Cisco Call Manager Express – CME – tech note /

Supported features

- Inbound calling. Type SIP REGISTERED TRUNK
- Outbound Calling
- Secure Calling via SIP Encrypt platform available

Cisco Platforms ratified:

- Cisco 2800, 3800
- Cisco 2900, 3900
- Cisco UC500 CLI configuration
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Step one: Configure VoIP.co.uk portal for inbound calling type: SIP REGISTERED TRUNK

Create a SIP account for the Cisco router. A SIP Account is a username / password pair which a SIP phone / endpoint uses to authenticate itself.

1. On the my.voip.co.uk portal, click on SIP-AOR and create a SIP account for the Cisco router. Give the SIP account a meaningful name – like “My Cisco PBX”. Also make sure the password is complex.
2. Click on dashboard and then “Incoming targets”. Create a New Incoming Target; TYPE: SIP_REGISTERED TRUNK and again call the incoming target something meaningful – “such as Route calls to my Cisco gateway”. It is recommended that the alphanumeric characters “AAA” are pre-pended to an incoming call to facilitate call routing on the PBX. The Registered Trunk should contain the user template: “AAA${e164}”
3. Click on the new incoming target and add in the new SIP account you just created.
4. Click on Dashboard / Phone numbers and configure a telephone number to route calls to your new incoming target.

Step 2 – Configure router with Basic SIP settings

```
!
sip-ua
authentication username <SIP username created in Step 1> password <SIP password in step 1>
credentials username <SIP username created in Step 1> password <SIP password in step 1>
realm proxy.voip.co.uk
retry invite 2
registrar dns:proxy.voip.co.uk expires 120
sip-server dns:proxy.voip.co.uk
!
!
voice class codec 1
codec preference 2 g711ulaw
!
voice service voip
allow-connections sip to sip
no supplementary-service sip moved-temporarily
no supplementary-service sip refer
ip address trusted list  !! Toll Fraud feature IOS 15+
ipv4 193.203.210.0 255.255.254.0
!
```

Step 3 – Outbound calls

Make an outgoing dial-plan so that calls get routed to the provider you wish. The is achieved with outgoing dial-peers

Most Cisco examples us a “9″ prefix to route calls externally. You need to remove this 9 with a translation rule before you send the call to us.

Advanced dial-plans will make use of multiple outbound dial-peers which fit certain destinations, but you can do this with two:

```
voice translation-rule 350
 rule 1 /^999$/ /999/
 rule 5 /^9\(.+\)/ /\1/

voice translation-profile strip9
 translate called 350
```

dial-peer voice 1 voip

```
 description “Outbound 11 digit numbers starting with zero”
 destination-pattern ^90[1-9]……
 translation-profile outgoing strip9
 voice-class codec 1
 session protocol sipv2
 session target sip-server
 dtmf-relay rtp-nte
 no vad
!
dial-peer voice 2 voip
 description “Outbound other numbers”
 destination-pattern ^9…T
 translation-profile outgoing strip9
 voice-class codec 1
 session protocol sipv2
 session target sip-server
 dtmf-relay rtp-nte
 no vad
!
```

Step 4 – Inbound calls

You need to create a series of inbound dial-peers to match the numbers allocated on your account. For larger blocks, split the range into sub-blocks of 10

Example and remembering that calls will be prefixed with AAA - for the DDI Block AAA441869222500 – AAA441869222509 we have:

```
dial-peer voice 999 voip
description incoming calls from voip Block A”
voice-class codec 1
session protocol sipv2
session target sip-server
incoming called-number ^AAA44186922250.
translation-profile incoming RouteMeBlockA
dtmf-relay rtp-nte
no vad
voice translation-rule 550
 rule 1 /^AAA441869222500/ /200/
 rule 2 /^AAA441869222501/ /201/
 rule 3 /^AAA441869222502/ /202/
 rule 4 /^AAA441869222503/ /203/
 rule 5 /^AAA441869222504/ /204/
 rule 6 /^AAA441869222505/ /205/
 rule 7 /^AAA441869222506/ /206/
 rule 8 /^AAA441869222507/ /207/
 rule 9 /^AAA441869222508/ /208/
 rule 10 /^AAA441869222509/ /209/
```

```
voice translation-rule 501
 rule 1 /^\(.*\)/ /9\1/
!
voice translation-profile RouteMeBlockA
 translate called 550
 translate calling 501
!pops a 9 on the front of the callers number
```