Ribbon SBC Core Interop with Utimaco LIMS for IMS LI : Interoperability Guide

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Document Overview

This document provides a configuration guide for the Ribbon Solution SBC with UTIMACO IMS LI.

- For additional information on Ribbon SBC, refer to https://ribboncommunications.com/

Scope

This document provides the Ribbon Solution SBC Core configuration for performing IMS LI (Lawful Intercept) with Utimaco . This is a general reference document that requires user input during the configuration. For SBC configurations, the screen captures in this document are limited to only the necessary provisioning areas.

Non-Goals

This document does not provide the test case details. success criteria, processes and execution steps of testing that were performed. Also, this document does not focus on general EMA/PSX configurations and provisioning areas.

Introduction

Lawful Intercept (LI) flavor IMS Interop testing is performed between Ribbon's Solution SBC and Utimaco LIMS platform. This document outlines the SBC configurations required to achieve this purpose.

Audience

This is a technical document intended for telecommunications engineers with the purpose of configuring the Ribbon SBC.

To perform this interop, you need

- to use the Ribbon graphical user interface (GUI) or command line interface (CLI)
- to understand the basic concepts of TCP/UDP/TLS and IP/Routing.
- to have access to SIP/RTP/SRTP to complete the configuration and for troubleshooting.

> (i) **Note**
> This configuration guide is offered as a convenience to Ribbon customers. The specifications and information regarding the product in this guide are subject to change without notice. All statements, information, and recommendations in this guide are believed to be accurate but are presented without warranty of any kind, express or implied, and are provided "AS IS". Users must take full responsibility for the application of the specifications and information in this guide.

Product and Device Details

The configuration uses the following equipment and software:

Table 1: Requirements

Product	Equipment/ Devices	Software/ Firmware Version
Ribbon Communications	Ribbon SBC	V10.01.00-R000
Utimaco IMS LI	N/A	N/A

Network Topology Diagram

Deployment Topology

Figure 1: High-Level Architecture For Ribbon - Utimaco LIMS
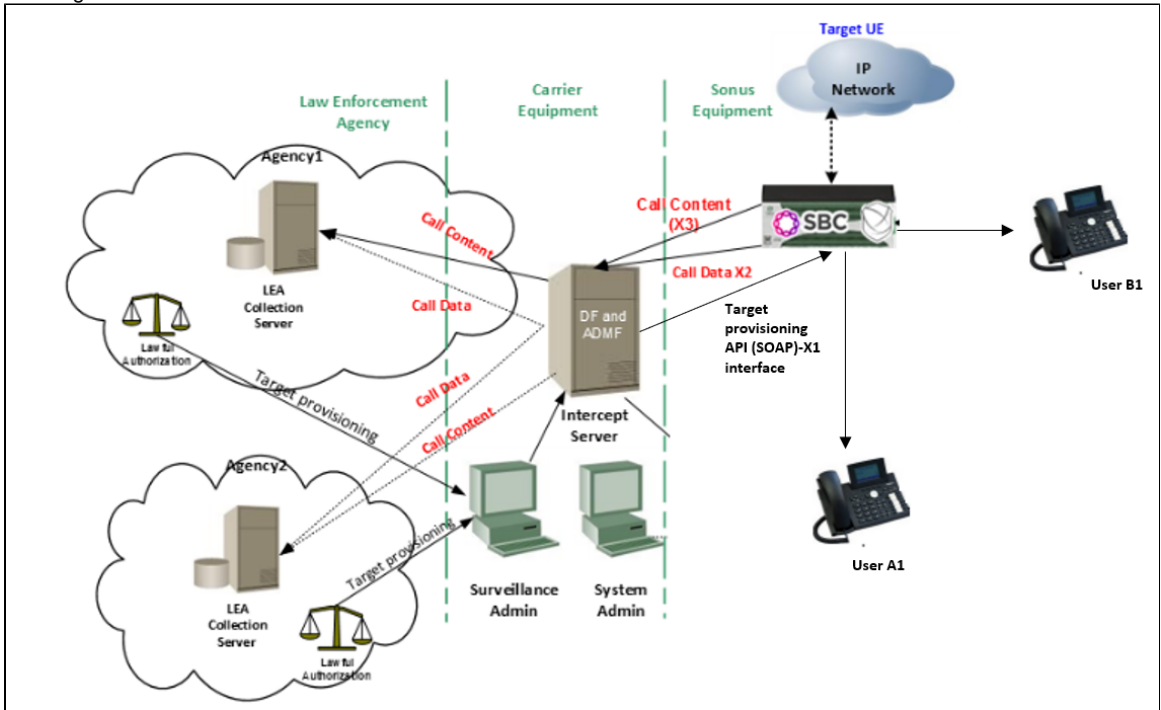
IOT Lab Topology

