

Business Talk & BTIP For IPBX Unify OpenScape Voice and Unify OpenScape Branch

Versions addressed in this guide: OpenScape Voice
V9R4 with OpenScape Branch V9R4 & OpenScape Voice
V9 R1

Information included in this document is dedicated to customer equipment (IPBX, TOIP ecosystems) connection to Business Talk IP service: it shall not be used for other goals or in another context.

Document Version

Version of 23/09/2019

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2. Goal of this document

The aim of this document is to list technical requirements to ensure the interoperability between Unify OpenScape Voice IPBX with Orange Business Services Business Talk / Business Talk IP SIP services, hereafter so-called “service”.

3. OpenScape Voice V9R4 & OpenScape Branch V9R4

3.1. Architecture overview

Access to BT/BTIP service required to be connected to 2 Orange a-SBC platforms (nominal and backup platforms).

In nominal situation, call distribution is performed to OpenScape Voice (OSV) solution connected via SIP trunks to Orange infrastructure (§3.1.1).

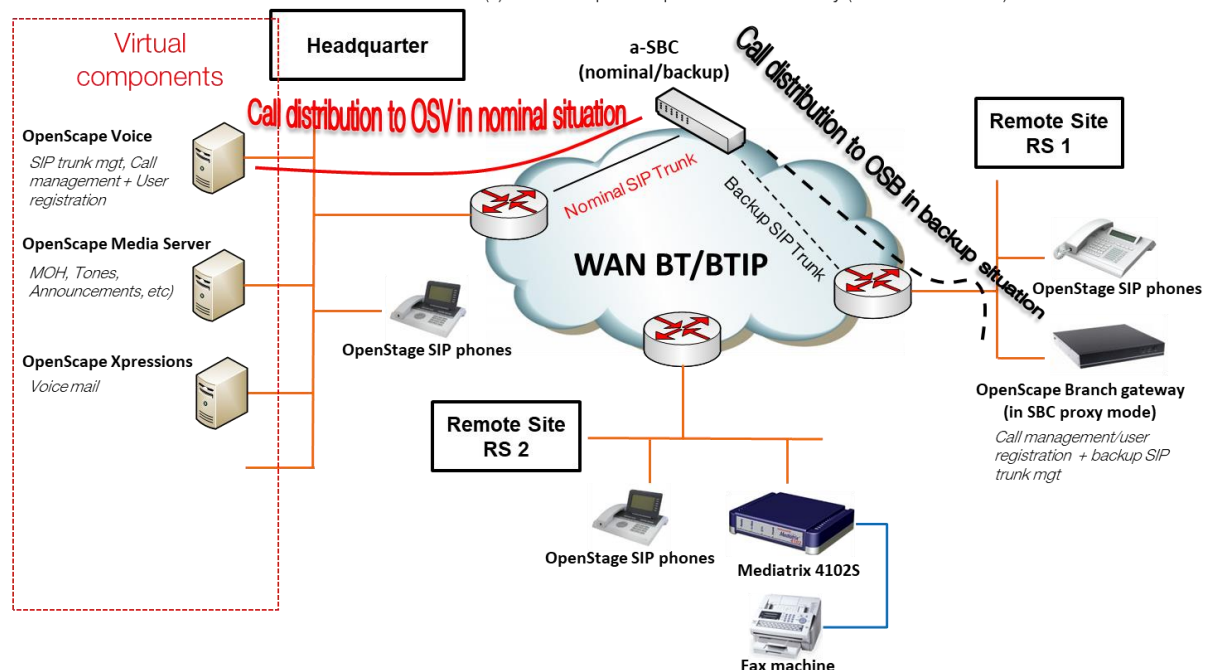
For remote sites equipped with OpenScape Branch (OSB) configured in SBC proxy mode, call distribution can be directly performed to Orange infrastructure via backup SIP trunks when connection with OSV is lost. Thus OSB runs in survivability mode (§3.1.1).

In nominal situation, local call distribution can be also performed to OSB solution (configured in SBC proxy mode) via local SIP trunks connected to Orange a-SBC. In this architecture, OSV platform is usually not connected to Orange a-SBC and OSB runs in nominal mode (§3.1.2).

3.1.1. Distributed architecture: Nominal call distribution to OSV

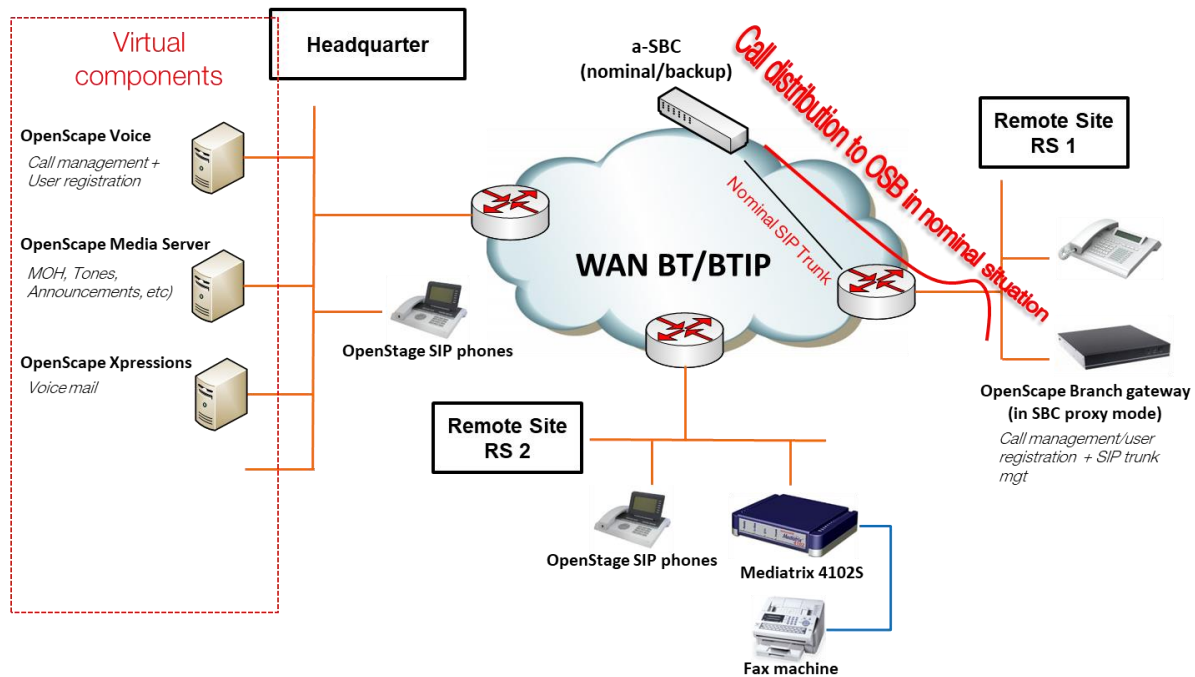
> Distributed Architecture: Nominal Call distribution to OSV

- 1 Headquarter based on the OpenScape Voice solution (with SIP trunk)
- 1 or several Remote Site(s) with an OpenScape Branch Gateway (with or without Backup SIP trunk)
- 1 or several Remote Site(s) without OpenScape Branch Gateway (without SIP trunk)



3.1.2. Distributed architecture: Nominal local call distribution to OSB

- > Distributed Architecture: Nominal local distribution to OSB
 - 1 Headquarter based on the OpenScape Voice solution (without SIP trunk)
 - 1 or several Remote Site(s) with an OpenScape Branch Gateway (with SIP trunk)
 - 1 or several Remote Site(s) without OpenScape Branch Gateway (without SIP trunk)



3.2. Sizing consideration

Specific sizing approach has to be considered with OSV/OSB solution due to the fact that:

- In nominal situation, phones located on remote sites with OSB in SBC proxy mode register both to OSB but also to OSV. Consequently for calls from or to these phones, the SIP signaling flow is routed via OSB to OSV and back to OSB.
- OSB in nominal or survivability mode anchors systematically the RTP flow for calls to/from Orange a-SBC. Therefore, the RTP flow is not direct between Unify phones and Orange a-SBC.

3.3. Resiliency consideration

OSV consists in co-located two-nodes cluster in active-backup mode.

Switchover between the active OSV node to the second node in case of a failure is done by a monitoring process named *Survival Authority* on an external server.

Same resiliency also exists for OSB.

3.4. CAC & Codec consideration

G729 codec usage is not supported in the scope of Unify OSV or OSB SIP trunking interoperability with Orange Business Services. Only G711a codec is supported.

Configuration of Internal CAC solution in Openscape Voice is required to restrict only G711A 20ms Voice codec. Refer to 3.8. Annex 1 « CAC management rules on OpenScape Voice system » for more information.

3.5. Parameters to be provided by customer to access BT/BTIP service

IP addresses marked in red have to be indicated by the Customer, depending on Customer architecture scenario.

