58954
(58954) <----- (1200)
28.763 Payload type=RTP Ev RTP EVENT: Payload type=RTP Event, DTMF Two
2 (end)
(4004) -----> (18222)
28.798 Source port: 46991 UDP: Source port: 46991 Destination port: scol
(46991) -----> (1200)
28.799 Source port: scol UDP: Source port: scol Destination port: 46991
(46991) <----- (1200)
31.036 Request: BYE sip:80 SIP: Request: BYE sip:804@192.168.1.100
(44000) -----> (5060)
31.037 Status: 200 OK SIP: Status: 200 OK
(44000) <----- (5060)
    
```

TRAZA ID 30

```

Time 192.168.1.99 192.168.1.35
0 Source port: scol UDP: Source port: scol Destination port: esri_sde
(1200) -----> (5151)
0.077 Request: INVITE sip SIP/SDP: Request: INVITE sip:101@192.168.1.35:44000;
(5060) -----> (44000)
0.755 Status: 100 Trying SIP: Status: 100 Trying
(5060) <----- (44000)
0.777 Status: 180 Ringing SIP: Status: 180 Ringing
(5060) <----- (44000)
2.872 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
(5060) <----- (44000)
2.875 Request: ACK sip:19 SIP: Request: ACK sip:192.168.1.35:44000
(5060) -----> (44000)
7.267 Request: BYE sip:38 SIP: Request: BYE sip:3887@192.168.1.100
(5060) <----- (44000)
7.267 Status: 200 OK SIP: Status: 200 OK
(5060) -----> (44000)
    
```

TRAZA ID 31

```

Time 192.168.1.99 192.168.1.35
0 Source port: scol UDP: Source port: scol Destination port: esri_sde
(1200) -----> (5151)
0.031 Request: INVITE sip SIP/SDP: Request: INVITE sip:101@192.168.1.35:44000;ob,
with session description (5060) -----> (44000)
1.032 Request: INVITE sip SIP/SDP: Request: INVITE sip:101@192.168.1.35:44000;ob,
with session description (5060) -----> (44000)
1.325 Status: 100 Trying SIP: Status: 100 Trying
(5060) <----- (44000)
1.336 Status: 100 Trying SIP: Status: 100 Trying
(5060) <----- (44000)
1.4 Status: 180 Ringing SIP: Status: 180 Ringing
(5060) <----- (44000)
3.742 Status: 200 OK, wit SIP/SDP: Status: 200 OK, with session description
(5060) <----- (44000)
3.743 Request: ACK sip:19 SIP: Request: ACK sip:192.168.1.35:44000
(5060) -----> (44000)
6.873 Request: BYE sip:38 SIP: Request: BYE sip:3887@192.168.1.100
(5060) <----- (44000)
6.873 Status: 200 OK SIP: Status: 200 OK
(5060) -----> (44000)
    
