



# OpenScape Business V2

Tutorial  
Support of SIP Endpoints

Version 1.6

# Definitions

## **HowTo**

An OpenScape Business HowTo describes the configuration of an OpenScape Business feature within the OpenScape Office administration. It addresses primarily trained administrators of OpenScape Business.

## **Tutorial**

Within the OpenScape Business tutorials procedures for installation, administration and operation of specific devices, applications or systems, which are connected to OpenScape Business, are described. The tutorial addresses primarily trained administrators of OpenScape Business.

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## Table of History

| Date       | Version | Changes   |
|------------|---------|---|
| 2013-06-14 | 1.0     | Initial Creation  |
| 2014-06-16 | 1.1     | Update for V1R3   |
| 2014-07-08 | 1.2     | Update for V1R3.1 (support of keypad procedures)                |
| 2014-09-03 | 1.3     | Add hint for “Reason:” header field                             |
| 2016-11-04 | 1.4     | Update of restriction section                                   |
| 2017-11-21 | 1.5     | Delete restriction for multiple registrations from same ip:port |
| 2018-07-10 | 1.6     | Add hint for SIP User ID  |

# 1. SIP Endpoint support

This document describes the necessary steps to configure SIP-Endpoints in OpenScape Business and gives a rough overview about the implemented SIP features.

## 1.1. SIP Features

The following features are supported in OpenScape Business

- 1. Registration (Authentication)**

Before establishing or receiving calls an endpoint MUST register at the system. The system expects the configured call number for registration. For security reasons it is strongly recommended to use Authentication.
- 2. Basic call**

Incoming and outgoing as well as LateSDP Basic Call establishment is supported.
- 3. Name and Number presentation (CLIP)**

For each extension a name can be configured in the system. The number and name is presented during call establishment if no restriction is activated.  
*Note: Most SIP endpoints offer the capability to configure a terminal name which is transported in the display part of the From: header field. The terminal name is not used in the system. The name configured in the system is used instead.*
- 4. Call Waiting / Call Offer**

Call Waiting/Call offer is deactivated in default, but can be activated for SIP endpoints too. (subscriber configuration)
- 5. Call Forwarding (CFU/CFB/CFNR)**

Most SIP endpoints offer the capability to configure call forwarding targets.  
*Note: It has to be checked that the call management rules of the system does not interfere with such an endpoint controlled forwarding. (e.g. if CFNR is configured in the system after 15 sec, endpoint controlled CF after 20 sec will not be performed)*
- 6. Hold / Retrieve / Consultation / Alternate**

A call can be put on Hold. If a call is held a consultation call can be established or the call can be Retrieved. The system provides MOH (Music On Hold) for the held party. Alternate/Toggle is possible if two (or more) calls are maintained by an endpoint.
- 7. Transfer (Attended/SemiAttended/Blind)**

3 types of transfer are supported:
  - Attended Transfer: Before the call is transferred the transferor has an established consultation call.
  - SemiAttended Transfer: The Transferor goes in consultation and transfer as soon as the consulted party rings.
  - Blind Transfer: Transfer is invoked out of the original call without consultation call
- 8. Message Waiting**

Most SIP endpoints offer the capability to subscribe to a "Voicemail server". An endpoint which has subscribed to the MWI service receives notifications about a message left in OpenScape Business.
- 9. Distinctive ringing**

To allow distinctive ringing signals at SIP subscribers the alertinfo header field is included in outgoing Invite's:  
e.g. Alert-Info: <Bellcore-dr1>;info=alert-internal  
By using this header field different ringing signals can be used for:
  - "<Bellcore-dr1>;info=alert-internal" - normal (internal) alerting;
  - "<Bellcore-dr2>;info=alert-external" - external alerting;
  - "<Bellcore-dr3>;info=alert-recall" - recall alerting (e.g., following transfer)To make use of this feature the SIP endpoint has to be configured accordingly.
- 10. Video**

Video connections are supported between SIP endpoints connected to the same system and in an OpenScape network. Video connections are not supported on ITSP connections.

#### 11. Codec support

In an OpenScape environment the following codecs will be used:

|  |   |
|--|---|
| For gateway calls (analog/ISDN) :      | G711a, G711 <sub>u</sub> and G729   |
| For calls to the OpenStage HFA phones: | G711a, G711 <sub>u</sub> , G729 and G722                                  |
| For Fax                                | T.38 as well as G711-transparent (depending on the connected fax machine) |
| Calls to other SIP devices             | device dependant  |

#### 12. DTMF support

In an OpenScape environment the recommended DTMF transport standard is RFC2833/RFC4733.

