OpenScape 4000

How to Configure SIP Trunk for enviaTEL Germany

Table of Contents

Table of History

Date	Version	Changes
17.11.2021	1.0	Initial Creation

Information

The enviaTEL SIP-Trunk will be released for the first time with OpenScape 4000 V8R2 / V10R0.

OS4K version: V10 R0.28
Certified LW version: A9.035
Certified SBC version: V10 R1.04.02

Release of Profile: A9.109

Certification

Tested Scenarios:

Provider <–> OpenScape 4000
Provider <–> OpenScape SBC <–> OpenScape 4000

Provider Topology: Registered Trunk

Trunk Configuration Data provided by envia-TEL

Trunk Name: enviaTEL enVoice IP-range (bis 2021)

Used platform:
Cirpack MultiNodeB v4.2j17
Cirpack Access-SBC v4.3

Trunk connection: Registered Trunk

Transport Protocol: UDP

Signaling IP: 193.98.115.6 (ngn-pbx.enviatel.net); **Signaling Port**: 5060

Media IP: 193.98.115.240/28; **Media Ports**: 30000 – 38192

Supported Connectivity: SBC with public IP, SBC with private IP behind NAT (static public internet IP is required)

Documentation: Technische Richtlinie IP-Anlagenanschluss

The trunk data will be provided via email similar like this:

Details für die Einrichtung des Telefoniedienstes (SIP)[2]:

Benutzername:	0342[redacted]
Passwort:	[redacted]
Registrar:	ngn-pbx.enviatel.net
Ortskennzahl:	034298

Note:

EnviaTEL planes to release a new platform beginning of 2022, which requires re-certification

OpenScape 4000 Configuration

See Service Documentation OpenScape 4000 – Document: IP Solutions for details.

AMOs (Certification Example)

Note: Certification specific example – for general description see Service-Documentation.

```
M2 1 EINR-BUEND:211,"SIP AMT",30,0,*,1,ON,0,0,NEUTRAL;
M2 1 EINRICHTEN-COP:201,IMEX,FBKW,FBKW;
M2 1 AENDERN-COP:201,COPZU,,,,UNAB,"SIP AMT üBER SBC";
M2 1 EINRICHTEN-
COT:210,MVLT&UELM&SAAO&BLOC&LOKN&OLCR&TSCS&VKNN&NOFT&ANZR&SUPN&NOCI&NOCT
&RMVN&KTON;
M2 1 EINR-COSSU:,300,,,,,,,,;
M2 1 AEND-COSSU:COS,300,FBKW&QVKW&GESP&GEZ&AULEXT&MSN;
M2 1 AEND-COSSU:COS,300,AULERU;
M2 1 AEND-COSSU:COS,300,,FBKW&QVKW&GRUBE&MSN&MULTRA;
M2 1 AEND-COSSU:COS,300,,,FBKW&QVKW&GRUBE&MSN&MULTRA;
M2 1 AENDERN-COT:210,COTZU,,UNAB,"210 - SIP AMT TEST";
M2 2 EINR-TDCSU:NEU,1-90-001-0,210,201,1,0,300,9,9,"
",0,ECMAV2,8,,KEINE,,,,GDTR,N,AMT,KEINE,N,0,,00,0,,,,10,VIELE,1-1-
211,2,1,1,LEER,210,10,N,,,,,,16,8,1,10,2,EC&G711&G729AOPT,,211,AB,J,TRADITIO,0,60,60,HG3550CO
,1&&30,N,1,,0,0,0,0,0,N,1-1-130,KEINE;
M2 1 EINR-RICHT:LRTGNEU,2100,ALLE,"IP NOTRUF      ",211,1-1-
210,NEIN,NEIN,FIX,,,PP300,,,,,JA,JA,,1-1-211,NEUTRAL,NEIN,NEIN,NEIN,NEIN,NEIN,NEIN,NEIN,NEIN;
M2 1 EINR-RICHT:LRTGNEU,2101,ALLE,"IP ORT        ",211&&213,1-1-
211,NEIN,,FIX,,,PP300,,,,,JA,NEIN,,1-1-211,NEUTRAL,NEIN,NEIN,NEIN,NEIN,NEIN,NEIN,NEIN,NEIN;
M2 1 EINR-RICHT:LRTGNEU,2102,ALLE,"IP NATIONAL    ",211&&213,1-1-
211,NEIN,,FIX,,,PP300,,,,,JA,NEIN,,1-1-211,NEUTRAL,NEIN,NEIN,NEIN,NEIN,NEIN,NEIN,NEIN,NEIN;
M2 1 EINR-RICHT:LRTGNEU,2103,ALLE,"IP INTERNAT    ",211&&213,1-1-
213,NEIN,,FIX,,,PP300,,,,,JA,NEIN,,1-1-211,NEUTRAL,NEIN,NEIN,NEIN,NEIN,NEIN,NEIN,NEIN,NEIN;
M2 1 EINRICHTEN-LODR:2100,,,,ECHOFELD,3;
M2 1 EINRICHTEN-LODR:2100,,,,ECHOFELD,4;
M2 1 EINRICHTEN-LODR:2100,,,,NPI,ISDN,UNKNOWN;
M2 1 EINRICHTEN-LODR:2100,,,,ENDE;
M2 1 EINRICHTEN-LODR:2101,,,,ZIFFSEND,034298;
M2 1 EINRICHTEN-LODR:2101,,,,ECHOFELD,3;
M2 1 EINRICHTEN-LODR:2101,,,,ECHOFELD,4;
M2 1 EINRICHTEN-LODR:2101,,,,NPI,ISDN,UNKNOWN;
M2 1 EINRICHTEN-LODR:2101,,,,ENDE;
M2 1 EINRICHTEN-LODR:2102,,,,ZIFFSEND,0;
M2 1 EINRICHTEN-LODR:2102,,,,ECHOFELD,4;
M2 1 EINRICHTEN-LODR:2102,,,,ECHOFELD,5;
M2 1 EINRICHTEN-LODR:2102,,,,NPI,ISDN,UNKNOWN;
M2 1 EINRICHTEN-LODR:2102,,,,ENDE;
M2 1 EINRICHTEN-LODR:2103,,,,ZIFFSEND,00;
M2 1 EINRICHTEN-LODR:2103,,,,ECHOFELD,4;
M2 1 EINRICHTEN-LODR:2103,,,,ECHOFELD,5;
M2 1 EINRICHTEN-LODR:2103,,,,NPI,ISDN,UNKNOWN;
```

```
M2 1 EINRICHTEN-LODR:2103,,,,ENDE;
M2 1 EINRICHTEN-LDAT:2100,ALLE,1,,211,2100,1,,1,LEER,,,4,,,,,,,,,,,;
M2 1 EINRICHTEN-LDAT:2101,ALLE,1,,211,2101,1,,1,LEER,GEBAKT&PUBNUM,,4,,,,,,,,,,,;
M2 1 EINRICHTEN-LDAT:2102,ALLE,1,,211,2102,1,,1,LEER,GEBAKT&PUBNUM,,4,,,,,,,,,,,;
M2 1 EINRICHTEN-LDAT:2103,ALLE,1,,211,2103,1,,1,LEER,GEBAKT&PUBNUM,,4,,,,,,,,,,,;
M2 1 EINR-LPROF:"NOTRUF",1,2100,100;
M2 1 EINR-LPROF:"AMT ORT",1,2101,101;
M2 1 EINR-LPROF:"AMT ISDN NATIONAL",1,2102,102;
M2 1 EINR-LPROF:"AMT ISDN INTERNAT",1,2103,103;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-00-0-Z,0&1,,103,,7,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-00-1-Z,0&1,,103,,7,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-00-2-Z,0&1,,103,,7,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-00-3-Z,0&1,,103,,7,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-00-4-Z,0&1,,103,,7,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-00-5-Z,0&1,,103,,7,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-00-6-Z,0&1,,103,,7,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-00-7-Z,0&1,,103,,7,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-00-8-Z,0&1,,103,,7,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-00-9-Z,0&1,,103,,7,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-0-1-Z,0&1,,102,,4,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-0-2-Z,0&1,,102,,4,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-0-3-Z,0&1,,102,,4,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-0-4-Z,0&1,,102,,4,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-0-5-Z,0&1,,102,,4,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-0-6-Z,0&1,,102,,4,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-0-7-Z,0&1,,102,,4,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-0-8-Z,0&1,,102,,4,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-0-9-Z,0&1,,102,,4,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-1-10,0&1,,100,,1,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-1-12,0&1,,100,,1,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-1-Z,0&1,,101,,2,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-2-Z,0&1,,101,,2,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-3-Z,0&1,,101,,2,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-4-Z,0&1,,101,,2,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-5-Z,0&1,,101,,2,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-6-Z,0&1,,101,,2,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-7-Z,0&1,,101,,2,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-8-Z,0&1,,101,,2,,,,NEIN;
M2 1 EINRICHTEN-LDPLN:LCRMUST,0,0-W-9-Z,0&1,,101,,2,,,,NEIN;
```