Figure 2: IOT Lab Topology For Ribbon -Utimaco LIMS
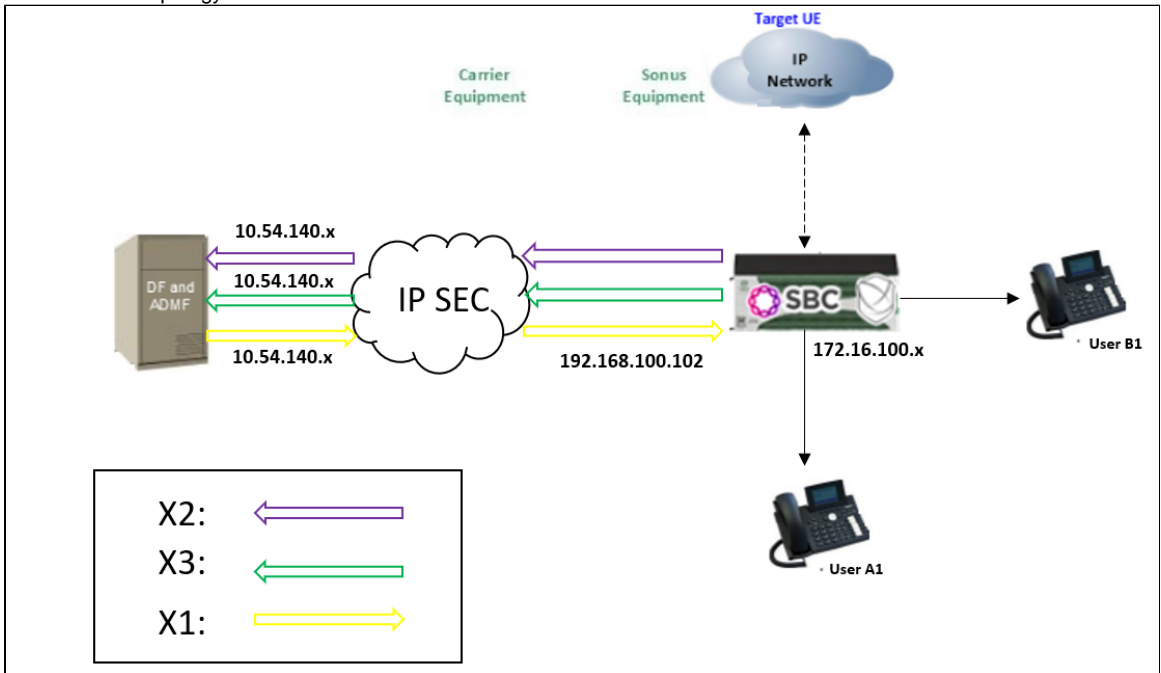
Signaling and Media Flow