Head Quarter (HQ) architecture	Level of Service	Customer IP addresses used by the service	
		Nominal	Backup
OSV - Local redundancy-Duplex integration	Local redundancy: two OSV servers in a redundant two-node cluster that executes in an active-standby mode and sharing the same IP@.	VIP@	N/A
2 OSV servers (active/active) - 2 NUMBERING PLANS 2 OSV servers (active/active) hosted by 2 different physical sites. Local redundancy (Duplex integration) possible on each physical sites Each OSV server manages a range of users (2 numbering plans). Each OSV server (OSV1 and OSV2) has its own SIP trunk and each manages its own group of users in nominal mode. - Nominal mode: All HQ1 users register with OSV1 HQ1 All HQ2 users register with OSV2 HQ2 - Backup mode: In case of OSV1 HQ1 crash, all HQ1 users re-register onto OSV2 HQ2 In case of OSV2 HQ2 crash, all HQ2 users re-register with OSV1 HQ1 warnings: - Both HQ accesses capacity to be sized adequately	For OSV1 HQ1 User registration redundancy (IP phones only) Rerouting at AS level	OSV1 HQ1 IP@ or OSV1 HQ1 VIP@ (if duplex integration)	N/A
	For OSV2 HQ2 User registration redundancy (IP phones only) Rerouting at AS level	OSV1 HQ2 IP@ or OSV2 HQ2 VIP@ (if duplex integration)	N/A
OSB (in SBC proxy mode) - Local redundancy-Duplex integration In this configuration, the OSBranch servers are connected to OSV servers but only the OSBranch servers are connected to Orange infrastructure via local SIP trunks	Local redundancy: two OSB servers in a redundant mode and sharing the same IP@.	VIP@	N/A

Remote Site (RS) architecture – OSV Local redundancy	Level of Service	Customer IP addresses used by the service	
		Nominal	Backup
Remote site with OpenScape Branch gateway	Local user survivability, trunk redundancy via PSTN only	N/A	N/A
Remote site with OpenScape Branch gateway (in SBC proxy mode) + SIP trunk as backup	Local survivability for the remote site hosting the OSB/SIP Trunk in case of non-access to HQ (OSV crash) Nominal outgoing and incoming traffic goes through HQ	OSB VIP@	N/A
Remote site without media gateway	No survivability, no trunk redundancy	N/A	N/A

Remote Site (RS) architecture - 2 OSV servers (active/active)	Level of Service	Customer IP addresses used by the service	
		Nominal	Backup
Remote site with OpenScape Branch gateway	Local user survivability, trunk redundancy via PSTN only	N/A	N/A

Remote site with OpenScape Branch gateway + SIP trunk as backup	Local survivability for the remote site hosting the OSB/SIP Trunk in case of non-access to HQ (OSV crash) Nominal outgoing and incoming traffic goes through HQ	OSB VIP@	N/A
Remote site without media gateway	No survivability, no trunk redundancy	N/A	N/A

3.6. Business Talk & BTIP certified versions

To get more details about the versions supported by Unify, Unify product Lifecycle notifications can be provided via Unify's standard communication channels (e.g. account teams, partner portal).

3.6.1. Unify OpenScape Voice/Branch IPBX

Unify OpenScape Voice / Branch IPBX – software versions			
Reference product	Software version	Certification ✓ : Certified NS : No supported	Restrictions/Comments
OpenScape Voice software	V9R4.39.3	✓	User-Agent header contains: OpenScape Voice V9R4
OpenScape Branch software	V9R4.11	✓	User-Agent header contains: OpenScape-Branch-V9R4

3.6.2. Unify OpenScape Voice/Branch endpoints and applications

Unify OpenScape Voice / Branch IBX - Endpoints and applications					
Reference product		Software version NA: not applicable	Certification ✓ : Certified NS : No supported	OSV version / OSB version	Restrictions/Comments
SIP endpoints	OpenStage SIP 15, 20, 40, 60, 80	V3 R5.13.0	✓	V9R4.39.3/ V9R4.11	
Unify Gateway	OpenScape Branch	V9R4.11	✓	V9R4.39.3/ V9R4.11	
Voice Mail	OpenScape Xpressions	V7 R1.5.0	✓	V9R4.39.3/ V9R4.11	
Third party Gateway	Mediatix 4102S	Dgw 42.2.954	✓	V9R4.39.3/ V9R4.11	
Analog Fax	Connected to Mediatix 4102S	NA	✓	V9R4.39.3/ V9R4.11	Only T.38 protocol is supported for FAX.

3.7. SIP trunking configuration checklist

Refer to the document written by Unify, in sections 3.10 and 4.9 of this document.

For the configuration of OpenScape Voice V9R4, the Unify document in section 4.9 has to be considered. The Unify document in section 3.10 describes the OpenScape Branch V9R4 configuration to ensure the interoperability with Orange Business Services.

3.8. CAC management rules on OpenScape Voice system

See paragraph 3.8.

3.9. Configuration of OpenScape Voice V9R4 and OpenScape Branch V9R4 with Orange Business Services SIP Trunk

OpenScape Voice V9R4

OpenScape Branch V9R4

Configuration of OpenScape Voice V9R4
and OpenScape Branch V9R4 with
Orange Business Services SIP Trunk

Version 1.1– 11th July 2019

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1. Goal of this document

This document describes the Unify OpenScape Voice V9R4 and OpenScape Branch V9R4 configuration to ensure the interoperability with Orange Business Services.

2. Certified Hardware and Software

The table below show the tested versions:

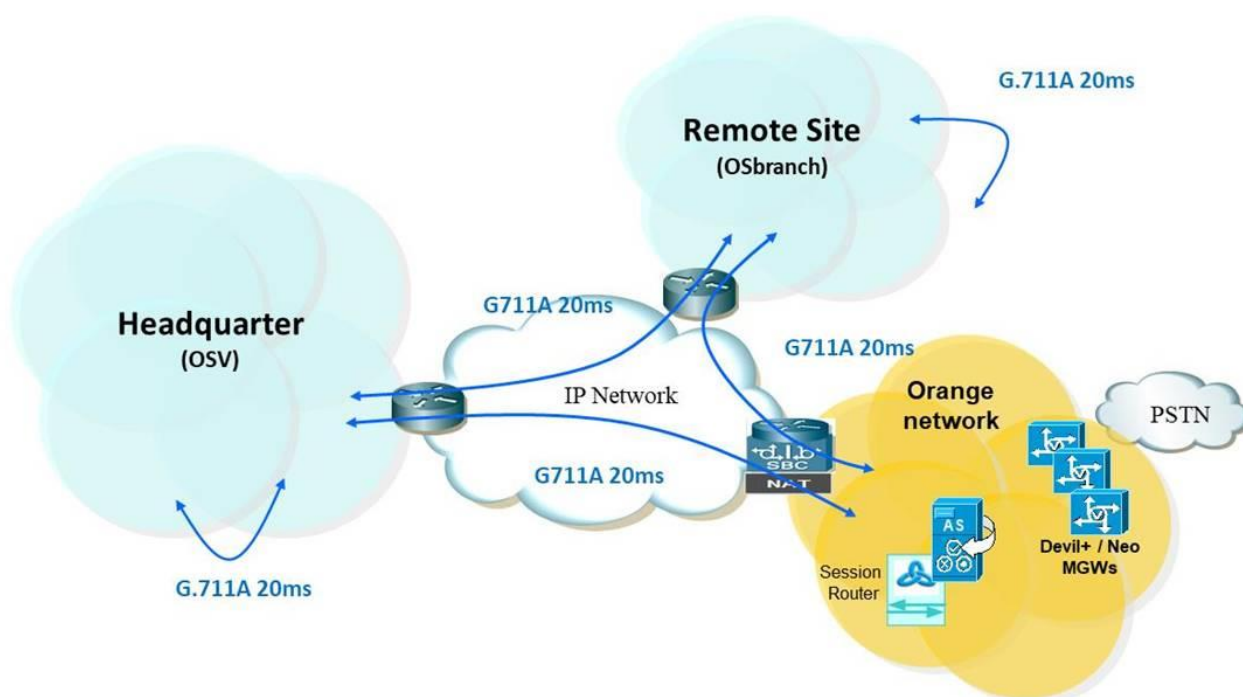
Device	SW / Release
OpenScape Voice, virtualized	V9 R4.39.3
OpenScape Branch, virtualized SBC Proxy mode	Tested: V9 R4.09.02 Release to be Orange compatible: V9R4.11
OpenStage SIP phone	V3 R5.13.0

3. Customer Network Topology

The figure below shows the connection between the Orange network, the customer's headquarter and a customer's remote site. The customer's headquarter and his remote sites are connected also via Orange network.

Orange doesn't want a codec change without codec renegotiation. Therefore G711A should be configured as one and only codec to be supported by OS Branch because OS Branch cannot select only one codec in its SDP answer.