Gateway Configuration

SIP Parameter

SIP Parameters

SIP User Agent	"SIP User Agent" settings ignored due to usage of SIP trunk profiles
Use SIP Registrar:	No
SIP Registrar IP Address:	0.0.0.0
SIP Registrar TLS Port Number:	5061
SIP Registrar TCP/UDP Port Number:	5060
Alternative SIP Registrar IP Address:	0.0.0.0
Alternative SIP Registrar TLS Port Number:	5061
Alternative SIP Registrar TCP/UDP Port Number:	5060
Period of Registration (sec):	300
SIP Server (Registrar / Redirect)	
SIP Server IP Address:	172.29.93.180
SIP Server TCP/UDP Port Number:	5060
SIP Server TLS Port Number:	5061
Default Registration Period (sec):	600 (used when no 'Expires' value received)
Range used for Randomized Registration (%):	25 0 means: don´t use Randomization
RFC 3261 Timer Values	
Transaction Timeout (msec):	32000 (Should only be changed for DNS failover scenarios)
SIP Transport Protocol	
SIP via TCP:	Yes
SIP via UDP:	☑
SIP via TLS:	Yes

SIP Session Timer

RFC 4028 Support:	☑
Session Expires (sec):	1800
Minimal SE (sec):	90

DNS-SRV Records / SIP Flooding Defense

Blocking time for unreachable destination/flood defense (sec):	60

Trunking Parameters

SIP OPTIONS ping interval (sec, 0=deactivate):	0

SIP loop call

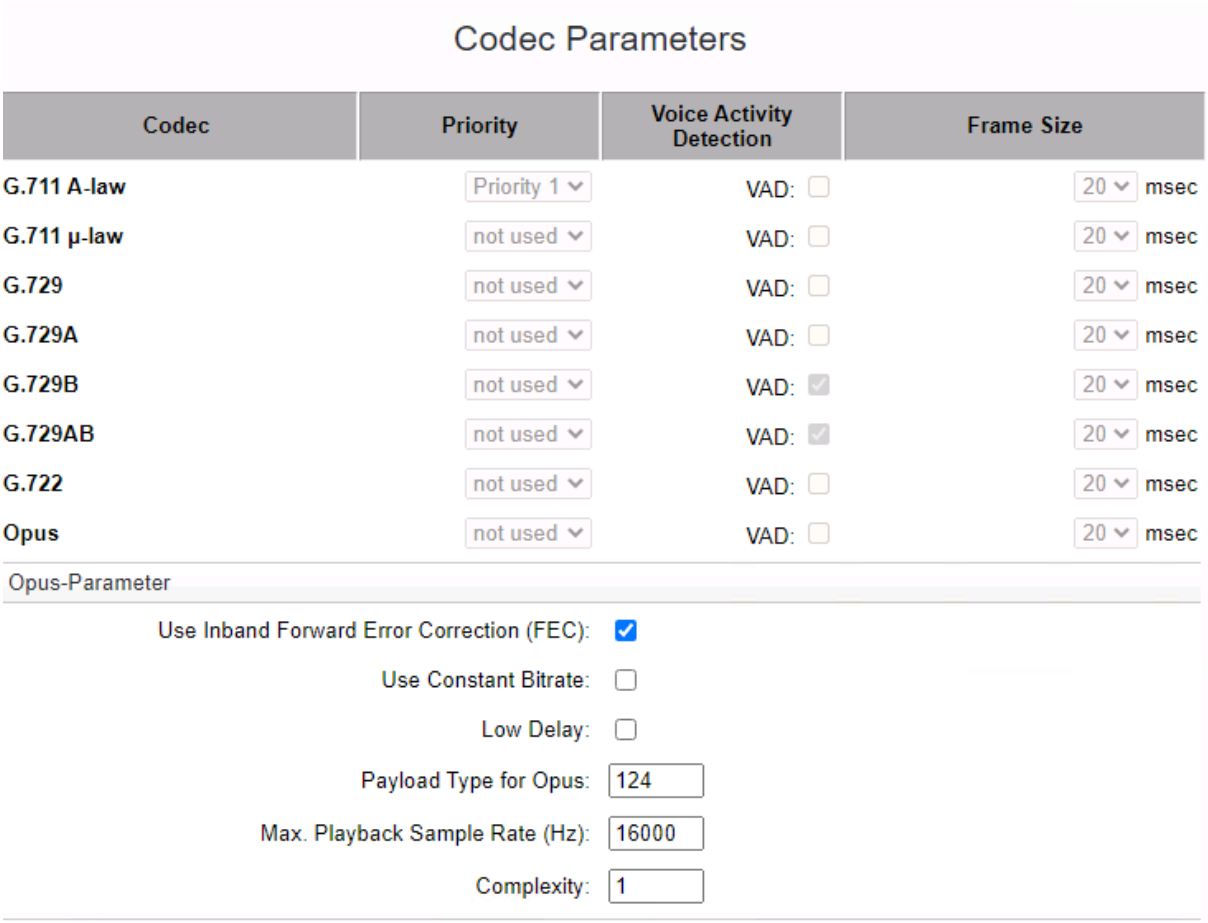
SIP loop call From number:	
SIP loop call To number:	
SIP loop call frequency (sec, 0=deactivate):	0
SIP loop call Out of service threshold:	1