Figure 3: IOT call flow For Ribbon -Utimaco LIMS
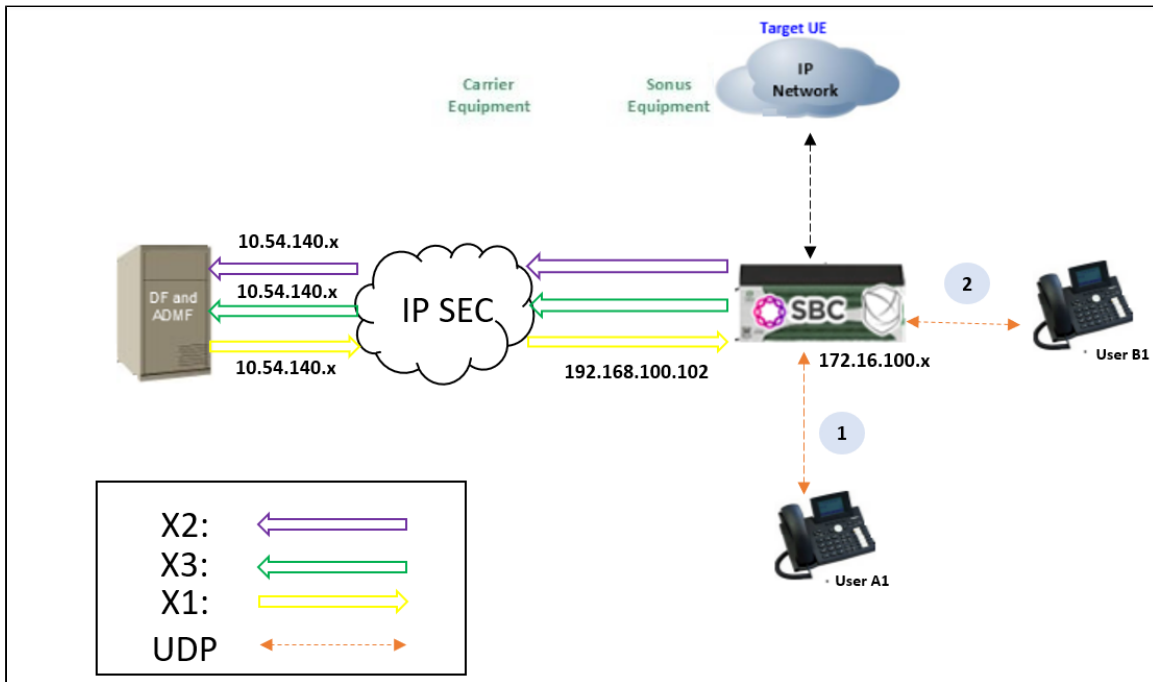
SBC Configuration

> ⚠️ This section provides the SBC configurations specific to LI only.
>
> It does not cover any configurations like ipInterfaceGroup/zone/sipSigPort/sipTrunkGroup/staticRoute etc.
>
> For all of the above configurations, please refer to the Ribbon SBC configuration guide on https://doc.rbbn.com/display/SBXDOC100/SBC+Core+10.0.x+Documentation.

Enable the Calea user

Through the admin login, create the calea user. You must change the password after the first login.

```
set oam localAuth user calea group Calea
commit
############## following output, change the calea passwrod after 1st login ssh calea@0
#admin@NATTEAMS1%
#Message from calea at 2022-03-11 16:33:17...
#password for user calea is Yh6;v27A
#EOF
```

Call Data Channel

Create the Call Data Channel based on the configurations provided by Utimaco LIMS. These are the LIMS IP's for the x2/x3 reception.

In the following example,

- x2 data is sent to the IP 192.168.100.x and port number 27551 over tcp
- x3 data is sent to the IP 192.168.100.x and port number 37552 over udp

```
set addressContext default intercept callDataChannel IMSLI ipInterfaceGroupName UNTRUST mediaIpInterfaceGroupName
UNTRUST
set addressContext default intercept callDataChannel IMSLI interceptStandard threeGpp vendorId utimaco
mediaIpInterfaceGroupName UNTRUST
set addressContext default intercept callDataChannel IMSLI mediationServer IMSLI
set addressContext default intercept callDataChannel IMSLI mediationServer IMSLI signaling ipAddress 192.168.100.x
portNumber 27551 protocolType tcp
set addressContext default intercept callDataChannel IMSLI mediationServer IMSLI media udp ipAddress 192.168.100.x
portNumber 37552
set addressContext default intercept callDataChannel IMSLI dsrProtocolVersion 1
set addressContext default intercept callDataChannel IMSLI mediationServer IMSLI signaling state enabled mode
inService
set addressContext default intercept callDataChannel IMSLI mediationServer IMSLI media udp state enabled mode
inService
commit
```

Target creation example

The following example shows the targets created on the SBC.