```

7.2 Pruebas con el servidor web

192.168.1.33: Smartphone Samsung Galaxy Young 5360

192.168.1.100: Servidor Domótico

192.168.1.99: Controlador de Equipos

Time	192.168.1.33	192.168.1.100	192.168.1.99
2.798	Source port: 43044		
	(43044) ----->	(5060)	
11.04	52408 > http [SYN]		
	(52408) ----->	(80)	
11.04	http > 52408 [SYN,		
	(52408) <-----	(80)	
11.042	52408 > http [ACK]		
	(52408) ----->	(80)	
11.044	GET /web.php HTTP/1		
	(52408) ----->	(80)	
11.044	http > 52408 [ACK]		
	(52408) <-----	(80)	
11.044	HTTP/1.1 302 Found		
	(52408) <-----	(80)	
11.044	http > 52408 [FIN,		
	(52408) <-----	(80)	
11.048	52408 > http [ACK]		
	(52408) ----->	(80)	
11.053	52408 > http [FIN,		
	(52408) ----->	(80)	
11.053	http > 52408 [ACK]		
	(52408) <-----	(80)	
11.183	47272 > https [SYN]		
	(47272) ----->	(443)	
11.183	https > 47272 [SYN,		
	(47272) <-----	(443)	
11.185	47272 > https [ACK]		
	(47272) ----->	(443)	
11.189	Client Hello		
	(47272) ----->	(443)	
11.189	https > 47272 [ACK]		
	(47272) <-----	(443)	
11.189	Server Hello, Certi		
	(47272) <-----	(443)	
11.191	47272 > https [ACK]		
	(47272) ----->	(443)	
11.208	Client Key Exchange		
	(47272) ----->	(443)	
11.211	Change Cipher Spec,		
	(47272) <-----	(443)	
11.236	Application Data		
	(47272) ----->	(443)	
11.237	Application Data, A		
	(47272) <-----	(443)	
11.237	Encrypted Alert		
	(47272) <-----	(443)	
11.237	https > 47272 [FIN,		
	(47272) <-----	(443)	
11.239	47272 > https [ACK]		
	(47272) ----->	(443)	
11.274	47272 > https [ACK]		
	(47272) ----->	(443)	
11.278	Encrypted Alert		
	(47272) ----->	(443)	
11.278	47272 > https [RST,		
	(47272) ----->	(443)	
15.571	48031 > https [SYN]		
	(48031) ----->	(443)	
15.571	https > 48031 [SYN,		
	(48031) <-----	(443)	
15.573	48031 > https [ACK]		
	(48031) ----->	(443)	
15.583	Client Hello		
	(48031) ----->	(443)	
15.583	https > 48031 [ACK]		
	(48031) <-----	(443)	
15.583	Server Hello, Certi		
	(48031) <-----	(443)	
15.585	48031 > https [ACK]		

(48031) -----> (443)
 15.604 Client Key Exchange
 (48031) -----> (443)
 15.607 Change Cipher Spec,
 (48031) <----- (443)
 15.635 Application Data
 (48031) -----> (443)
 15.639 Application Data
 (48031) <----- (443)
 15.639 Application Data
 (48031) <----- (443)
 15.639 Encrypted Alert
 (48031) <----- (443)
 15.639 https > 48031 [FIN,
 (48031) <----- (443)
 15.642 48031 > https [ACK]
 (48031) -----> (443)
 15.66 Encrypted Alert
 (48031) -----> (443)
 15.66 48031 > https [RST,
 (48031) -----> (443)
 19.133 54799 > https [SYN]
 (54799) -----> (443)
 19.134 https > 54799 [SYN,
 (54799) <----- (443)
 19.135 54799 > https [ACK]
 (54799) -----> (443)
 19.139 Client Hello
 (54799) -----> (443)
 19.139 https > 54799 [ACK]
 (54799) <----- (443)
 19.14 Server Hello, Certi
 (54799) <----- (443)
 19.142 54799 > https [ACK]
 (54799) -----> (443)
 19.171 Client Key Exchange
 (54799) -----> (443)
 19.174 Change Cipher Spec,
 (54799) <----- (443)
 19.211 54799 > https [ACK]
 (54799) -----> (443)
 19.222 Application Data
 (54799) -----> (443)
 19.223 Application Data, A
 (54799) <----- (443)
 19.224 Encrypted Alert
 (54799) <----- (443)
 19.224 https > 54799 [FIN,
 (54799) <----- (443)
 19.226 54799 > https [ACK]
 (54799) -----> (443)
 19.229 Encrypted Alert
 (54799) -----> (443)
 19.244 54799 > https [RST,
 (54799) -----> (443)
 21.204 54163 > https [SYN]
 (54163) -----> (443)
 21.204 https > 54163 [SYN,
 (54163) <----- (443)
 21.206 54163 > https [ACK]
 (54163) -----> (443)
 21.209 Client Hello
 (54163) -----> (443)
 21.209 https > 54163 [ACK]
 (54163) <----- (443)
 21.21 Server Hello, Certi
 (54163) <----- (443)
 21.214 54163 > https [ACK]
 (54163) -----> (443)
 21.237 Client Key Exchange
 (54163) -----> (443)
 21.24 Change Cipher Spec,
 (54163) <----- (443)
 21.273 Application Data
 (54163) -----> (443)
 21.279 Application Data, A
 (54163) <----- (443)
 21.279 Encrypted Alert
 (54163) <----- (443)
 21.279 https > 54163 [FIN,
 (54163) <----- (443)
 21.282 54163 > https [ACK]
 (54163) -----> (443)
 21.29 Encrypted Alert
 (54163) -----> (443)