Call Supervision

MakeCallReq Timeout (sec):	3
SIP Connect Timeout (sec):	300

Apply Undo

Codec Parameter



Codec Parameters

Codec	Priority	Voice Activity Detection	Frame Size
G.711 A-law	Priority 1	VAD: ☐	20 msec
G.711 µ-law	not used	VAD: ☐	20 msec
G.729	not used	VAD: ☐	20 msec
G.729A	not used	VAD: ☐	20 msec
G.729B	not used	VAD: ☑	20 msec
G.729AB	not used	VAD: ☑	20 msec
G.722	not used	VAD: ☐	20 msec
Opus	not used	VAD: ☐	20 msec

Opus-Parameter

Use Inband Forward Error Correction (FEC): ☑

Use Constant Bitrate: ☐

Low Delay: ☐

Payload Type for Opus: 124

Max. Playback Sample Rate (Hz): 16000

Complexity: 1

T.38 Fax

T.38 Fax:	☐	
Max. UDP Datagram Size for T.38 Fax (bytes):	375	
Error Correction Used for T.38 Fax (UDP)	t38UDPRedundancy	
Time Range for Immediate Switch to T.38 Fax (s):	0	0 means: No Immediate Switching

Misc.

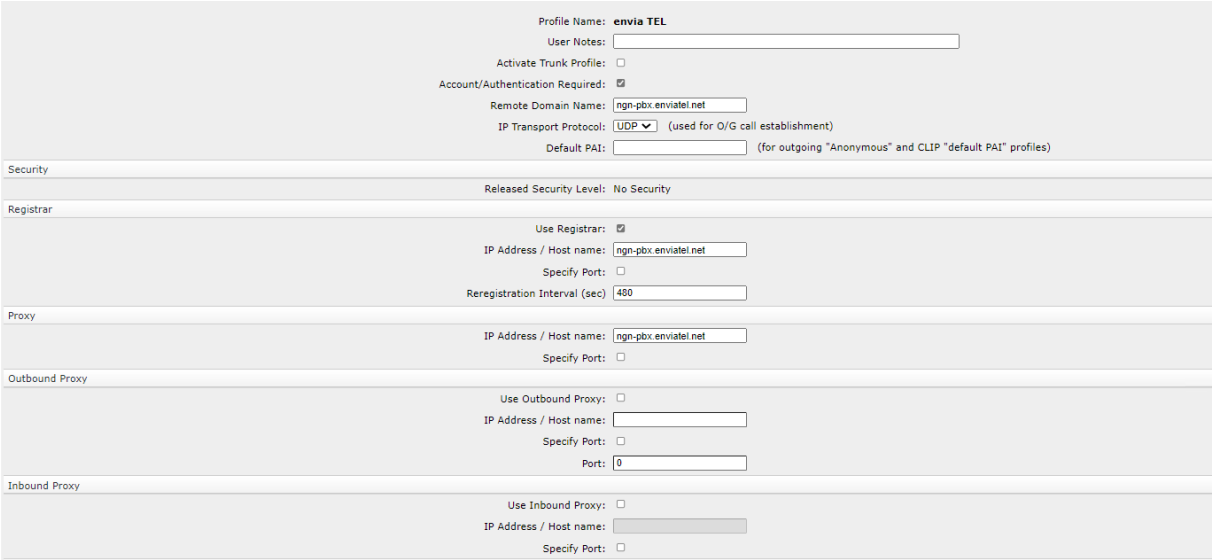
ClearMode (ClearChannelData):	☑	Frame Size:	20 msec