No other method is supported (e.g. SIP Info)

#### 13. Group features

SIP endpoints can be members of Groups and/or Basic / Executive MULAP (restriction: No group call numbers are displayed, only the original caller number is presented to the endpoint)

If a group call is answered by a different group member, the SIP endpoint receives a CANCEL request containing the following reason header field.

Reason: SIP ;cause=200 ;text="Call completed elsewhere"

This indication can be used to avoid displaying the group call in the local caller list.

## 1.2. System features controlled by keypad procedures "\*nn/#nn"

The following system features of OpenScape business can be invoked by dialing feature codes (keypad procedures):

Call related features:

#### 1. Speed dialing (\*7nnnn)

Dialing of the system speed dial numbers (KWZ) is supported at SIP phones. Only en bloc dialing is supported, entering additional digits manually is not possible -> only KWZ entries containing a complete call number can be used.

#### 2. Group Call Pickup (\*57)

If a SIP endpoint is a member of a pickup group, call pickup can be invoked using the corresponding feature code (default \*57).

Non Call related features:

#### 3. Reset services (#0)

The following features will be reset when dialing the respective code #0

- Leave Hunt group
- Suppress calling number

#### 4. Rejoin Hunt Group / Leave Hunt Group (Stop Hunt) (\*85/#85)

Join/Rejoin (\*85): joining all groups and joining selected group is supported (as POT)

Leave (#85): leaving all groups and leaving selected group is supported (as POT)

#### 5. Door opener (\*61)

The door opener function is supported at SIP phones. Therefore an adapter box (TFE) is necessary and has to be configured in the system. Only en bloc dialing is supported, entering additional digits manually is not possible.

Door opener via DTMF (\*89/#89) is not supported

#### 6. Temporary suppressing the displaying of the calling number (\*86/#86)

\*86 to suppress, #86 to enable displaying of calling number.

Restrictions for non call related features:

A SIP endpoint can activate the keypad procedure in IDLE state only.

The system will release the "call" immediately with "487 Request terminated".

No confirmation (Displaytext or tone) will be available.

### 1.3. Local features provided by SIP endpoints

The following features may be supported locally in a SIP phone

- Caller list
- Consultation Call
- Conference
- DoNotDisturb (DND)
- Reject/Refuse Call
- Call Deflection (Forward ringing call to another destination)

Other SIP features are NOT supported in OpenScape Business.

### 1.4. 3PCC for SIP endpoints

3<sup>rd</sup> party Call control (3PCC, RFC3725) is supported for the following features:

- Basic Call establishment
- Hold
- Retrieve
- Consultation Call
- Toggle/Alternate
- Transfer Call
- Deflect Call (Forward to new destination)
- Release Call



If 3PCC is used, the controlled SIP endpoint MUST support call waiting and call waiting MUST be allowed in the endpoint.

Outgoing Invites for 3PCC calls contain the Alert-Info header field allowing for automatic call acceptance by the endpoint and entering handsfree mode:

Alert-Info: <www.example.com/us.ringer.beep>; **info=alert-autoanswer**

The same Alert-Info header field is used in reINVITE's sent during 3PCC feature control.

### 1.5. Security considerations

With the increasing deployment of VoIP networks more and more attacks against VoIP equipment can be observed in such networks. SIP as an open and well-known protocol is implemented in various crack tools which are freely available in the internet. To avoid misuse of a SIP access careful configuration is crucial.

For a SIP subscriber access the following rules should be followed:

- **Activate authentication**
- **Use a non trivial password with**
  - a minimum of 8 and a maximum of 20 characters
  - at least one upper case letter. (A - Z)
  - at least one lower case letter. (a - z)
  - at least one number. (0 - 9)
  - at least one special character
  - no more than 3 repeated characters
- **Define a SIP user ID different from the Callno**