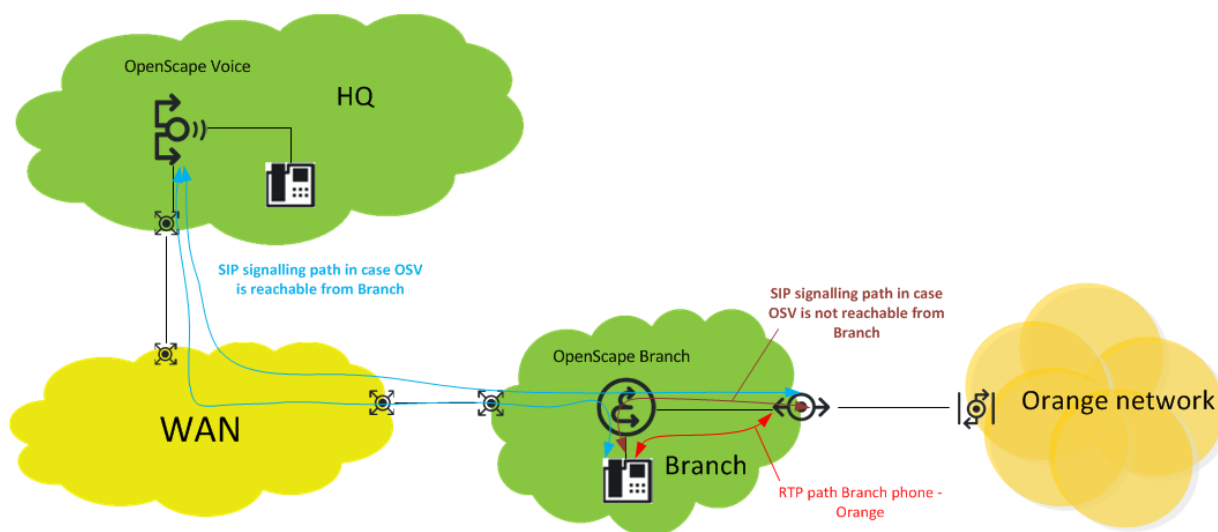
BT/BTIP Topology – G711A offer



Call routing on OS Branch is as follows. The phone is registered via OS Branch with OS Voice so the phone is registered with both servers.

- OS Branch Nominal Mode (NM)
OS Branch has a connection to OS Voice. Calls from or to the phone are routed via OS Branch to OS Voice and back to OS Branch.
- OS Branch Survival Mode (SM)
OS Branch has no connection to OS Voice. OS Branch connects directly the Orange SBC and the phone.

Calls from testlab to Orange network when OSV is/is not reachable



4. Configuration of the SIP Devices

4.1. Configuration of OpenScape Voice

The following describes the configuration of OpenScape Voice for the Orange Business Services SIP Trunk compliancy. OpenScape Voice has been installed and configured based on the OpenScape Voice Installation and Configuration Guide. Additionally an Orange Branch endpoint and endpoint profile configuration is required.

4.1.1. OpenScape Branch Endpoint Profile Configuration

[susi] - [Orange] - Edit Endpoint Profile : EPP_Munich_00015

Please enter the profile data.

General Endpoints Services

Name: EPP_Munich_00015

Remark:

Numbering Plan: NP_Munich_00015

Management Information

Please enter the data for the following fields in the corresponding screens.

Class of Service:

Routing Area: RA_00015

Calling Location:

Time Zone: Europe/Berlin

SIP Privacy Support: Full

Failed Calls Intercept Treatment: Disabled

Language: German

Impact Level: Unclassified

[susi] - [Orange] - Edit Endpoint Profile : EPP_Munich_00015

Please enter the profile data.

General Endpoints Services

Endpoints currently assigned to this profile

All: 1

Name	Type	Registered	Primary
EP_OSB_Orange	Static	Yes	192.168.174.133

[susi] - [Orange] - Edit Endpoint Profile : EPP_SBC_Orange

Please enter the profile data.

General Endpoints Services

Message Waiting: No

Call Transfer: Yes

Call Forward Invalid Destination: No

Toll and Call Restrictions: No

Park to Server: No

CSTA Network Interface Device: No

Enable Name Provider and Limited Call Control

What to do if Application fails to handle inbound calls:

Allow call to proceed as normal

4.1.2. OpenScope Branch Endpoint Configuration

The OpenScope Branch endpoint is configured in the Common Management Platform in the Business Group area:

The screenshot shows the UNIFY Common Management Platform interface. The top navigation bar includes tabs for Configuration, Maintenance, User Management, Fault Management, Performance Management, and Accounting. The left sidebar contains a 'Business Group' section with options like Quick Tasks, Business Group List, Orange, General, Profiles, Teams, Statistics, Display Number Modification, Branch Office List, BO_Munich, Members, Subscribers, Endpoints, Media Servers, Private Numbering Plan List, CNP_Orange_00014 (Common), Translation, and Destinations and Routes. The main content area is titled '[susi] - [Orange] - [BO_Munich] - Endpoints'. It includes a search bar and a table of endpoints. A red box highlights the following endpoint:

Name	Numbering Plan Name	Registration Type	Registration State	Operational State	Primary	Remark
EP_OSB_Orange	NP_Munich_00015	Static	Registered	Normal	192.168.174.133	No

Below is shown the configuration of the OpenScope Branch endpoint for the virtual LAN IP:

[susi] - [Orange] - [BO_Munich] - Edit Endpoint :
EP_OSB_Orange

General SIP Attributes Aliases Routes Accounting

Define the connection data of an endpoint, e.g. you may use this to add a gateway to a switch.

Name: EP_OSB_Orange

Remark:

Registered: ☒

Profile: EPP_Munich_00015

Branch Office: BO_Munich

Associated Endpoint: EPDmy_00015

Default Home DN: 33296082570

Location Domain:

Endpoint Template:

Endpoint Type: OpenScape Branch SBC 1000

Max number of users: 1000

Last Update: 2019-06-26 13:18:40.0

CSTA Device ID:

[susi] - [Orange] - [BO_Munich] - Edit Endpoint :
EP_OSB_Orange

General SIP Attributes Aliases Routes Accounting

SIP Trunking: ☒

SIP-Q Signaling: ☐

SIP Signaling

For the static Endpoints the address of the SIP signaling interface can be specified in IP or FQDN format.
Note that the address of the signaling interface cannot be modified unless the entry in the security section has first been removed.

Type: Static

Signaling Address Type: IP Address or FQDN

Endpoint Address: 192.168.174.133

Port: 5060

Transport protocol: TCP

Endpoint does not accept incoming TLS connections: ☐

SRTP media mode: Enabled

ANAT Support: Enabled

ICE Support: Enabled

DTLS Support: Enabled

SIP UA Forking Support: None

Use Proxy/SBC Best-Effort SRTP settings for calls to subscribers: AS-SIP Interface ☐

Management Address:

Red Sky E911 Manager node: ☐

Outgoing Call Supervision Timer (ms):

Proxy Bypass Supervision Timer (ms):

Treat endpoint as secure: ☐

Security

Set the Realm, Username and Password for digest authentication or configure the signaling address as a trusted one.