RFC2833

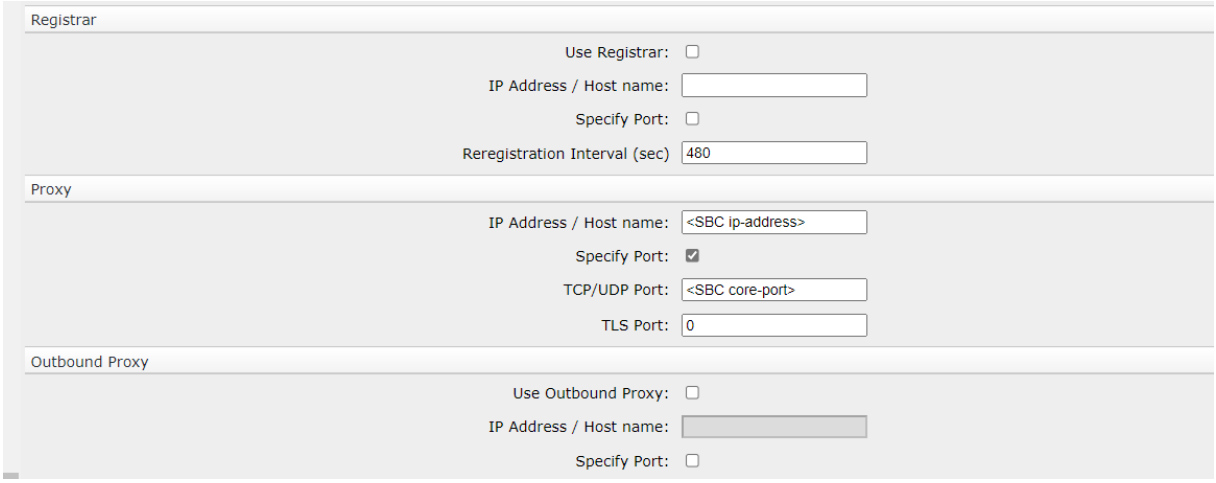
Transmission of Fax/Modem Tones according to RFC2833:	☑	
Transmission of DTMF Tones according to RFC2833:	☑	
Payload Type for ClearChannel:	96	
Payload Type for RFC2833:	100	
Payload Type for RFC2198:	101	(= 'Payload Type for RFC2833' + 1)
Redundant Transmission of RFC2833 Tones according to RFC2198:	☑	
Payload Type for RFC4733 WideBand:	102	(= 'Payload Type for RFC2833' + 2)

Apply Undo

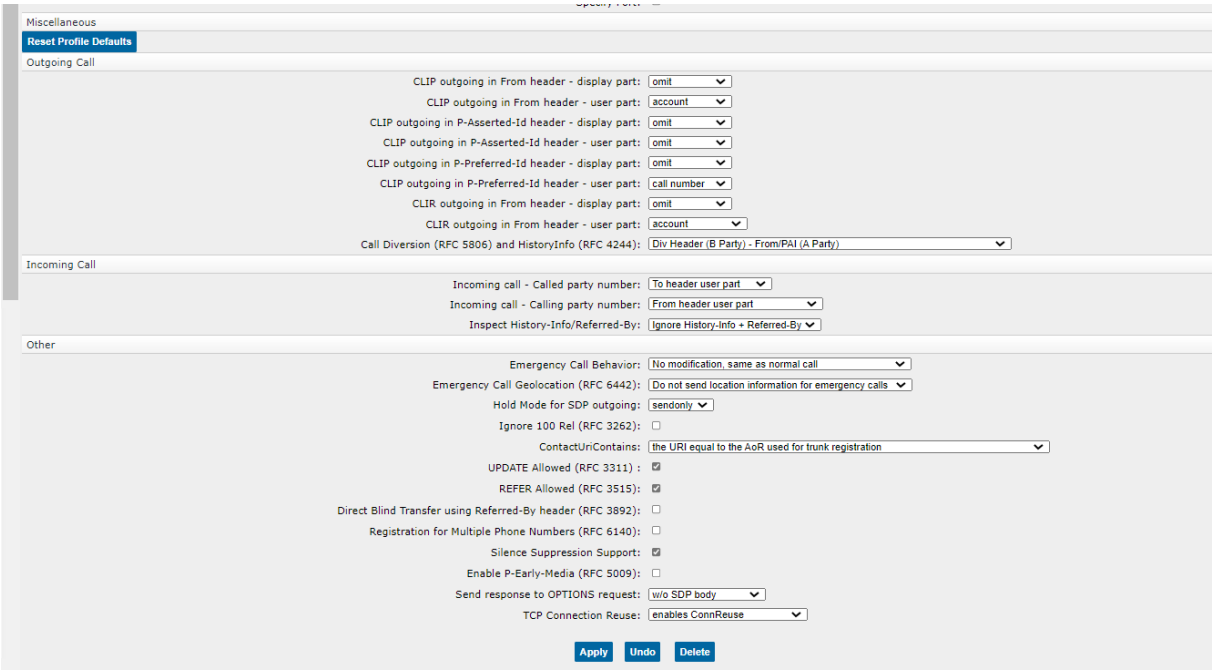
SIP trunking Profile – direct connectivity



SIP trunking Profile – connectivity via OS – SBC

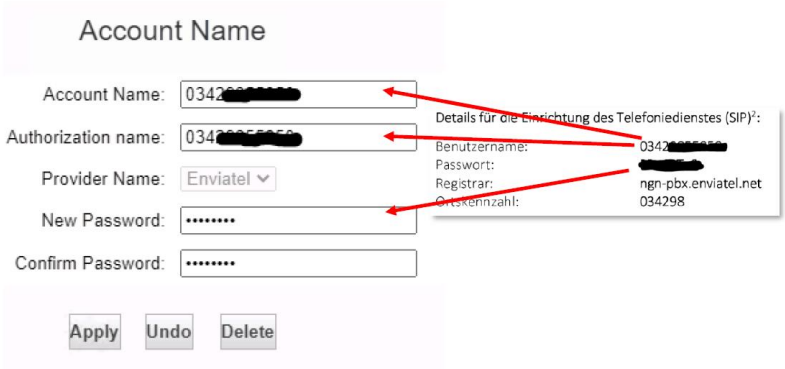


SIP trunking profile – parameter (both deployments):