```

21.303                               Source port: 51709
                                   (51709) -----> (1200)
21.321      54163 > https [RST,
(54163) -----> (443)
23.532      53290 > https [SYN]
(53290) -----> (443)
23.532      https > 53290 [SYN,
(53290) <----- (443)
23.534      53290 > https [ACK]
(53290) -----> (443)
23.537      Client Hello
(53290) -----> (443)
23.537      https > 53290 [ACK]
(53290) <----- (443)
23.538      Server Hello, Certi
(53290) <----- (443)
23.54       53290 > https [ACK]
(53290) -----> (443)
23.551      Client Key Exchange
(53290) -----> (443)
23.554      Change Cipher Spec,
(53290) <----- (443)
23.586      53290 > https [ACK]
(53290) -----> (443)
23.595      Application Data
(53290) -----> (443)
23.601      Application Data, A
(53290) <----- (443)
23.601      Encrypted Alert
(53290) <----- (443)
23.601      https > 53290 [FIN,
(53290) <----- (443)
23.603      53290 > https [ACK]
(53290) -----> (443)
23.618      Encrypted Alert
(53290) -----> (443)
23.623                               Source port: 52091
                                   (52091) -----> (1200)
23.632      53290 > https [RST,
(53290) -----> (443)
27.399      59641 > https [SYN]
(59641) -----> (443)
27.399      https > 59641 [SYN,
(59641) <----- (443)
27.401      59641 > https [ACK]
(59641) -----> (443)
27.405      Client Hello
(59641) -----> (443)
27.405      https > 59641 [ACK]
(59641) <----- (443)
27.405      Server Hello, Certi
(59641) <----- (443)
27.407      59641 > https [ACK]
(59641) -----> (443)
27.421      Client Key Exchange
(59641) -----> (443)
27.431      Change Cipher Spec,
(59641) <----- (443)
27.469      59641 > https [ACK]
(59641) -----> (443)
27.471      Application Data
(59641) -----> (443)
27.481      Application Data
(59641) <----- (443)
27.481      Application Data
(59641) <----- (443)
27.481      Encrypted Alert
(59641) <----- (443)
27.481      https > 59641 [FIN,
(59641) <----- (443)
27.489      59641 > https [ACK]
(59641) -----> (443)
27.49       59641 > https [ACK]
(59641) -----> (443)
27.516      59641 > https [ACK]
(59641) -----> (443)
27.526      Encrypted Alert
(59641) -----> (443)
27.532      59641 > https [RST,
(59641) -----> (443)
    