Trusted: ☒ Ports: All **Edit...**

[susi] - [Orange] - [BO_Munich] - Edit Endpoint : EP_OSB_Orange		[susi] - [Orange] - [BO_Munich] - Edit Endpoint : EP_OSB_Orange		[susi] - [Orange] - [BO_Munich] - Edit Endpoint : EP_OSB_Orange	
General	SIP	Attributes	Aliases	Routes	Accounting
Attributes					
<p>Attributes available for this SIP endpoint</p> <p>Supports SIP UPDATE Method for Display Updates <input type="checkbox"/></p> <p>UPDATE for Confirmed Dialogs Supported <input checked="" type="checkbox"/></p> <p>Survivable Endpoint <input checked="" type="checkbox"/></p> <p>SIP Proxy <input checked="" type="checkbox"/></p> <p>Central SBC <input type="checkbox"/></p> <p>Route via Proxy <input type="checkbox"/></p> <p>Allow Proxy Bypass <input type="checkbox"/></p> <p>Public/Offnet Traffic <input type="checkbox"/></p> <p>Accept Billing Number <input type="checkbox"/></p> <p>Use Billing Number for Display Purposes <input type="checkbox"/></p> <p>Allow Sending of Insecure Referred-By Header <input type="checkbox"/></p> <p>Override IRM Codec Restriction <input type="checkbox"/></p> <p>Transfer HandOff <input type="checkbox"/></p>		<p>Send P-Preferred-Identity rather than P-Asserted-Identity <input type="checkbox"/></p> <p>Send domain name in From and P-Preferred-Identity headers <input type="checkbox"/></p> <p>Send Redirect Number instead of calling number for redirected calls <input type="checkbox"/></p> <p>Do not send Diversion header <input type="checkbox"/></p> <p>Do not Send Invite without SDP <input checked="" type="checkbox"/></p> <p>Send International Numbers in Global Number Format (GNF) <input checked="" type="checkbox"/></p> <p>Rerouting Direct Incoming Calls <input type="checkbox"/></p> <p>Rerouting Forwarded Calls <input type="checkbox"/></p> <p>Enhanced Subscriber Rerouting <input checked="" type="checkbox"/></p> <p>Automatic Collect Call Blocking supported <input type="checkbox"/></p> <p>Send Authentication Number in P-Asserted-Identity header <input type="checkbox"/></p> <p>Send Authentication Number in Diversion Header <input type="checkbox"/></p> <p>Send Authentication Number in From Header <input type="checkbox"/></p> <p>Use SIP Endpoint Default Home DN as Authentication Number <input type="checkbox"/></p> <p>Use Subscriber Home DN as Authentication Number <input type="checkbox"/></p>		<p>Set NPI/TON to Unknown <input type="checkbox"/></p> <p>Include Restricted Numbers in From Header <input type="checkbox"/></p> <p>SIPQ Truncated MIME <input type="checkbox"/></p> <p>Enable Session Timer <input checked="" type="checkbox"/></p> <p>Ignore Answer for Announcement <input type="checkbox"/></p> <p>Enable TLS RFC5626 Ping <input type="checkbox"/></p> <p>Enable TLS Dual Path Method <input type="checkbox"/></p> <p>Ignore Receipt of 181 Call is Being Forwarded <input type="checkbox"/></p> <p>Use extended max. count for loop prevention <input type="checkbox"/></p> <p>Do Not Audit Endpoint <input type="checkbox"/></p> <p>Use Proxy/SBC ANAT settings for calls to subscribers <input type="checkbox"/></p> <p>Support for Callback Path Reservation <input type="checkbox"/></p> <p>Send Progress to Stop Call Proceeding Supervision Timer <input type="checkbox"/></p> <p>Limited PRACK Support <input checked="" type="checkbox"/></p> <p>Support Media Redirection <input type="checkbox"/></p>	

[susi] - [Orange] - [BO_Munich] - Edit Endpoint :
EP_OSB_Orange

General SIP **Attributes** Aliases Routes Accounting

Voice Mail Server ☐

Disable Long Call Audit ☐

Send/Receive Impact Level ☐

Do not send alphanumeric SIP URI ☐

Send alphanumeric SIP URI when available ☐

Support Peer Domains ☐

ACD Call Distribution Device ☐

Reserve 6 ☐

Allow endpoint to Unregister Stale Registrations ☐

Enable Media Termination Point (MTP) Flow ☐

Trusted Subscriber ☐

Enable Fast Connect ☐

Circuit Connector Appliance ☐

Add Route Header: ☐

Disable SRTP ☒

Include OSV SIP User-Agent header field ☐

Do Not Allow URNs in R-URI/TO Header for NG911 Calls ☐

Reserve 8 ☐

Accept x-channel header ☐

Suppress SPE in SIPQ ☐

Reserved 10 ☐

[susi] - [Orange] - [BO_Munich] - Edit Endpoint :
EP_OSB_Orange

General SIP **Attributes** **Aliases** Routes Accounting

Aliases

You can associate here aliases with a SIP Endpoint.

Sel:0 | Items/Page: 100 | All:3

	Name
<input type="checkbox"/>	192.168.174.131
<input type="checkbox"/>	192.168.174.132
<input type="checkbox"/>	192.168.174.133

4.1.3. OpenScope Voice Resilient Telco Platform (RTP) Parameters

The required RTP parameters are configured in the Common Management Platform in the Administration area:

UNIFY Common Management Platform Domain: system User: administrator@system

Configuration Maintenance User Management Fault Management Performance Management Accounting

OpenScope Voice OpenScope Branch OpenScope SBC RG8700 Unified Communications CMP Device Management

[susi] - RTP Management

On this page you can manage RTP Parameters

Search for in

Sel:0 | Items/Page: 200 | All:217

Name	Value	Default Value	Is Default
hiQ/OCMR/OfferedEventFilter	RtpTrue	RtpTrue	Yes
hiQ/CSTA/TelefonicaPASCODE	000000	"000000"	Yes
hiQ/CSTA/TelefonicaOutsideAccess	0	"0"	Yes
hiQ/CSTA/TelefonicaNPIDName		""	Yes
hiQ/CSTA/TelefonicaEID	000000	"000000"	Yes
hiQ/CSTA/TelefonicaEBG	RtpFalse	RtpFalse	Yes
hiQ/CSTA/TelefonicaBGName		""	Yes
hiQ/CSTA/TelefonicaAppID	osv-ebg	"osv-ebg"	Yes
hiQ/CSTA/SharedBridgedAppearanceEnable	RtpFalse	RtpFalse	Yes

Parameter Name	Value	Description
Srx/Sip/Min_Session_Timer_Value	7101000	OSV will send a re-INVITE every 59.175 minutes (session refresh timer)
Srx/Sip/Session_Timer	ON	
Srx/Sip/sdpSessionMaintainer	RtpTrue	This parameter forces OSV to send the o-line value unchanged in SDP as received from the phone when set to RtpTrue.
Srx/Sip/IncludeOsvUserAgentVersionInfo	RtpTrue	This enables the inclusion of the OSV version in the User-Agent header when set to RtpTrue.

4.2. Configuration of OpenScape Branch

OS Branch is configured to run in SBC Proxy mode. In this mode OS Branch has two interfaces. One interface connects to OS Voice, and the second interface connects via SBC functionality to Orange.

The screenshot shows the 'OpenScape Branch Management Portal' for 'osb1'. The left sidebar contains navigation links: Administration, System, Network/Net Services, VoIP, Features, Security, Diagnostics & logs, Alarms, and Maintenance. The main content area is titled 'General - osb1' and includes an 'Alarms' section with a summary: Critical: 0, Major: 0, Minor: 0. Below this is the 'System Status' section, which shows 'Branch mode' as SBC-Proxy, 'Operational state' as normal, and 'Master IP Address' as 192.168.174.131. It also lists 'Com Node 1' and 'Com Node 2' with their respective primary and backup servers and penalty box states. A 'Services status' section contains buttons for 'Show' and 'Registered subscribers'. The 'System Info' section on the right displays hardware details: CPU (7.17% - 2 x 2600 MHz), Memory (29.6% - 2 Gb), and Disk (13.21% - 42 Gb). It also shows 'System uptime' (14 days 21:22), 'Hardware type' (Virtual OSB 1000), and 'Software Info' (Version V9 R4.09.02, Partition information Active/Backup). At the bottom right are 'Apply Changes' and 'Cancel Changes' buttons.

System -> Settings:

System -> License:

The first screenshot shows the 'System' configuration page with the 'Settings' tab selected. It includes fields for 'Branch mode' (SBC-Proxy), 'Hostname' (osb1), and 'Domain name' (sbc.cslm.sielan.de). There are checkboxes for 'Gateway only' and 'Enable Standalone Mode'. The 'Country configuration' section shows 'Germany' selected. The 'Administration' section includes 'Session expiry timer' (3 hours) and 'Default language' (English). The 'Watchdog Configuration' section has a checkbox for 'Watchdog expiry timer' and a 'Watchdog expiry timer' (1 min). The second screenshot shows the 'System' configuration page with the 'License' tab selected. It includes fields for 'License server', 'License server port' (4709), 'Hardware ID' for Node1 and Node2, 'Logical ID', and 'Advanced Locking ID'. The 'License Information' section shows 'License Version' (V9), 'SID ID' (SID:1820702771924), 'License type' (Stand Alone), and 'Days till license expires' (unlimited). There is a 'Stand alone license file' section with 'Browse...' and 'Upload' buttons. At the bottom is a table showing license usage:

License type	License configured	Licenses usage (peak)
OSB Base	1	1
OpenScape Branch Registered Lines	50	1
SBC sessions	100	4
Auto Attendant	1	0
Backup ACD	1	0
Voice Mail	1	1

Network/Net Services -> Settings:

Network/Net Services ?

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

Settings DNS NTP DHCP Traffic Shaping QoS

Physical Network Interface ?

Interface	Enabled	MTU	Speed (Mbps)	Duplex mode
eth0	<input checked="" type="checkbox"/>	1500	Auto	Auto
eth1	<input checked="" type="checkbox"/>	1500	Auto	Auto

☐ Interface bonding

Interface Configuration ?

LAN configuration

Add Delete

Type	Interface	IP address	Subnet mask	VLAN tag	UDP port	TCP port	TLS port	MTLS port
Main IPv4	eth0	192.168.174.131	255.255.255.128	0	5060	5060	5061	5061

WAN configuration

Add Delete

Type	Interface	IP address	Subnet mask	VLAN tag	UDP port	TCP port	TLS port	MTLS port
Main IPv4	eth1	192.168.152.18	255.255.255.240	0	5060	5060	5061	5061

Routing ?