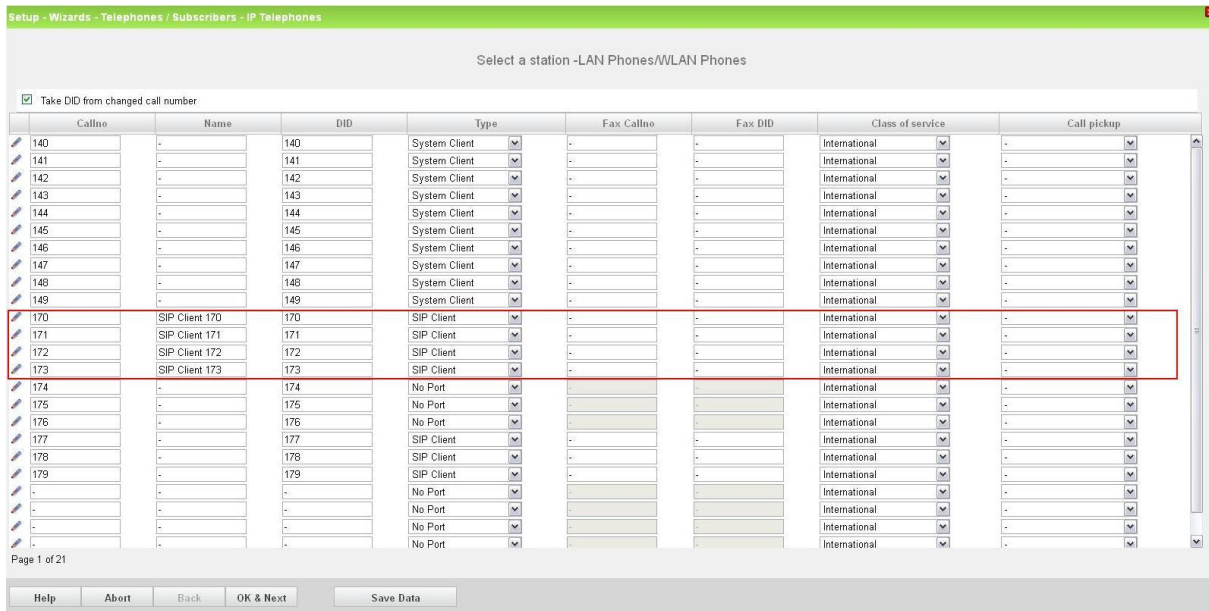
## 1.6. Known restrictions for all SIP endpoints

1. **Keypad procedures**  
Keypad procedures which are not listed under 1.2 are NOT supported for SIP Endpoints (like \*1 or #1 for call forwarding)
2. **Ring back tone**  
During Transfer a held SIP endpoint does not get ring back tone, MOH is played instead
3. **Direct Pickup**  
SIP endpoints cannot activate call pickup (default \*59).
4. **Call center**  
SIP endpoints cannot be used as OpenScape Business contact center agent
5. **Forking**  
SIP endpoints can be configured in groups (hunt group, ring group) and thus are able to participate in some group features offered by OpenScape Business. Forking as it is defined in the SIP protocol is not supported.
6. **Multiple registrations for one number**  
Multiple registrations from different devices for one number are not supported.
7. **MOH (Music on Hold)**  
As the system provides MOH during features like Hold, the local MOH in the endpoint **MUST** be deactivated. If local MOH is enabled the phone user will hear a short burst of local MOH followed by the system MOH when a call is put on hold. In addition the phone user may hear a short burst of local MOH before a call is retrieved or released.
8. **System conference**  
A SIP endpoint can be a “passive” member of a system controlled conference only. Even if a SIP endpoint offers features in this situation (e.g. Hold, Consultation,...) these are NOT supported by the system and the call will be released when using such features during conference.
9. **Group Pickup**  
In case of multiple calls to a pick up group several calls may exist in parallel. When invoking group pickup the first call can be picked only.  
Group Pickup signaling is based on proprietary information exchanged in the dialog info event package. SIP endpoints which do not subscribe to that specific dialog event package do not receive a notification about group pickup.
10. **Dynamic change of SIP transport protocol**  
SIP endpoints connected to OpenScape Business **MUST** use the transport they have used for SIP registration for all subsequent messages. A dynamic change of the transport (e.g. from UDP to TCP) as mentioned in RFC3261 for larger SIP messages is not supported. If the SIP endpoint needs TCP transport for larger messages (e.g. due to large SDP or a large SIP digest response) TCP transport **MUST** be configured for all SIP messages.

# 2. Open Scape Business configuration

## 2.1. Configuring a SIP Endpoint


For the configuration of SIP endpoints start the Setup Wizard “Telephones / Subscribers-> IP-Telephones”:



For SIP endpoints the “Type” MUST be set to SIP Client. Add or change the following data to your needs: Callno and Name.



For safety reasons authentication is activated for SIP endpoints in default with a random password. Thus a new password MUST be assigned before a SIP endpoint is able to register.

Press “Edit”  to enter the “Change Station” page



Enter the password in the security section of the “Change Station” page

- Chose a non trivial password according to the rules defined in 1.5 above  
Note: the password is NOT displayed the Password field. Thus an empty field does NOT mean that no password is assigned.