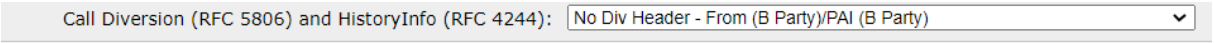
Account-Name

Account Name: Benutzername
Authorization Name: Benutzername
Password: Passwort



CLIPNoScreeing

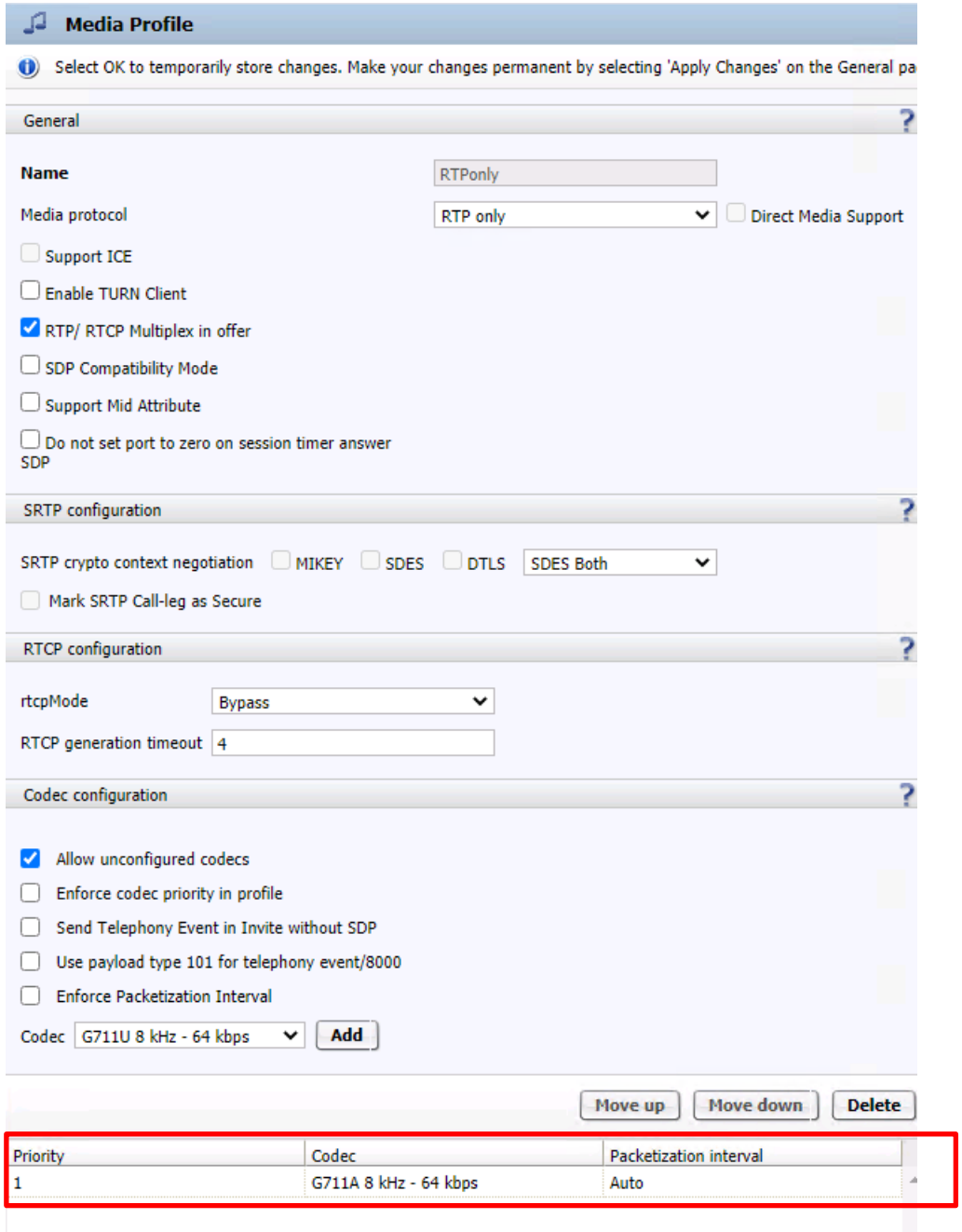
If the customer has not ordered the provider feature “CLIPNoScreening”, then the parameter “Call Diversion“ needs to be changed via WBM GUI to the following value:



OpenScape SBC Configuration

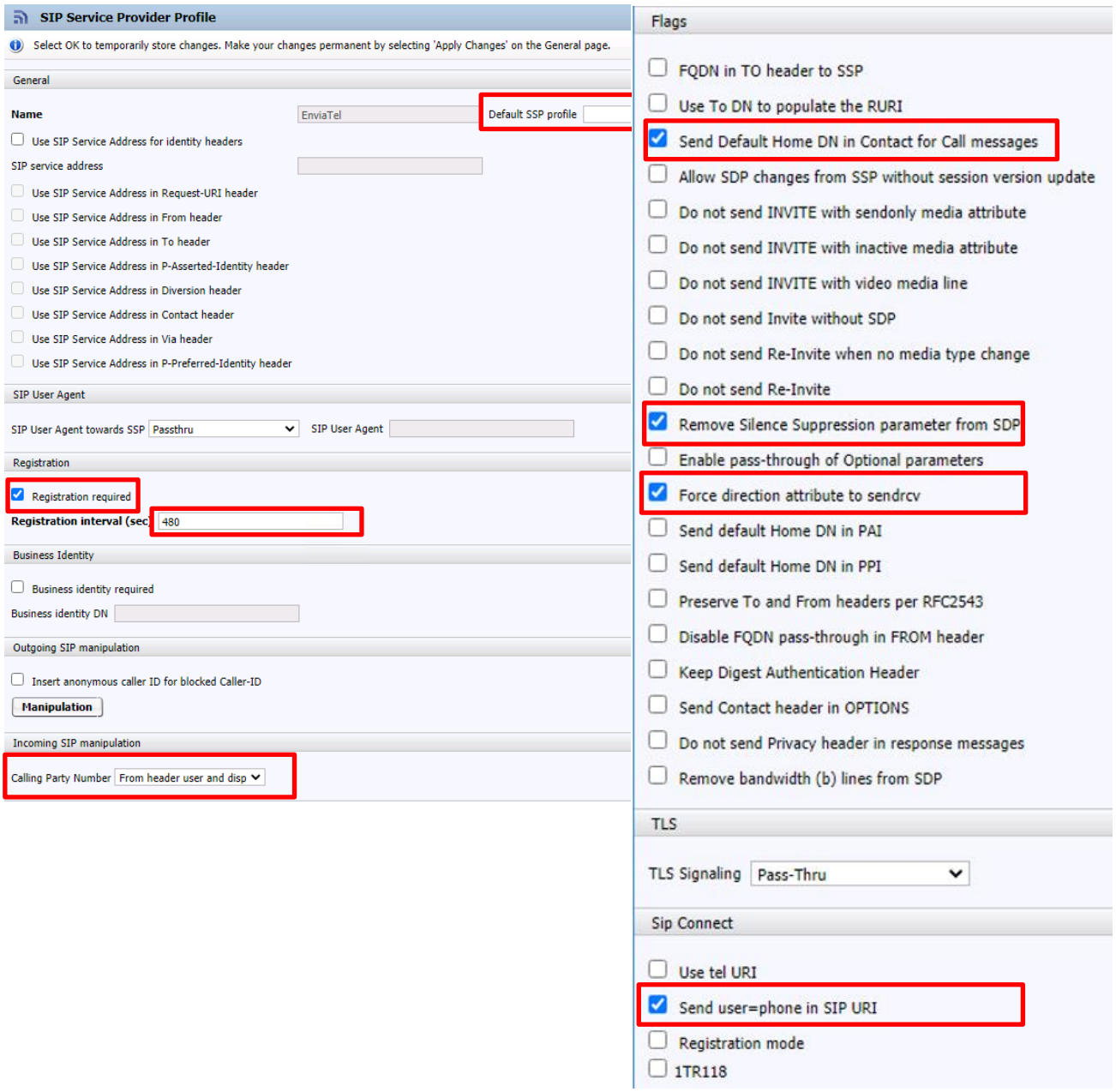
Media Profile

- **Media protocol**: RTP only
- **RTP/ RTCP Multiplex in offer**: enable
- **Codec List**: G.711A