Default gateway address 192.168.152.17

Default gateway IPv6 address

Routing configuration

Add Delete

Row	Destination	Gateway	Netmask	Interface
1	172.28.141.0	192.168.174.129	255.255.255.128	eth0
2	192.168.0.0	192.168.174.129	255.255.0.0	eth0

Redundancy ?

☒ Enable redundancy ☐ Enable PRI/CAS redundancy Failed links threshold ☐ Switchover without Link Check

☐ Test Default Gateway instead of subscribers during failover

Interface	IP address Node 1	IP address Node 2	Virtual IP Address
LAN	192.168.174.131	192.168.174.132	192.168.174.133
WAN	192.168.152.18	192.168.152.19	192.168.152.20

OK Cancel

Network/Net Services -> DNS:

Network/Net Services

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

Settings **DNS** **NTP** **DHCP** **Traffic Shaping** **QoS**

Client

Refresh DNS

DNS server IP address **Add** Alias **Add**

Delete

Delete

Server

☐ Enable DNS server **DNS configuration**

☐ Enable customization **Administer custom files**

Network/Net Services -> NTP:

Network/Net Services

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

Settings **DNS** **NTP** **DHCP** **Traffic Shaping** **QoS**

NTP Settings

Region Timezone

☐ Enable local NTP server

☐ Manual configuration

Date Time **Apply**

☒ Synchronize with NTP server

NTP server **Add** **Synchronize now**

Delete

VOIP -> Sip Server Settings:

VOIP ?

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

Sip Server Settings | Port and Signaling Settings | Manipulation and Routing | Error Codes | Media

General ?

Comm System Type: Collocated

OPTIONS source port: 5060

IP Version Towards SIP Server: IPv4

☐ Enable path tagging
☐ Branch behind SBC
☐ Branch behind NAT
☐ Synch subscriber data
☐ Disable notification in survivable mode
☐ Enforce minimum Subscriber TransportType Security
☐ Disable Basic Security Check for LAN
☒ Send CANCEL on Unreplied Branches
☐ SDP ANAT Bypass

[Other trusted servers](#) | [Load Balance Mapping Table](#)

Node 1 ?

Target type: Binding

Primary server: 192.168.163.22 Transport: TCP Port: 5060
Backup server: Transport: TCP Port:
SRV record: Transport: TCP

Node 2 ?

Target type: Binding

Primary server: 192.168.163.23 Transport: TCP Port: 5060
Backup server: Transport: TCP Port:
SRV record: Transport: TCP

Timers and Thresholds ?

Failure threshold (pings)	2	OPTIONS interval (sec)	60
Success threshold (pings)	1	OPTIONS timeout (sec)	4
Transition mode threshold (pings)	1	Notification rate (per sec)	100

VOIP -> Port und Signaling Settings:

VOIP ?

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

Sip Server Settings **Port and Signaling Settings** **Manipulation and Routing** **Error Codes** **Media**

Port Range ?

Media independent RTP ports

Port min: 35000 Port max: 65000 Time to live (sec): 180

Subscribers dynamic SIP ports

Port min: 10000 Port max: 16600

Gateways/trunks static SIP ports

Port min: 9000 Port max: 9254

TCP/BFCP ports

Port min: 35000 Port max: 39999

Signaling and Transport Settings ?

INVITE No Answer timeout - Normal Mode (ms) 360 **INVITE No Answer timeout - Survival Mode (ms)** 180

☐ Disable answer supervision for emergency calls line

TCP connect timeout (sec) 4 **TCP send timeout (sec)** 3

TCP connection lifetime (sec) 350 ☐ TCP keep alive

BFCP connection timer (min) 720

Miscellaneous ?

OK Cancel

VOIP -> Manipulation and Routing:

Here must be configured SIP Manipulation rules to modify numbers dialed on the phone to be sent to Orange in the expected number format when OS Branch is in Survival Mode:

SIP Server Settings | Port and Signaling Settings | Manipulation and Routing | Error Codes | Media

Office Codes

☐ Enable source-based routing in Normal Mode

Row	SN range	Office code	Destination prefix	Insert office code
-----	----------	-------------	--------------------	--------------------

Add Edit Delete

SIP Manipulation

Row	Matching digits	Match position	Min/Max Length	Header	Delete/insert position	Number of digits to delete	Insert digit
1	000	0	4/23	R-URI	0		
2	000	0	4/23	P-AI (or FROM if no P-AI exists)	0	1	
3	+	0	2/23	R-URI	0	1	
4	+	0	2/23	P-AI (or FROM if no P-AI exists)	0	1	
5	33	0	3/23	From	0		

!!!

SIP Routing

Row	Source IP	Condition (error codes)	Destination IP/FQDN	Destination port	Destination transport	Destina
-----	-----------	-------------------------	---------------------	------------------	-----------------------	---------

OK Cancel

VOIP -> Error Codes:

Error code 408 must be enabled here for both modes in case the nominal Orange SBC does not respond to allow rerouting to the backup SBC.

VOIP ?

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

Sip Server Settings **Port and Signaling Settings** **Manipulation and Routing** **Error Codes** **Media**

Error Code Settings ?

Survivable Mode Normal Mode

☐ Enable routing for all codes ☐ Enable routing for all codes

☒ Disable routing for all codes ☒ Disable routing for all codes

Items/Page: 20 | << < 1 > >> | All: 31 | [CSV Export](#)

Error code	Description	Enable routing in Survivable Mode	Enable routing in Normal Mode
300	Multiple Choices	<input type="checkbox"/>	<input type="checkbox"/>
301	Moved Permanently	<input type="checkbox"/>	<input type="checkbox"/>
302	Moved Temporarily	<input type="checkbox"/>	<input type="checkbox"/>
305	Use Proxy	<input type="checkbox"/>	<input type="checkbox"/>
380	Alternative Service	<input type="checkbox"/>	<input type="checkbox"/>
402	Payment Required	<input type="checkbox"/>	<input type="checkbox"/>
403	Forbidden	<input type="checkbox"/>	<input type="checkbox"/>
404	Not Found	<input type="checkbox"/>	<input type="checkbox"/>
405	Method Not Allowed	<input type="checkbox"/>	<input type="checkbox"/>
406	Not Acceptable	<input type="checkbox"/>	<input type="checkbox"/>
408	Request Timeout	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
410	Gone	<input type="checkbox"/>	<input type="checkbox"/>
413	Request Entity Too Large	<input type="checkbox"/>	<input type="checkbox"/>
414	Request-URI Too Long	<input type="checkbox"/>	<input type="checkbox"/>
415	Unsupported Media Type	<input type="checkbox"/>	<input type="checkbox"/>
416	Unsupported URI Scheme	<input type="checkbox"/>	<input type="checkbox"/>
420	Bad Extension	<input type="checkbox"/>	<input type="checkbox"/>

OK Cancel

VOIP -> Media:

For the test was used in the dialog Gateway/Trunks a Media Profile named Orange to support media protocol *RTP only*.

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

Sip Server Settings **Port and Signaling Settings** **Manipulation and Routing** **Error Codes** **Media**

☐ Allow multiple media lines for the same media type

LAN/WAN Media Configuration

Media profile: igw_features_lan

Media Profiles

Name	Media protocol	SRTP crypto context negotiation	Mark SRTP Call-leg as Secure	Single m-line SRTP
default	Strict Pass-Thru	none		
igw_features_lan	Strict Pass-Thru	none		
Orange	RTP only	none		

Buttons: Add, Edit, Delete

RTP

RTCP interval (ms): 5000

☐ RTP protection

☐ Jitter buffer

JB minimum delay (ms): 20

JB maximum delay (ms): 150

JB number of buffers: 12

Implementation: Fixed

Packetization time (ms): 20

Dtmf Forward Twist (dB): 8

Dtmf Reverse Twist (dB): 4

Dtmf Hits to Begin: 2

Dtmf Hits to End: 3

Minimum Dtmf Duration (ms): 80

☒ Enable RFC 2833 support

☐ Cancel DTMF transmission on reinvite

☐ Send DTMF end using ptime

☐ Use Restrict V29 FAX Frequency

Buttons: OK, Cancel

In the used Media Profile *Orange* must be configured the settings below to meet Orange requirements.

Media Profile

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

General

Name

Media protocol

☐ SDP Compatibility Mode

SRTP configuration

SRTP crypto context negotiation ☐ MIKEY ☐ SDES

☐ Mark SRTP Call-leg as Secure

Codec configuration

☐ Allow unconfigured codecs

☐ Enforce codec priority in profile

☒ Send Telephony Event in Invite without SDP

☐ Use payload type 101 for telephony event/8000

Codec

Priority	Codec	Packetization interval
1	G711A 8 kHz - 64 kbps	20

Codec G711A must be configured here to restrict OpenScape Branch supporting this one codec only.

Features:

Features?

