

Microsoft Lync and MyNetFone SIP Trunk Service Authentication

The MyNetFone SIP Trunk service for Microsoft Lync is slightly different from other SIP Trunk services, in that it does not authenticate users with the standard username/password method (otherwise known as a Registration-based authentication), or the standard number format.

Instead, the MyNetFone SIP Trunk service for Microsoft Lync conducts authentication based on the following information:

1. Public IP Address of the internet connection that the SIP Trunk service/Microsoft Lync is using
2. MyNetFone DID that is being sent from Microsoft Lync (+E164 number format must be used)
3. Correct formatting of various fields within the SIP Packets being sent from Microsoft Lync

The illustration below shows an “INVITE” SIP Packet that has been sent from Microsoft Lync. This particular outgoing call attempt will successfully authenticate with MyNetFone.

This information was retrieved from a packet capture using the Protocol Analysis tool “Wireshark”. The important fields have been outline in Red. These are required for successful authentication (as well as other various call-related behaviours and call setup):

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Session Initiation Protocol
Request-Line: INVITE sip:+61400123456@sip30.mynetfone.com.au;user=phone SIP/2.0
Message Header
FROM: "MyNetFone Lync "<sip:+61280088000@125.213.170.253;user=phone>; epid=42661A4F2E; tag=37ab135552
TO: <sip:+61400123456@sip30.mynetfone.com.au;user=phone>
CSEQ: 6503 INVITE
CALL-ID: 82f03fc9-7be2-4c1c-abaf-0963b5573c39
Max-Forwards: 70
VIA: SIP/2.0/TCP 125.213.170.253; 31617; branch=z9hg4bk23a3c2b1
CONTACT: <sip:125.213.170.253:5060;transport=Tcp;addr=125.213.170.253>; ms-opaque=ee3c67039c61a49f>
CONTENT-LENGTH: 345
SUPPORTED: 100rel
USER-AGENT: RTCC/4.0.0.0 MediationServer
CONTENT-TYPE: application/sdp
ALLOW: ACK
Allow: CANCEL,BYE,INVITE,PRACK,UPDATE
Message Body
Session Description Protocol
Session Description Protocol Version (v): 0
Owner/Creator, Session Id (o): - 85 1 IN IP4 125.213.170.253
Session Name (s): session
Connection Information (c): IN IP4 125.213.170.253
Bandwidth Information (b): CT:1000
Time Description, active time (t): 0 0
Media Description, name and address (m): audio 53354 RTP/AVP 97 101 13 0 8
Connection Information (c): IN IP4 125.213.170.253
Media Attribute (a): rtcp:53355
Media Attribute (a): label:Audio
Media Attribute (a): sendrecv
Media Attribute (a): rtpmap:97 RED/8000
Media Attribute (a): rtpmap:101 telephone-event/8000
Media Attribute (a): fmtp:101 0-16
Media Attribute (a): rtpmap:13 CN/8000
Media Attribute (a): rtpmap:0 PCMU/8000
Media Attribute (a): rtpmap:8 PCMA/8000
Media Attribute (a):ptime:20
  
```

Further information for each of the outlined fields is provided on the next page.

FROM: "MyNetFone Lync"<sip:+61280088000@125.213.170.253;

In the FROM field, "+61280088000" is one of the MyNetFone DIDs that have been assigned to your account as part of the MyNetFone SIP Trunking service for Lync. We expect this DID number to be formatted in the +E164 format.

"125.213.170.253" is the Public IP address of your internet connection. This section of the field must display the Public IP Address of the internet connection that your Microsoft Lync is using, and not an Internal LAN IP Address.

TO: <sip:+61400123456@sip30.mynetfone.com.au

In the TO field, "+61400123456" is the number that has been dialled from your PBX. We expect this DID number to be formatted in the +E164 format.

"sip30.mynetfone.com.au" is the Proxy Server for the MyNetFone Microsoft Lync SIP Trunk Service. All outgoing calls must be sent to this proxy. The IP address can be used instead of hostname if desired. The format of [DID]@[Proxy Server] must be used.

VIA: SIP/2.0/TCP 125.213.170.253

In the VIA field, "125.213.170.253" is the Public IP address of your Internet Connection. This section of the field must display the Public IP Address of the internet connection that your Microsoft Lync is using, and not an Internal LAN IP Address.

CONTACT:

<sip:125.213.170.253:5060;transport=Tcp;maddr=123.213.170.253