Figure 4: Created targets

Lawful Intecept Target Test Application

Server

Server: localhost   Port: 80   Username: calea   Password: •••••

LI Target Data

Target CriteriaType   DirectoryNo
Target Criteria Id
Interception Type   Pen_and_Trap
Forwarded Call Intercept   True
Ingress Callto Wireless Sub True
Enabled   True
Tap ID

[Create Target] [Delete Target] [Update Target] [Retrieve Target] [List Targets]

Results

Criteria Type	Criterai Id	Forwarded Call Intercept	Enabled	Tap ID
DirectoryNo	1\ 6664446100	True	True	null
DirectoryNo	49\6664446100	False	True	5
SIP_URI	4443335100@	True	True	14

SOAP Commands

To create, delete and list targets, use the following SOAP commands:

Target Creation

```
<?xml version="1.0" encoding="utf-8"?><soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"><soapenv:
Header><USER soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next" soapenv:mustUnderstand="0" xsi:type="
soapenc:string" xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/">calea</USER><PASSWORD soapenv:actor="
http://schemas.xmlsoap.org/soap/actor/next" soapenv:mustUnderstand="0" xsi:type="soapenc:string" xmlns:soapenc="
http://schemas.xmlsoap.org/soap/encoding/">Sonus@123</PASSWORD></soapenv:Header><soapenv:Body><ns1:
createLawfulInterceptTarget soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/" xmlns:ns1="
http://www.sonusnet.com/ems/LawfulInterceptTargetService"><lawfulInterceptTarget href="#id0"/></ns1:
createLawfulInterceptTarget><multiRef id="id0" soapenc:root="0" soapenv:encodingStyle="http://schemas.xmlsoap.org
/soap/encoding/" xsi:type="ns2:LawfulInterceptTarget" xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:ns2="http://www.sonusnet.com/ems/lawfulintercept/model"><interceptCriteriaType href="#id1"
/><interceptCriteriaId xsi:type="xsd:string">1\8887770001</interceptCriteriaId><interceptionType xsi:type="ns2:
interceptionTypeEnum" xsi:nil="true"/><forwardedCallIntercept href="#id2"/><ingressCalltoWirelessSub xsi:type="ns2:
ingressCalltoWirelessSubEnum" xsi:nil="true"/><enabled href="#id3"/><tapId href="#id4"/></multiRef><multiRef id="
id1" soapenc:root="0" soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/" xsi:type="ns3:
interceptCriteriaTypeEnum" xmlns:ns3="http://www.sonusnet.com/ems/lawfulintercept/model" xmlns:soapenc="
http://schemas.xmlsoap.org/soap/encoding/">DirectoryNo</multiRef><multiRef id="id4" soapenc:root="0" soapenv:
encodingStyle="http://schemas.xmlsoap.org/soap/encoding/" xsi:type="xsd:int" xmlns:soapenc="http://schemas.xmlsoap.
org/soap/encoding/">5555</multiRef><multiRef id="id3" soapenc:root="0" soapenv:encodingStyle="http://schemas.
xmlsoap.org/soap/encoding/" xsi:type="ns4:enabledEnum" xmlns:ns4="http://www.sonusnet.com/ems/lawfulintercept
/model" xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/">True</multiRef><multiRef id="id2" soapenc:root="
0" soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/" xsi:type="ns5:forwardedCallInterceptEnum"
xmlns:ns5="http://www.sonusnet.com/ems/lawfulintercept/model" xmlns:soapenc="http://schemas.xmlsoap.org/soap
/encoding/">True</multiRef></soapenv:Body></soapenv:Envelope>' http://10.52.24.235/liTargetProvisioning/services
/LawfulInterceptTargetService
```