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

Features Available in Normal Mode and Survivability Mode
?

<input checked="" type="checkbox"/>	Enable gateways/trunks	Configure
Sip Service Provider profiles		Configure
<input type="checkbox"/>	Enable auto attendant	Configure
<input checked="" type="checkbox"/>	Enable Voice Mail Service	Configure
<input type="checkbox"/>	Enable phone software management	Configure
<input checked="" type="checkbox"/>	Enable Media Server / Streaming	Configure
<input checked="" type="checkbox"/>	Enable LAN-WAN media interwork	Configure
<input checked="" type="checkbox"/>	Enable Codec Support for transcoding	Configure
<input type="checkbox"/>	Enable Backup Link Client ▼	Configure
Emergency calling		Configure

Features Available in Survivability Mode Only
?

	Multi-line Hunt Groups	Configure
	Call Forwarding	Configure
<input type="checkbox"/>	Enable Call Detail Records	Configure
<input checked="" type="checkbox"/>	Enable Music On Hold for Gateways ▼	
<input type="checkbox"/>	System calling number suppression access code 	

[OK](#)
[Cancel](#)

Features -> Enable gateways/trunks:

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

DNS dynamic refresh interval (min) 60

☒ Route to R-URI domain

Add Edit Delete

Row	Signaling address type	Remote URL	Port	Interface	Transport	Mapped port	Routing prefix	Gateway / Trunk type	Functional type	Trunk profile	Output digit strip	Output digit add	Priority
1	IP address or FQDN	172.22.246.33	5060	WAN	UDP	21000	%	SIP Trunk	All Modes Egress/Ingress	Orange	0		1
2	IP address or FQDN	172.22.246.73	5060	WAN	UDP	21001	%	SIP Trunk	All Modes Egress/Ingress	Orange	0		2

In this configuration the nominal Orange SBC 172.22.246.33 has priority 1 and the second Orange SBC 172.22.246.73 has priority 2.

In the *INVITE no reply timeout - Normal Mode / Survivable Mode (sec)* fields are specified 18 seconds. This means that a not replied Invite to the nominal Orange SBC is resend after 18 seconds to the backup Orange SBC.

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

General

Signaling address type: IP address or FQDN

Remote URL: 172.22.246.33

Port: 5060

Interface: WAN

Transport: UDP

Mapped port: 21000

Routing prefix: %

Gateway / Trunk type: SIP Trunk

Functional type: All Modes Egress/Ingress

Trunk profile: Orange

Output digit strip: 0

Output digit add:

Priority: 1

☐ Operational Mode in OPTIONS Response

Signaling

INVITE no answer timeout - Normal Mode (sec): 360

INVITE no answer timeout - Survivable Mode (sec): 180

INVITE no reply timeout - Normal Mode (sec): 18

INVITE no reply timeout - Survivable Mode (sec): 18

Digest Authentication?

☐ Digest authentication supported

Digest authentication realm

Digest authentication user ID

Digest authentication password

TLS?

TLS mode

Certificate profile

☐ TLS keep-alive

Keep-alive interval (seconds)

Keep-alive timeout (seconds)

Media Configuration?

Media profile

Media realm subnet IP address

Media realm subnet mask

Anchoring media

☐ Force media anchoring on transcoding

☐ Record calls from this Gateway/Trunk

Outbound Proxy Configuration?

Outbound Proxy

Outbound Proxy Port

Registrar Server Configuration?

Registrar Server

Registrar Server Port

Miscellaneous?

☐ Open external firewall pinhole

OK

Cancel

Features -> Sip Service Provider profiles:

SIP Service Provider Profile

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

General

Name: Orange Default SSP profile: Orange

☐ Allow sending of insecure Referred-By header
 ☒ Send authentication number in Diversion header

☐ Send P-Preferred-Identity rather than P-Asserted-Identity
 ☐ Send authentication number in P-Asserted-Identity header

☐ Do not send Diversion header
 ☐ Send authentication number in From header

☐ Send URI in telephone-subscriber format
 ☐ Include restricted numbers in From header

☐ Use SIP Service Address for all identity headers

SIP service address: Privacy support: Full

Home DN

☐ Mandatory default home DN
 ☐ Mandatory default home DN - Normal Mode

Default home DN:

SIP User Agent

SIP User Agent towards SSP: Add or Replace SIP User Agent: OpenScape-Branch-V9R4

Registration

☐ Registration required

Registration interval (sec): 3600

Business Identity

☐ Business identity required

Business identity DN:

Outgoing SIP manipulation

☐ Insert anonymous caller ID for blocked Caller-ID

Manipulation

Incoming SIP manipulation

Calling Party Number: From header user and display

Flags

☐ FQDN in TO header to SSP
☐ REFER supported by SSP
☐ FQDN in Request-URI to SSP
☐ Use To DN to populate the RURI
☐ Request-URI user in TO header to SSP
☐ Allow SDP changes from SSP without session version update
☐ Do not send INVITE with sendonly media attribute
☐ Do not send INVITE with inactive media attribute
☐ Do not send INVITE with video media line
☒ Do not send Invite without SDP
☐ Do not send Re-Invite when no media type change
☐ Do not send Re-Invite
☐ Remove Silence Suppression parameter from SDP
☒ Enable local MOH in Survivable Mode
☐ Force direction attribute to sendrcv

TLS

TLS Signaling: Pass-Thru

Sip Connect

☐ Use tel URI
☐ Send user=phone in SIP URI
☐ Registration mode

OK Cancel

In the *SIP User Agent towards SSP* field must be configured the OS Branch version as string to meet an Orange requirement.

Features -> VoiceMail Service:

Here should be configured the OS Branch internal VoiceMail Service in case OS Branch is in Survival Mode having to connection to the Voice Mail server in the head quarter.

VoiceMail Service

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

General

VoiceMail Destination 33296082500 **VoiceMail Retrieve Destination (From Own Ext.)** 33296082501
VoiceMail Greeting vm-welcome.wav **VoiceMail Retrieve Prompt (From Own Ext.)** vm-welcome.wav
Maximum Number Of Messages 100 **VoiceMail Retrieve Destination (From Other Ext.)** 33296082502
Maximum Message Length (sec) 60 **VoiceMail Retrieve Prompt (From Other Ext.)** vm-welcome.wav
Silence Time Before Ending Recording (sec) 10 **Maximum Login Attempts Allowed** 3

VoiceMail Boxes

Add Delete

Search for In Search Show All

	Enabled	Name	MailBox Number	PIN	Announce CID	Send MWI	Email Address	Send Email	Attach Msg to Email
1	<input checked="" type="checkbox"/>	570	33296082570	****	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
2	<input checked="" type="checkbox"/>	569	33296082569	****	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>

VoiceMail Default Box 33296082570
VoiceMail Box Match Full

Features -> Media Server:

Media Server

Select OK to temporarily store changes. Make your changes permanent by selecting 'Apply Changes' on the General page.

General

Media server listen port 2427 ☐ Use system FQDN
Language en_us ☐ Enable whisper mode
 Advanced...

Conference

Number of conference/whisper cells 28 **Maximum conference time (sec)** 18000 ☐ Unlimited
Conference prefix access code 1234567890

Announcements

Number of announcement ports 12 **Maximum announcement time (sec)** 1800 ☐ Unlimited
☒ Stop announcement on DTMF

Streaming Source

☐ Enable Music On Hold Streaming
☐ Use HTTP proxy
 HTTP proxy FQDN or IP
 HTTP proxy port 8080
 Local FQDN or IP
 Streaming buffer size (sec) 30
 Streaming Source URL (first) Status: streaming disabled.
☐ Fallback to default MOH WAV file

Features -> Enable Codec Support for transcoding:

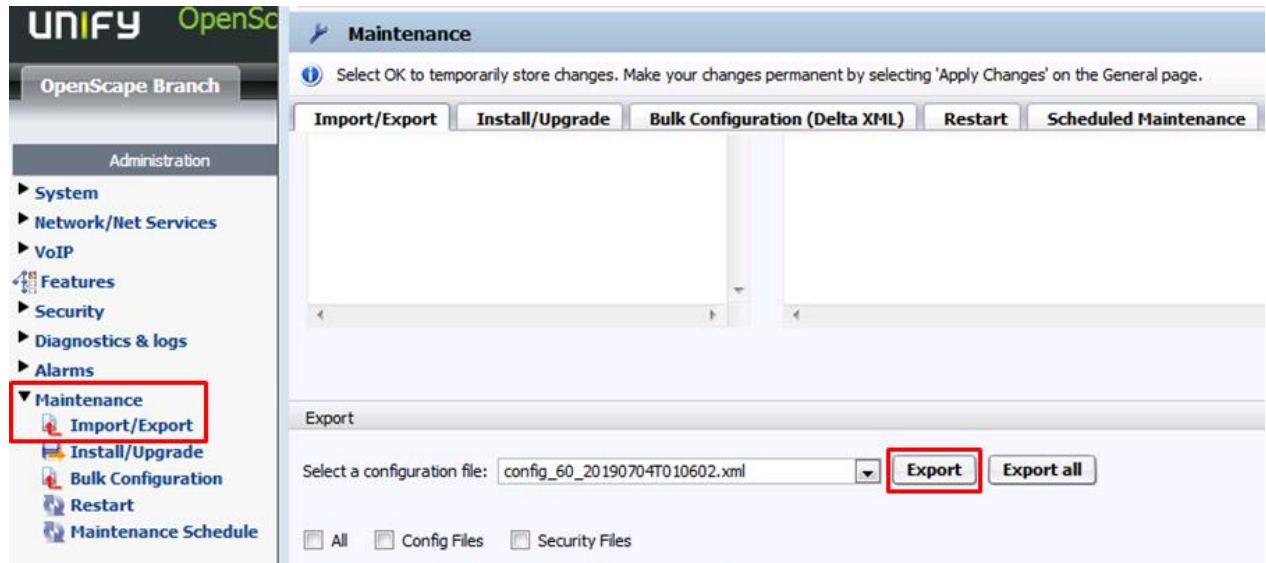
Here must be enabled codec G711A to be used in the Media Profile.