```

En las siguientes figuras se aprecian fotos de las pruebas realizadas con el Servidor Web desde el Smartphone.



Figura 7.1 Usuario Wally accediendo a la web mediante Smartphone



Figura 7.2 Usuario Wally validó su Cuenta y Contraseña e ingreso al menú de dispositivos

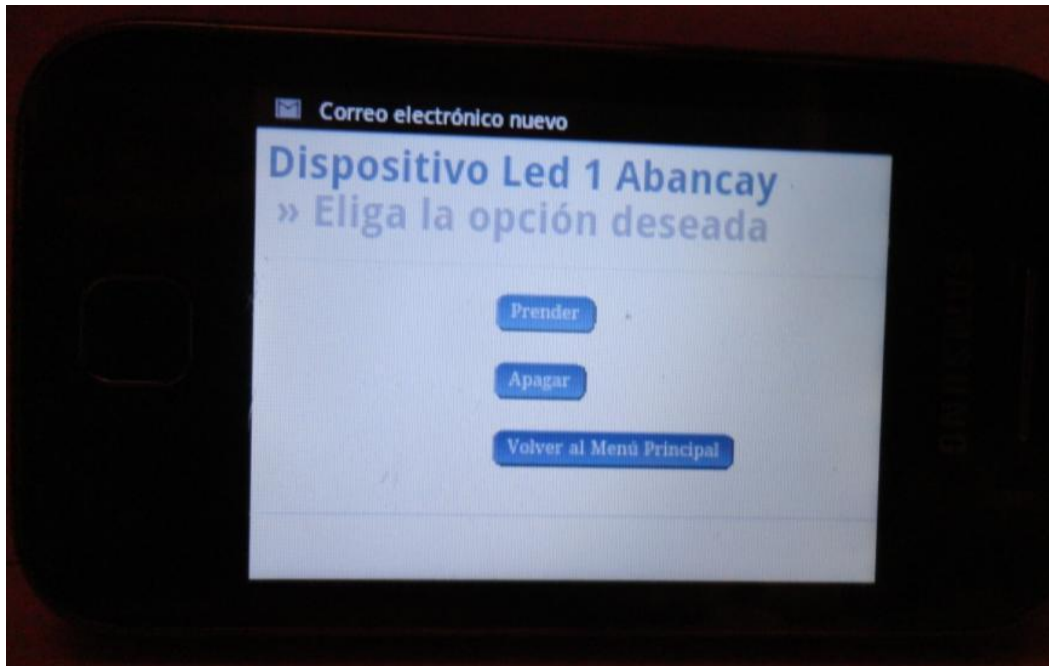


Figura 7.3 Usuario Wally eligió el dispositivo Led 1 Abancay, la imagen muestra las opciones que tiene este dispositivo (Prender, Apagar, y volver al Menú Principal)



Figura 7.4 Usuario Wally eligió el dispositivo Led 1 Abancay, la imagen muestra las opciones que tiene este dispositivo (Prender, Apagar, y volver al Menú Principal)

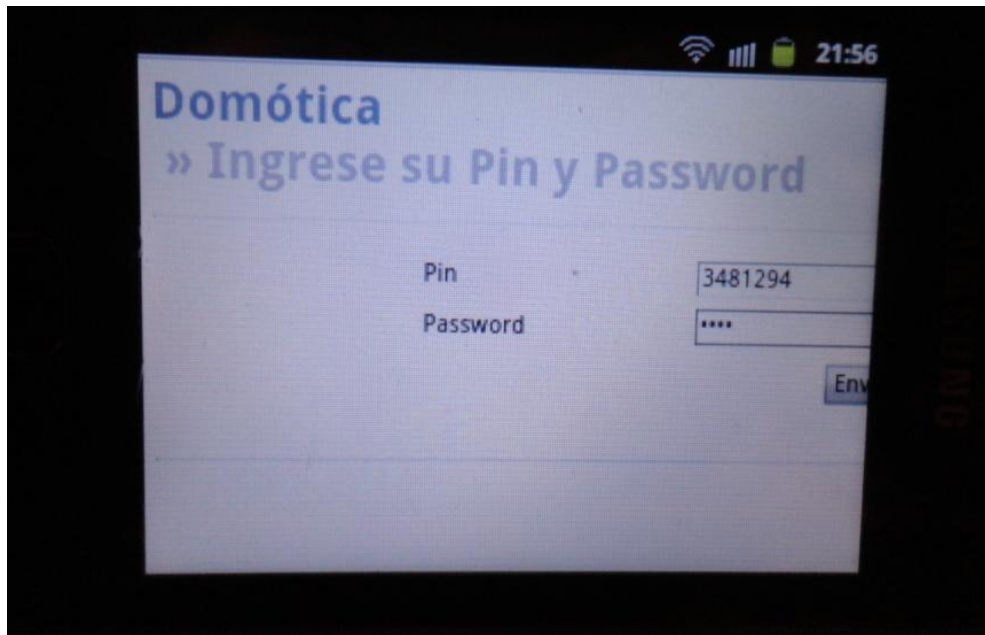


Figura 7.5 Usuario Urpi accediendo a la web mediante Smartphone

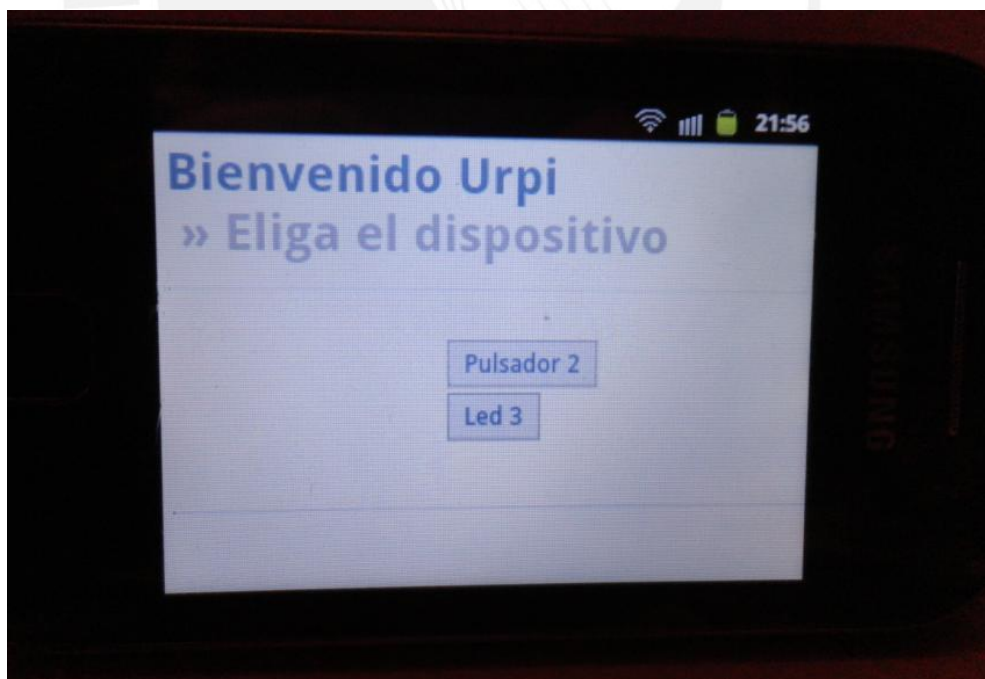


Figura 7.6 Usuario Urpi validó su Cuenta y Contraseña e ingreso al menú de dispositivos

7.3 Pruebas con el Controlador de Equipos usando el protocolo ICMP