SIP Service Provider Profile

- **Default SSP profile:** empty
- **Registration required:** enable
- **Registration interval (sec)**: 480
- **Incoming SIP manipulation - Calling Party Number:** From header user and display name part
- **Flag - Send Default Home DN in Contact for Call messages:** enable
- **Flag – Remove Silence Suppresion parameter from SDP:** enable
- **Flag – Force direction attribute to sendrcv:** enable
- **Flag – Send user=phone in SIP URI:** enable



Remote Endpoint Configuration

Fill all red marked fields.

Remote endpoint configuration

Select OK to temporarily store changes. Make your changes permanent by selec

Remote Endpoint Settings

Name	TestTrunk1_Taucha (Edit)
Type	SSP
Profile	EnviaTel
Access realm profile	Main-Access-Realm - ipv4
Core realm profile	Main-Core-Realm - ipv4
Associated Endpoint	
Enable Call Limits	
Maximum Permitted Calls	0
Reserved Calls	0

Remote Location Information

- Support Peer Domains
- Support Foreign Peer Domains (White list)
- Enable access control

Signaling address type: IP address or FQDN

Remote Location domain list

Row	Remote URL	Remote port	Remote transport
1	ngn-pbx.enviatel.net	5060	UDP

Remote Location Domain

Select OK to temporarily store changes. Make your changes permanent by s

General

Remote URL	ngn-pbx.enviatel.net (Shared domain)
Remote port	5060
Remote transport	UDP

Signaling

INVITE No Answer timeout (msec)	360000
INVITE No Reply timeout (msec)	3000

TLS

TLS mode	Server authentication
Certificate profile	OSV Solution
TLS keep-alive	
Keep-alive interval (seconds)	120
Keep-Alive timeout (sec)	10

Media Configuration

Media profile	RTPonly
Media realm subnet IP address	

Outbound Proxy Configuration

Outbound Proxy	
Outbound Proxy Port	0

Registrar Server Configuration

Registrar Server	
Registrar Server Port	0

Remote Location Identification/Routing

Core FQDN	
Core realm port	53180
Default core realm location domain name	
Default home DN	034[redacted]
Incoming Routing prefix	(Add) (Delete)

Digest Authentication

- Digest authentication supported

Digest authentication realm	NM1-PBX.enviatel.net
Digest authentication user ID	03[redacted]
Digest authentication password	••••••••

Access Side Firewall Settings

- Enable Firewall Settings (Firewall Settings)

Emergency configuration

Emergency numbers (Add) (Delete)

(Emergency call routing)

Details für die Einrichtung des Telefoniedienstes (SIP)[2]:

Benutzername:	0342[redacted]
Passwort:	[redacted]
Registrar:	ngn-pbx.enviatel.net
Ortskennzahl:	034298

MSRP Data Configuration

- Enable MSRP Relay Support (not licensed)
  - use IP address in MSRP-path
  - use FQDN in MSRP-path — FQDN
  - Authentication required — Realm — Password
  - Access side only — Qop AUTH — Expire time/sec 300

Miscellaneous

- Open external firewall pinhole

Known limitations and restrictions:

- Provider does not analyze the Diversion header. That means the forwarding-to party gets only the number of the caller and not the forwarders number additionally.
- In rarely cases the provider presents a connected number in PAI for outgoing calls. This number is in national format and is shown on the OS4K phone. This number missed the PNAC (0). OS4K is not able to manipulate this number and add the PNAC in front.
  Therefore the Connected Party update must be disabled with the COT Parameter ANZR
- Provider does not support Fax via T.38
- Fax is transparent transmitted via G.711. Fax was not tested in the certification.

Appendix

Supported Numbering Formats

Incoming: Called Party (TO): National prefixed + national number (0…)

Incoming: Calling Party (FROM): International prefixed number (0049…)for international calls
National prefixed number (0…)for national and local calls
Incoming: Account (REQUEST): Trunk Account number (in national format)

Outgoing: Called Party (REQUEST, TO): International prefixed number (0049…)for international calls
National prefixed number (0…)for national and local calls

Outgoing: Calling Party (PPI): National prefixed number (0…)
Outgoing: Account (FROM, Contact): Trunk Account number (in national format)

Outgoing Emergency Call - Called Party (REQUEST, TO): <emergency number>

Outgoing Emergency Call - Calling Party (PPI): National prefixed number (0…)
Outgoing Emergency Call - Account (FROM, Contact): Trunk Account number (in national format)

Outgoing OPTIONs: Provider doesn't support receiving OPTIONs

Incoming OPTIONs: Provider doesn't monitor the trunk via OPTION

Call examples:

International Incoming Call:

```
> User Datagram Protocol, Src Port: 5060, Dst Port: 65060
v Session Initiation Protocol (INVITE)
  > Request-Line: INVITE sip:03429855850@172.18.216.68:65060;transport=udp SIP/2.0
  v Message Header
      Call-ID: 00938-LO-89025488-58821fb04@NM1-PBX.enviatel.net
      [Generated Call-ID: 00938-LO-89025488-58821fb04@NM1-PBX.enviatel.net]
    > Contact: <sip:193.98.115.6:5060>
      Content-Type: application/sdp
    > CSeq: 127295897 INVITE
    > From: "003232070880" <sip:003232070880@NM1-PBX.enviatel.net;user=phone>;tag=00938-NB-89025489-5a0277a75
      Max-Forwards: 58
    > Record-Route: <sip:193.98.115.6:5060;lr>;session=1172
    > To: <sip:034298558510@ngn-pbx.enviatel.net;user=phone>
    > Via: SIP/2.0/UDP 193.98.115.6:5060;branch=z9hG4bK-BAOC-1b354370-7936a4e5
      Allow: ACK,BYE,CANCEL,INFO,INVITE,REFER,REGISTER,UPDATE
      User-Agent: TAUTAS/01 (NBE)
      Content-Length: 246
  v Message Body
    v Session Description Protocol
        Session Description Protocol Version (v): 0
      > Owner/Creator, Session Id (o): anonymous 163540317600 163540317600 IN IP4 193.98.115.6
        Session Name (s): SIP Call
      > Connection Information (c): IN IP4 193.98.115.251
      > Time Description, active time (t): 0 0
      > Media Description, name and address (m): audio 36950 RTP/AVP 8 101
      > Bandwidth Information (b): AS:82
      > Media Attribute (a): rtpmap:8 PCMA/8000/1
      > Media Attribute (a): rtpmap:101 telephone-event/8000
      > Media Attribute (a): fmtp:101 0-15
      > Media Attribute (a): ptime:20
        Media Attribute (a): sendrecv
        [Generated Call-ID: 00938-LO-89025488-58821fb04@NM1-PBX.enviatel.net]
```

National Incoming Call:

```
> User Datagram Protocol, Src Port: 5060, Dst Port: 65060
v Session Initiation Protocol (INVITE)
  > Request-Line: INVITE sip:03429855850@172.18.216.68:65060;transport=udp SIP/2.0
  v Message Header
      Call-ID: 30991-SW-868442fc-68d77ab12@NM1-PBX.enviatel.net
      [Generated Call-ID: 30991-SW-868442fc-68d77ab12@NM1-PBX.enviatel.net]
    > Contact: <sip:193.98.115.6:5060>
      Content-Type: application/sdp
    > CSeq: 85990614 INVITE
    > From: "089700720104" <sip:089700720104@NM1-PBX.enviatel.net;user=phone>;tag=30991-EZ-868442fd-1b0dd2873
      Max-Forwards: 56
    > Record-Route: <sip:193.98.115.6:5060;lr>;session=8037
    > To: <sip:034298558510@ngn-pbx.enviatel.net;user=phone>
    > Via: SIP/2.0/UDP 193.98.115.6:5060;branch=z9hG4bK-LBFN-16d5916b-02af52ea
      Allow: ACK,BYE,CANCEL,INFO,INVITE,REFER,REGISTER,UPDATE
      User-Agent: TAUTAS/01 (NBE)
      Content-Length: 246
  > Message Body
```

National Outgoing Call:

```
> User Datagram Protocol, Src Port: 65060, Dst Port: 5060
v Session Initiation Protocol (INVITE)
  > Request-Line: INVITE sip:089700720104@ngn-pbx.enviatel.net:5060;transport=udp SIP/2.0
  v Message Header
    > Via: SIP/2.0/UDP 172.18.216.68:65060;branch=z9hG4bK00b8.b0301aba8c882e35f89d875f055445ef.0;i=16110
      Max-Forwards: 69
    > Contact: <sip:03429855850@172.18.216.68:65060;transport=udp>
    > To: <sip:089700720104@ngn-pbx.enviatel.net:5060;transport=udp>
    > From: <sip:03429855850@ngn-pbx.enviatel.net:65060;transport=udp>;tag=f718a1fe62
      Call-ID: b3837eb64a91d679
      [Generated Call-ID: b3837eb64a91d679]
    > CSeq: 319523306 INVITE
      Session-Expires: 1800
      Min-SE: 90
      Allow: INVITE, ACK, OPTIONS, BYE, CANCEL, REGISTER, REFER, INFO, PRACK, UPDATE
      Content-Type: application/sdp
    > [truncated]Proxy-Authorization: Digest username="03429855850",realm="NM1-PBX.enviatel.net",nonce="00853
      Supported: 100rel, timer
      User-Agent: OpenScape 4000 -  SoftGate
    > P-Preferred-Identity: <sip:034298558510@172.18.216.68>
      Content-Length: 299
    > X-Siemens-OSS: OpenScape SBC V10 R1.04.02-1
  v Message Body
    v Session Description Protocol
        Session Description Protocol Version (v): 0
      > Owner/Creator, Session Id (o): MxSIP 131114 1741549248 IN IP4 172.29.93.180
        Session Name (s): SIP Call
      > Connection Information (c): IN IP4 172.18.216.68
      > Time Description, active time (t): 0 0
      > Media Description, name and address (m): audio 38940 RTP/AVP 8 100 101 0
      > Media Attribute (a): rtpmap:8 PCMA/8000
      > Media Attribute (a): rtpmap:100 telephone-event/8000
      > Media Attribute (a): fmtp:100 0-15,32-36,49
      > Media Attribute (a): rtpmap:101 red/8000
      > Media Attribute (a): fmtp:101 100
      > Media Attribute (a): rtpmap:0 PCMU/8000
        Media Attribute (a): sendrecv
        Media Attribute (a): rtcp-mux
        [Generated Call-ID: b3837eb64a91d679]
```

Emergency Call:

```
> User Datagram Protocol, Src Port: 65060, Dst Port: 5060
v Session Initiation Protocol (INVITE)
  > Request-Line: INVITE sip:112@ngn-pbx.enviatel.net:5060;transport=udp SIP/2.0
  v Message Header
    > Via: SIP/2.0/UDP 172.18.216.68:65060;branch=z9hG4bK696b.12e7225cc762c0b5df59cd9255011ed3.0;i=8443
      Max-Forwards: 69
    > Contact: <sip:03429855850@172.18.216.68:65060;transport=udp>
    > To: <sip:112@ngn-pbx.enviatel.net:5060;transport=udp>
    > From: <sip:034298558510@ngn-pbx.enviatel.net:65060;transport=udp>;tag=235e5c3ff1
      Call-ID: 34d97cfa9a61b080
      [Generated Call-ID: 34d97cfa9a61b080]
    > CSeq: 708282156 INVITE
      Session-Expires: 1800
      Min-SE: 90
      Allow: INVITE, ACK, OPTIONS, BYE, CANCEL, REGISTER, REFER, INFO, PRACK, UPDATE
      Content-Type: multipart/mixed;boundary=level-0
    >  [truncated]Proxy-Authorization: Digest username="03429855850",realm="NM1-PBX.enviatel.net",nonce="891050670ad4667c74f1
      Supported: 100rel, timer
      User-Agent: OpenScape 4000 -  SoftGate
    > P-Preferred-Identity: <sip:034298558510@172.18.216.68>
      User-to-User: 000000303040f601f2ff4b41524c2d4c4945424b4e4543485420535452 2e20;encoding=hex;purpose=isdn-network;content=
      Geolocation: <cid:10@172.29.93.180>
      Geolocation-Routing: no
      Content-Length: 1076
    > X-Siemens-OSS: OpenScape SBC V10 R1.04.02-1
  > Message Body
```