Codecs

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

Enable	Codecs
<input checked="" type="checkbox"/>	G711A 8 kHz - 64 kbps
<input checked="" type="checkbox"/>	G711U 8 kHz - 64 kbps
<input type="checkbox"/>	G722 8 kHz - 64 kbps
<input type="checkbox"/>	G7221 16 kHz - 24Kbps
<input type="checkbox"/>	G7221 16 kHz - 32Kbps
<input type="checkbox"/>	G7221C 32 kHz - 24Kbps
<input type="checkbox"/>	G7221C 32 kHz - 32Kbps
<input checked="" type="checkbox"/>	G729 8 kHz - 8 kbps
<input type="checkbox"/>	OPUS 48 kHz - Variable
<input type="checkbox"/>	iLBC 8 kHz - Variable
<input type="checkbox"/>	iSAC 16 kHz - Variable

To apply the behavior on OS Branch required by Orange a flag must be enabled in the configuration. To do so the configuration file must be exported and the *orangeCompliance* flag in section set to 1. Afterwards the modified configuration file must be imported again.



```
<extFwPinholeEnable/>
<trackCseqUpdatesEnable>1</trackCseqUpdatesEnable>
<orangeCompliance>1</orangeCompliance>
</voipData>
```

In case the exported configuration file does not show the *orangeCompliance* flag the auto refresh timer on GUI must be changed and applied by clicking on Apply Changes, and afterwards the export must be done again.

4. OpenScope Voice V9 R1

4.1. Architecture overview

Access to BT/BTIP is performed through 2 a-SBC (nominal and backup).

Only OpenScope Voice solution is connected via SIP trunks to Orange infrastructure for call distribution.

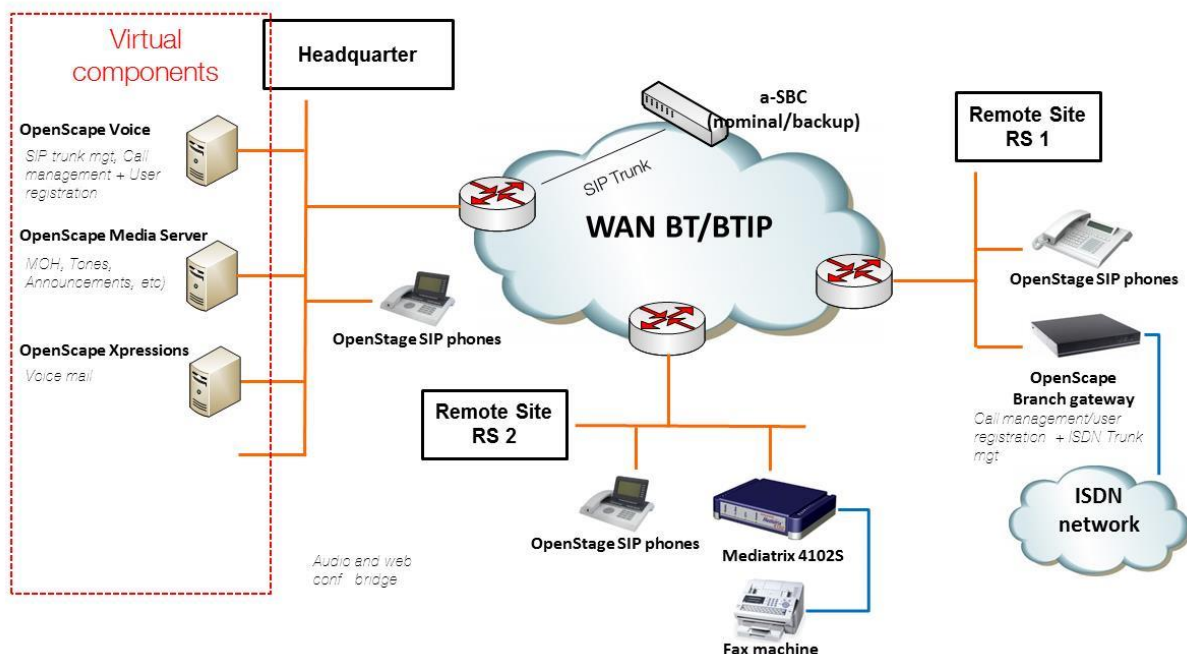
Customer shall pay attention to get proper IPBX licencing.

4.2. Distributed architecture (virtual + hardware) components

Main Architecture use cases

> Distributed Architecture

- 1 Headquarter based on the OpenScope Voice solution (with SIP trunk)
- 1 or several Remote Site(s) with an OpenScope Branch Gateway (without SIP trunk)
- 1 or several Remote Site(s) without OpenScope Branch Gateway (without SIP trunk)



4.3. Resiliency consideration

Co-located two-nodes cluster in active-backup mode.

Switchover between the active OSV node to the second node in case of a failure is done by a monitoring process named *Survival Authority* on an external server.

4.4. CAC & Codec consideration

G729 codec usage is not supported in the scope of Unify OpenScope Voice SIP trunking interoperability with Orange Business Services. Only G711a codec is supported.

Configuration of Internal CAC solution in Openscape Voice is required to restrict only G711A 20ms Voice codec. Refer to 3.8. Annex 1 « CAC management rules on OpenScope Voice system » for more information.

4.5. Parameters to be provided by customer to access BT/BTIP service

IP addresses marked in red have to be indicated by the Customer, depending on Customer architecture scenario.

Head Quarter (HQ) architecture	Level of Service	Customer IP addresses used by service	
		Nominal	Backup
Duplex integration	Local redundancy: two OSV servers in a redundant two-node cluster that executes in an active-standby mode and sharing the same IP@.	VIP@	N/A
Remote Site (RS) architecture	Level of Service		
		Nominal	Backup
Remote site with OpenScape Branch gateway	Local user survivability and trunk redundancy via PSTN only	N/A	N/A
Remote site without media gateway	No survivability, no trunk redundancy	N/A	N/A

4.6. Business Talk & BTIP certified versions

To get more details about the versions supported by Unify, Unify product Lifecycle notifications can be provided via Unify's standard communication channels (e.g. account teams, partner portal).

4.6.1. Unify OpenScape Voice IPBX

Unify OpenScape Business IPBX – software versions			
Reference product	Software version	Certification ✓: Certified NS: No supported	Restrictions/Comments
OpenScape Voice software	V9R1.21	✓	User-Agent header contains: OpenScape Voice V9R1

4.6.2. Unify OpenScape Voice endpoints and applications

Unify OpenScape Business IBX - Endpoints and applications					
Reference product		Software version NA: not applicable	Certification ✓: Certified NS: No supported	OpenScape Voice version	Restrictions/Comments
SIP endpoints	OpenStage SIP 15, 20, 40, 60, 80	V3 R5.3.0	✓	V9R1.21	
Unify Gateway	OpenScape Branch	V9 R1.01.00	✓	V9R1.21	
Voice Mail	OpenScape Xpressions	V7 R1.3.1	✓	V9R1.21	
Third party Gateway	Mediatix 4102S	Dgw 2.0.36.672	✓	V9R1.21	
Analog Fax	Connected to Mediatix 4102S	NA	✓	V9R1.21	Only T.38 protocol is supported for FAX.

4.7. SIP trunking configuration checklist

Refer to the document written by Unify, in 3.9. of this document.

The Unify document describes the Unify OpenScape Voice V9 and Mediatix 4102S Analog VoIP Adapter configuration to ensure the interoperability with Orange Business Services.

4.8. CAC management rules on OpenScape Voice system

CAC is controlled on OpenScape Voice IPBX for each geographical site.

CAC groups & CAC policies have to be defined.