```

root@asteriskserver:~
--- 192.168.1.99: icmp_seq=11 ttl=64 time=1.36 ms
64 bytes from 192.168.1.99: icmp_seq=12 ttl=64 time=1.36 ms
64 bytes from 192.168.1.99: icmp_seq=13 ttl=64 time=1.36 ms
64 bytes from 192.168.1.99: icmp_seq=14 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=15 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=16 ttl=64 time=1.34 ms
64 bytes from 192.168.1.99: icmp_seq=17 ttl=64 time=1.36 ms
64 bytes from 192.168.1.99: icmp_seq=18 ttl=64 time=1.35 ms

64 bytes from 192.168.1.99: icmp_seq=19 ttl=64 time=1.34 ms
64 bytes from 192.168.1.99: icmp_seq=20 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=21 ttl=64 time=1.34 ms
64 bytes from 192.168.1.99: icmp_seq=22 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=23 ttl=64 time=1.34 ms
64 bytes from 192.168.1.99: icmp_seq=24 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=25 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=26 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=27 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=28 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=29 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=30 ttl=64 time=1.34 ms
64 bytes from 192.168.1.99: icmp_seq=31 ttl=64 time=1.34 ms
64 bytes from 192.168.1.99: icmp_seq=32 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=33 ttl=64 time=1.36 ms
64 bytes from 192.168.1.99: icmp_seq=34 ttl=64 time=1.36 ms
64 bytes from 192.168.1.99: icmp_seq=35 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=36 ttl=64 time=1.34 ms
64 bytes from 192.168.1.99: icmp_seq=37 ttl=64 time=1.37 ms
64 bytes from 192.168.1.99: icmp_seq=38 ttl=64 time=1.35 ms
64 bytes from 192.168.1.99: icmp_seq=39 ttl=64 time=1.34 ms
64 bytes from 192.168.1.99: icmp_seq=40 ttl=64 time=1.34 ms
64 bytes from 192.168.1.99: icmp_seq=41 ttl=64 time=1.36 ms
64 bytes from 192.168.1.99: icmp_seq=42 ttl=64 time=1.36 ms
64 bytes from 192.168.1.99: icmp_seq=43 ttl=64 time=1.36 ms