In the CONTACT field, "125.213.170.253" is the Public IP address of your internet connection. This section of the field must display the Public IP Address of the internet connection that your Microsoft Lync is using, and not an Internal LAN IP Address.

Session Description Protocol

In this portion of the SIP Packet, you will notice the following 3 fields are highlighted: the "Owner/Creator" field and two "Connection Information" fields.

All of these fields must display the Public IP Address of the internet connection that your Microsoft Lync is using, and not an Internal LAN IP Address.

Please Note: It may not be possible to edit all the above fields within the Microsoft Lync PBX itself.

Some of the IP Addresses in the above fields may need to be modified on your Router.

Some Routers may be flexible enough to allow modification of Nat Parameters or "SIP ALG" behaviour, but some routers may not.

An example of this would be the IP Address in the "CONTACT" or the "Session Description Protocol" field/s.

With the LAN IP address being used in the “CONTACT” or “Session Description Protocol” field/s, MyNetFone may send some SIP Packets and/or RTP Traffic to the LAN IP Address (instead of the Public IP Address of your internet connection).

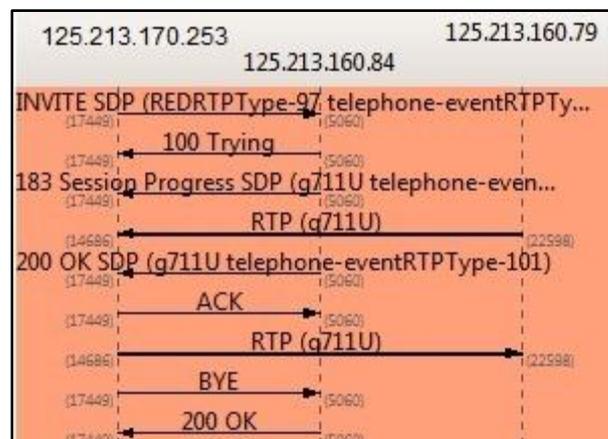
Examples of possible issues caused by such a scenario include (but are not limited to):

- Outgoing Calls being rejected during the call setup phase
- Incoming Call failure or abnormal behaviour
- SIP and/or RTP Traffic being sent to the wrong destination

Below is an overview of a successful outbound call from the Protocol Analysis tool “Wireshark”. The network traffic of the outbound call was captured and Wireshark was used for analysis.

A breakdown of the outbound call is below:

1. The “**INVITE SDP**” Packet is sent from the Microsoft Lync PBX to MyNetFone. This is to request that an outgoing call be made.
2. The “**100 Trying**” Packet is sent from MyNetFone to the Microsoft Lync PBX. This is to inform the PBX that the call attempt is being processed.
3. The “**183 Session Progress SDP**” Packet is sent from MyNetFone to the Microsoft Lync PBX. This is to inform the PBX that the call is now being routed to the relevant destination.
4. An **RTP** Stream is opened from MyNetFone to the Microsoft Lync PBX. This is to pass on any audio that is sent from carrier of the relevant destination. This may include Ring-Back Tones, Error messages, etc.
5. The “**200 OK SDP**” Packet is sent from MyNetFone to the Microsoft Lync PBX. This is to inform the PBX that the call has been answered by the relevant destination.
6. The “**ACK**” Packet is sent from the Microsoft Lync PBX to MyNetFone. This is to inform MyNetFone that the PBX has successfully received the previous “200 OK SDP” Packet.
7. An **RTP** Stream is opened from the Microsoft Lync PBX to MyNetFone. As the call has now been answered by the relevant destination, the PBX must now send the audio to MyNetFone to initial 2-Way communication.
8. The “**BYE**” Packet is sent from the Microsoft Lync PBX to MyNetFone. This is to inform MyNetFone that the PBX has chosen to disconnect the call.
9. The “**200 OK**” Packet is sent from MyNetFone to the Microsoft Lync PBX. This is to inform the PBX that MyNetFone has successfully received the previous “BYE” Packet, and that the call will now be disconnected.



Depending on the abilities and/or features of your Router or Gateway device, it may not be possible to view SIP Packets as they are being sent to MyNetFone. Modification of SIP Packets may occur as they pass through your Router or Gateway device, which would result in different data being displayed from the LAN-Side compared to the WAN-Side.

In this case, MyNetFone is able to capture the SIP and RTP Traffic that is sent/received to and from your Public IP Address for troubleshooting purposes.

For further technical assistance, please contact MyNetFone Business Support on 1300 887 899.

Alternatively, you can send a request for technical assistance to business-support@mynetfone.com.au.