Registration:

SBC -> Provider (Register)

```
> User Datagram Protocol, Src Port: 65060, Dst Port: 5060
v Session Initiation Protocol (REGISTER)
  > Request-Line: REGISTER sip:ngn-pbx.enviatel.net:5060;transport=udp SIP/2.0
  v Message Header
    > Via: SIP/2.0/UDP 172.18.216.68:65060;branch=z9hG4bK3ddf.906e9b466b67875a7374358f706285e0.0;i=3
      Expires: 480
      User-Agent: SIP alive check
      Call-ID: ff4251c4
      [Generated Call-ID: ff4251c4]
    > From: <sip:03429855853@ngn-pbx.enviatel.net>;tag=fe4f67e
    > CSeq: 1 REGISTER
      Max-Forwards: 70
    > To: <sip:03429855853@ngn-pbx.enviatel.net>
    > Contact: <sip:03429855853@172.18.216.68:65060;transport=udp>;expires=480
      Content-Length: 0
```

Provider -> SBC (401 Unauthorized)

```
> User Datagram Protocol, Src Port: 5060, Dst Port: 65060
v Session Initiation Protocol (401)
  > Status-Line: SIP/2.0 401 Unauthorized
  v Message Header
      Call-ID: ff4251c4
      [Generated Call-ID: ff4251c4]
    > CSeq: 1 REGISTER
    v From: <sip:03429855853@ngn-pbx.enviatel.net>;tag=fe4f67e
      > SIP from address: sip:03429855853@ngn-pbx.enviatel.net
        SIP from tag: fe4f67e
    v To: <sip:03429855853@ngn-pbx.enviatel.net>;tag=00-07812-867e55ae-1ba8aead0
      > SIP to address: sip:03429855853@ngn-pbx.enviatel.net
        SIP to tag: 00-07812-867e55ae-1ba8aead0
    v Via: SIP/2.0/UDP 172.18.216.68:65060;received=172.18.216.68;rport=65060;branc
        Transport: UDP
        Sent-by Address: 172.18.216.68
        Sent-by port: 65060
        Received: 172.18.216.68
        RPort: 65060
        Branch: z9hG4bK3ddf.906e9b466b67875a7374358f706285e0.0
        i=3
    v WWW-Authenticate: Digest realm="NM1-PBX.enviatel.net",nonce="867e536f23fd566c
        Authentication Scheme: Digest
        Realm: "NM1-PBX.enviatel.net"
        Nonce Value: "867e536f23fd566c41b4542336ea24d2"
        Opaque Value: "867dcea12c6d707"
        Stale Flag: false
        Algorithm: MD5
      Server: TAUTAS/01 (NBE)
      Content-Length: 0
```

SBC -> Provider (Register)

```
> User Datagram Protocol, Src Port: 65060, Dst Port: 5060
v Session Initiation Protocol (REGISTER)
  > Request-Line: REGISTER sip:ngn-pbx.enviatel.net:5060;transport=udp SIP/2.0
  v Message Header
    > Via: SIP/2.0/UDP 172.18.216.68:65060;branch=z9hG4bK054d.4f409225d9e426ca5cba16e69ea34bdb.0;i=3
      Expires: 480
      User-Agent: SIP alive check
      Call-ID: 126901b6
      [Generated Call-ID: 126901b6]
    > From: <sip:03429855850@ngn-pbx.enviatel.net>;tag=8772f002
    > CSeq: 2 REGISTER
      Max-Forwards: 70
    > To: <sip:03429855850@ngn-pbx.enviatel.net>
    > Contact: <sip:03429855850@172.18.216.68:65060;transport=udp>;expires=480
      Content-Length: 0
    v [truncated]Authorization: Digest username="03429855850", realm="NM1-PBX.enviatel.net", nonce="8
        Authentication Scheme: Digest
        Username: "03429855850"
        Realm: "NM1-PBX.enviatel.net"
        Nonce Value: "867e536f23fd566c41b4542336ea24d2"
        Authentication URI: "sip:ngn-pbx.enviatel.net:5060;transport=udp"
        Digest Authentication Response: "793ebe7a11c7266cc9150924e5818de1"
        Algorithm: MD5
        Opaque Value: "867dcea12c6d707"
```

Provider -> SBC (OK)

```
> User Datagram Protocol, Src Port: 5060, Dst Port: 65060
v Session Initiation Protocol (200)
  > Status-Line: SIP/2.0 200 OK
  v Message Header
      Call-ID: ff4251c4
      [Generated Call-ID: ff4251c4]
    v Contact: <sip:03429855853@172.18.216.68:65060>;expires=480
      > Contact URI: sip:03429855853@172.18.216.68:65060
        Contact parameter: expires=480
    > CSeq: 2 REGISTER
    v From: <sip:03429855853@ngn-pbx.enviatel.net>;tag=3a0536f9
      > SIP from address: sip:03429855853@ngn-pbx.enviatel.net
        SIP from tag: 3a0536f9
    v To: <sip:03429855853@ngn-pbx.enviatel.net>;tag=00-07560-867e565e-0cb7b6dc1
      > SIP to address: sip:03429855853@ngn-pbx.enviatel.net
        SIP to tag: 00-07560-867e565e-0cb7b6dc1
    v Via: SIP/2.0/UDP 172.18.216.68:65060;received=172.18.216.68;rport=65060;bran
        Transport: UDP
        Sent-by Address: 172.18.216.68
        Sent-by port: 65060
        Received: 172.18.216.68
        RPort: 65060
        Branch: z9hG4bK0ddf.a2adeef57fb1058d2dafd4fd301f6be5.0
        i=3
      Server: TAUTAS/01 (NBE)
      Content-Length: 0
```