The following data MUST be present, but may be changed if your deployment needs to have a specific string here:

- Realm is predefined with a default string (e.g. SMO-SIP).
- SIP User ID is predefined with a default string (e.g. SIP-“callno”).

|  |   |
|--|---|
|  | <p>You may deactivate authentication for a specific endpoint. As this is a potential risk for misuse of the system (e.g. tollfraud), this is logged as MAJOR issue in the systems event log file. <b>Authentication should NEVER be deactivated if your system has access to the internet.</b></p> <p>If internet registration is allowed for at least one SIP endpoint in the system, deactivation of Authentication is not possible. (since V2R2)</p> |
|--|---|

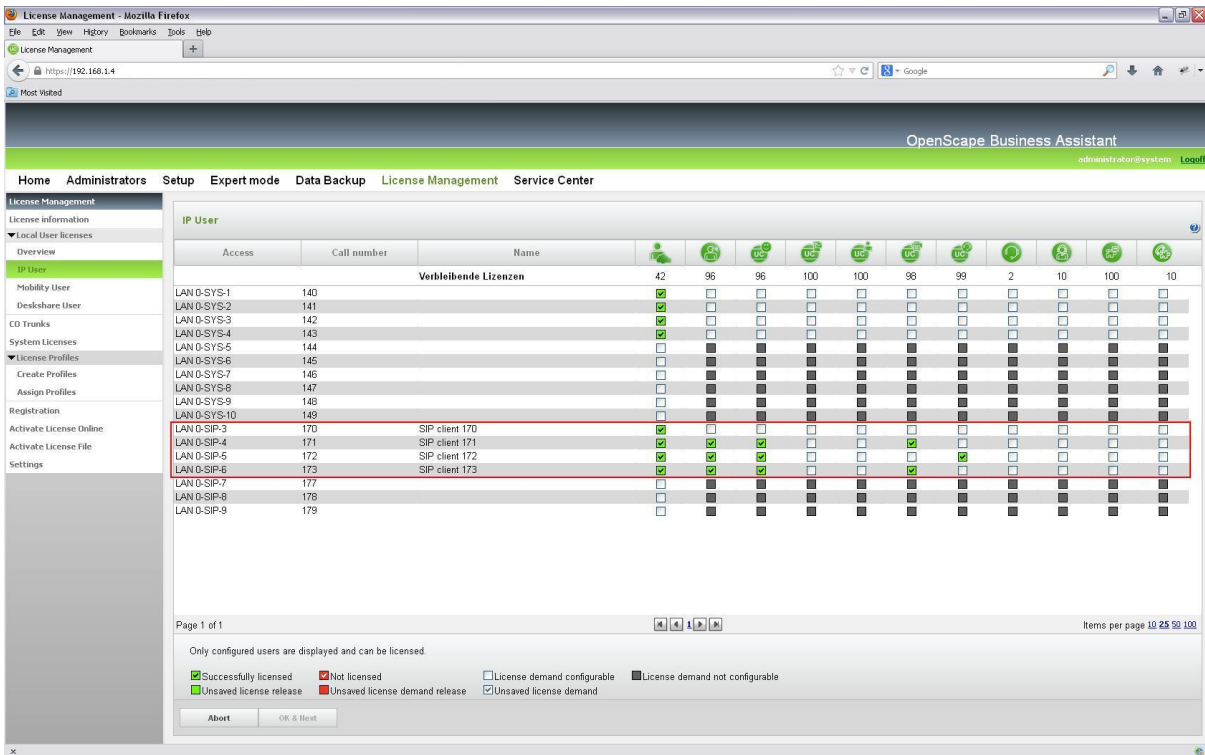
Please note the configuration data for each endpoint, as you will need them to configure the SIP endpoints.

|  |  |
|--|--|
|  | <p>Call number and SIP User ID must be configured in your SIP endpoint. If the endpoint does not offer the configuration for both values you need to set SIP User ID equal to the call number.</p> |
|--|--|







## 2.2. Assign License to a SIP Endpoint

SIP Endpoints needs to be licensed before they are able to make use of the system.

Open "License Management / IP-User" and activate the station license "IP User"  for each configured SIP endpoint.



If SIP endpoints should use additional features the following licenses may be set:

-  "Voicemail"
-  "Groupware User"
-  "UC User"
-  "Fax"
-  "Conference"
-  "Application Launcher"

All other features are NOT supported for SIP endpoint.

## 3. SIP Endpoint configuration

Several SIP endpoints are tested to verify the interoperability with the OpenScape Business system. For each of these endpoints a document providing a list of necessary configuration steps can be downloaded from our Wiki.

## About Unify

Unify is the Atos brand for communication and collaboration solutions. At the core of the Atos Digital Workplace portfolio, Unify technology enables organizations of all sizes to transform the way they collaborate, creating a more connected and productive workforce which can dramatically improve team performance, individual engagement and business efficiency.

Unify products represent a strong heritage of technology innovation, reliability and flexibility. Their award-winning intuitive user experience can be delivered through almost any device and in any combination of cloud or on-premise deployment. Augmented by Atos' secure digital platforms, vertical solutions and transformation services, they set the global standard for a rich and reliable collaboration experience that empowers teams to deliver extraordinary results.

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