Target Deletion

```
<?xml version="1.0" encoding="utf-8"?><soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"><soapenv:
Header><USER soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next" soapenv:mustUnderstand="0" xsi:type="
soapenc:string" xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/">calea</USER><PASSWORD soapenv:actor="
http://schemas.xmlsoap.org/soap/actor/next" soapenv:mustUnderstand="0" xsi:type="soapenc:string" xmlns:soapenc="
http://schemas.xmlsoap.org/soap/encoding/">Sonus@123</PASSWORD></soapenv:Header><soapenv:Body><ns1:
deleteLawfulInterceptTargetV2 soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/" xmlns:ns1="
http://www.sonusnet.com/ems/LawfulInterceptTargetService"><LawfulInterceptTargetKeys href="#id0"/></ns1:
deleteLawfulInterceptTargetV2><multiRef id="id0" soapenc:root="0" soapenv:encodingStyle="http://schemas.xmlsoap.org
/soap/encoding/" xsi:type="ns2:LawfulInterceptTargetKeys" xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding
/" xmlns:ns2="http://www.sonusnet.com/ems/lawfulintercept/model"><interceptCriteriaType href="#id1"
/><interceptCriteriaId xsi:type="xsd:string">1\8887770001</interceptCriteriaId><tapId href="#id2"/><
/multiRef><multiRef id="id1" soapenc:root="0" soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
xsi:type="ns3:interceptCriteriaTypeEnum" xmlns:ns3="http://www.sonusnet.com/ems/lawfulintercept/model" xmlns:
soapenc="http://schemas.xmlsoap.org/soap/encoding/">DirectoryNo</multiRef><multiRef id="id2" soapenc:root="0"
soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/" xsi:type="xsd:int" xmlns:soapenc="http://schemas.
xmlsoap.org/soap/encoding/">5555</multiRef></soapenv:Body></soapenv:Envelope>' http://10.52.24.235
/liTargetProvisioning/services/LawfulInterceptTargetService
```

Target Listing

```
<?xml version="1.0" encoding="utf-8"?><soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"><soapenv:
Header><USER soapenv:actor="http://schemas.xmlsoap.org/soap/actor/next" soapenv:mustUnderstand="0" xsi:type="
soapenc:string" xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/">calea</USER><PASSWORD soapenv:actor="
http://schemas.xmlsoap.org/soap/actor/next" soapenv:mustUnderstand="0" xsi:type="soapenc:string" xmlns:soapenc="
http://schemas.xmlsoap.org/soap/encoding/">Sonus@123</PASSWORD></soapenv:Header><soapenv:Body><ns1:
listLawfulInterceptTarget soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/" xmlns:ns1="http://www.
sonusnet.com/ems/LawfulInterceptTargetService"/></soapenv:Body></soapenv:Envelope>' http://10.52.24.235
/liTargetProvisioning/services/LawfulInterceptTargetService
```

Supplementary Services & Features Coverage

The following checklist depicts the set of services/features covered through the configuration defined in this Interop Guide.

Sr. No.	Supplementary Services/ Features	Coverage
1	Basic Call Setup & Termination	✔
2	Call Forward - Busy	✔

Legend

Supported	✔
Not Supported	✘

Caveats

Note the following items in relation to this Interop:

- SBC Application-Errors are reported with HTTP500 which is causing COMMUNICATION-Alarm on LIMS. Should be HTTP200.

Support

For any support related questions about this guide, please contact your local Ribbon representative: or use the details below:

- Sales and Support: 1-833-742-2661
- Other Questions: 1-877-412-8867
- Website:https://ribboncommunications.com/services/ribbon-support-portal

References

For detailed information about Ribbon products and solutions, please visit:

https://ribboncommunications.com/products

Conclusion

This document describes the configuration steps required for the Ribbon Solution to successfully test interop with Utimaco LIMS. All feature and serviceability test cases were completed and passed.

All features and capabilities tested are detailed within this document - any limitations, notes or observations are also recorded in order to provide an accurate understanding of what has been covered, and what has not.

Configuration guidance is provided to enable you to replicate the same base setup - there may be additional configuration changes required to suit the exact deployment environment.