--- 192.168.1.99 ping statistics ---
43 packets transmitted, 43 received, 0% packet loss, time 42018ms
rtt min/avg/max/mdev = 1.342/1.356/1.372/0.020 ms
root@asteriskserver ~]#
    
```

Figura 7.7 Tiempo de respuesta del Controlador de Equipos usando el Protocolo ICMP

7.4 Consumo del Procesador del Servidor Doméstico

```

root@asteriskserver:~
Peer      User/ANR      Call ID      Format      Hold      Last M
192.168.1.33  101          1t58w8aoUB0UeD0  0x4 (ulaw)  No       Rx: AC
192.168.1.100 102          MWE2YwIwZmY4YjU  0x4 (ulaw)  Yes      Rx: AC
192.168.1.36  101          MjY3MzkyZWFiZDU  0x4 (ulaw)  No       Rx: ACK
192.168.1.100 102          ODFkMGE2ZDViNDU  0x4 (ulaw)  No       Rx: ACK
192.168.1.100 102          MWU5NjA3MGU5MmV  0x4 (ulaw)  Yes      Rx: ACK
5 active SIP dialogs
-- <SIP/102-00000000> Playing 'beep.gsm' (language 'en')
-- Playing '/var/spool/asterisk//tmp/text2wav_1e8e5d95d49ed96910c784bd8a0b46da' (escape_digits=) (sample_offset 0)
-- <SIP/101-00000000> Playing 'beep.gsm' (language 'en')
-- Playing '/var/spool/asterisk//tmp/text2wav_b092a7389cb4d5d33138f38e223d36f8' (escape_digits=) (sample_offset 0)
-- Playing '/var/spool/asterisk//tmp/text2wav_1e8e5d95d49ed96910c784bd8a0b46da' (escape_digits=) (sample_offset 0)
-- Playing '/var/spool/asterisk//tmp/text2wav_1e8e5d95d49ed96910c784bd8a0b46da' (escape_digits=) (sample_offset 0)

top - 21:36:41 up 39 min, 5 users, load average: 0.41, 0.12, 0.08
Tasks: 210 total, 2 running, 204 sleeping, 4 stopped, 0 zombie
Cpu(s): 34.3%us, 3.6%sy, 0.0%ni, 61.9%id, 0.0%wa, 0.0%hi, 0.2%si, 0.0%st
Mem:  1035096k total,  837552k used,  197544k free,  24396k buffers
Swap: 2048248k total,    0k used,  2048248k free,  567696k cached

  PID USER      PR  NI  VIRT  RES  SHR  S %CPU  %MEM    TIME+  COMMAND
  4098 root        15   0  297m  16m 7140 S 28.2  1.6   0:45.63 Xorg
  4255 root        15   0  82208 20m  13m S  6.0  2.0   0:03.44 nautilus
  4223 root        15   0 14692 5472 2792 S  3.6  0.5   0:01.88 at-spi-registry
  4327 root        15   0  39536 11m 9000 S  3.3  1.2   0:02.16 wnck-applet
  4334 root        15   0  147m  25m  13m R  3.0  2.5   0:14.41 zoiiper
  4829 root        15   0  65428 16m  9m S  3.0  1.6   0:00.59 eog
  4421 root        15   0  57724 17m 10m S  2.3  1.7   0:08.65 gnome-terminal
  3355 asterisk    15   0  47704 17m 9040 S  0.7  1.8   0:01.97 asterisk
  4227 root        15   0  35272 8876 7292 S  0.7  0.9   0:00.39 gnome-settings-
  4249 root        15   0  19576 9.9m 7568 S  0.7  1.0   0:00.84 metacity
  4409 root        15   0  16868 1644 956 S  0.7  0.2   0:00.23 gnome-screensav
  4412 root        15   0  30600 8824 6144 S  0.7  0.9   0:00.28 notification-da
  2254 root        10  -5    0    0  0 S  0.3  0.0   0:00.08 kondemand/0
    
```

Figura 7.8 Consumo de procesador y memoria con 5 llamadas simultáneas