A CAC Group represents the group of endpoints being served by each bandwidth-limited link which needs to be monitored.

A CAC Group will be defined based on IP subnets.

A CAC Policy is assigned to a CAC Group and represents the characteristics for the bandwidth-limited link being monitored.

Each CAC Policy contains:

- The CAC Group to which the policies applies. The CAC Policy applies to all calls to and from the CAC Group.
- the traffic type controlled by the CAC Policy: only Voice
- The bandwidth limit
- The permitted voice codecs : only G711a

Please find below the different CAC groups to be configured and their associated CAC policy.

CAC Group *Branch 1* based on Headquarter subnet

CAC Policy: From/To *Branch 1*, Voice, Bandwidth: xxxx Kbps, Allowed Codecs: G711a – In order to restrict G711a codec and apply some CAC for the Headquarter site

CAC Group *Branch 2* based on Remote Site 1 subnet

CAC Policy: From/To *Branch 2*, Voice, Bandwidth: yyyy Kbps, Allowed Codecs: G711a - In order to restrict G711a codec and apply some CAC for the Remote Site 1

CAC Group: *Branch 3* based on Remote Site 2 subnet

CAC Policy: From/To *Branch 3*, Voice, Bandwidth: zzzz Kbps, Allowed Codecs: G711a - In order to restrict G711a codec and apply some CAC for the Remote Site 2

CAC Group: *Branch 4* based on Orange SBC IP@

CAC Policy: From/To *Branch 4*, Voice, Allowed Codecs : G711a - In order to restrict G711a codec only
– It is not required to define Bandwidth or Number of Calls restriction for this CAC Group

4.9. Configuration of Orange Business Services SIP Trunk with OpenScape Voice V9



OpenScape Voice V9

Configuration of Orange Business
Services

SIP Trunk with OpenScape Voice V9

Version 1.2

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1. Goal of this document

This document describes the Unify OpenScape Voice V9 and Mediatrix 4102S Analog VoIP Adapter configuration to ensure the interoperability with Orange Business Services.

2. Certified Hardware and Software

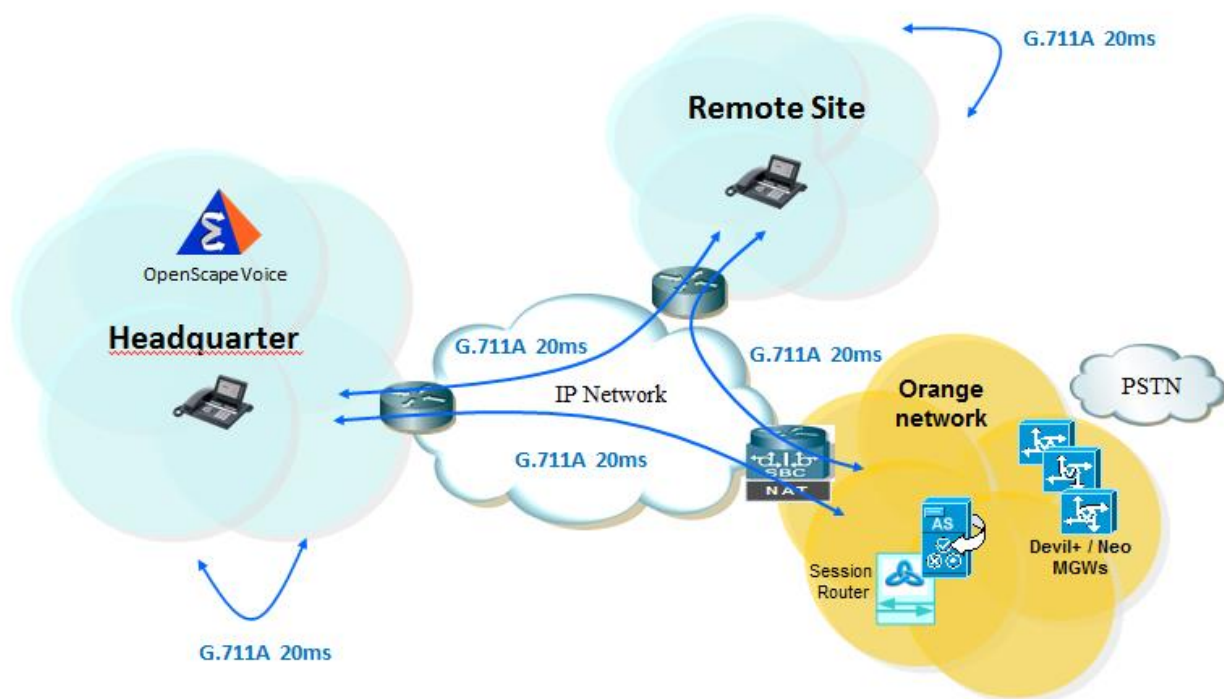
The table below show the certified firmware versions of the SIP devices to be compliant with Orange Business Services:

HW / SW	SW / Release
OpenScape Voice	V9 R0.12.4 and V9 R2.24.1
Mediatrix 4102S	Dgw 2.0.28.504 and Dgw 2.0.36.672
OpenScape Branch, native	V9 R1.01.00
OpenStage SIP phones	V3 R4.10.0 and V3 R5.6.0

3. Customer Network Topology

The figure below shows the connection between the Orange network, the customer's headquarter and a customer's remote site. The customer's headquarter and his remote sites are connected also via Orange network.

BT/BTIP Topology – G.711A offer



4. Configuration of SIP Devices

4.1. Configuration of OpenScape Voice

The following describes the configuration of OpenScape Voice for the Orange Business Services SIP Trunk compliancy. OpenScape Voice has been installed and configured based on the OpenScape Voice Installation and Configuration Guide. Additionally Orange SBC endpoints and endpoint profile configuration is required.

4.1.1. Orange SBC Endpoint Profile Configuration

The Orange SBC endpoints are configured in the Common Management Platform.

[susi] - [Orange] - Edit Endpoint Profile : EPP_SBC_Orange

Please enter the profile data.

General **Endpoints** **Services**

Name:

Remark:

Numbering Plan: ...

Management Information

Please enter the data for the following fields in the corresponding screens.

Class of Service: ...

Routing Area: ...

Calling Location: ...

Time Zone: ...

SIP Privacy Support: ▼

Failed Calls Intercept Treatment: ▼

Language: ▼



[susi] - [Orange] - Edit Endpoint Profile : EPP_SBC_Orange

Please enter the profile data.

General **Endpoints** **Services**

Endpoints currently assigned to this profile

Items/Page: 100 ▼ | All:3

	Name	Type	Registered	Primary
	EP_SBC1_Orange	Static	Yes	172.22.246.33
	EP_SBC2_Orange	Static	Yes	172.22.246.73

[susi] - [Orange] - Edit Endpoint Profile : EPP_SBC_Orange ?

Please enter the profile data.

General **Endpoints** **Services**

☐ Message Waiting: No

☒ Call Transfer: Yes

☐ Call Forward Invalid Destination: No

☐ Toll and Call Restrictions: No

☐ Park to Server: No

☐ CSTA Network Interface Device: No

☐ Enable Name Provider and Limited Call Control

What to do if Application fails to handle inbound calls:

Allow call to proceed as normal

4.1.2. Orange SBC Endpoint Configuration

The Orange SBC endpoints are configured in the Common Management Platform in the Business Group area:

The screenshot shows the UNIFY Common Management Platform interface. The left sidebar contains navigation options: Business Group, Quick Tasks, Business Group List, Orange, General, Profiles, Teams, Statistics, Display Number Modification, Branch Office List, Main Office, Members, Subscribers, and Endpoints. The main area displays the 'Endpoints' configuration for the 'Orange' business group. The table lists the following endpoints:

Name	Numbering Plan Name	Registration Type	Registration State	Operational State	Primary	Rema
EPDmy_00015	NP_Munich_00015	Dynamic	Not Registered	Normal		No
EP_SBC1_Orange	NP_Munich_Orange_SBC	Static	Registered	Normal	172.22.246.33	No
EP_SBC2_Orange	NP_Munich_Orange_SBC	Static	Registered	Normal	172.22.246.73	No
FB_00014	CNP_Orange_00014	Dynamic	Not Registered	Normal		No
osb1	NP_Munich_Orange_SBC	Static	Registered	Normal	192.168.174.130	No

The backup SBC is used in case the nominal SBC does not respond within the time specified in the *Outgoing Call Supervision Timer*, see below.

Below is shown the configuration of the nominal Orange SBC endpoint. A similar configuration has to be made for the backup Orange SBC. In the nominal SBC endpoint is configured an Outgoing Call Supervision Timer with its value of 18000 ms. The Outgoing Call Supervision Timer supervises the time between sending an INVITE request and receiving a provisional (non-100 Trying) or final response from the SBC. After expiration of this timer the backup SBC is called instead of the nominal SBC.

[susi] - [Orange] - [Main Office] - Edit Endpoint : EP_SBC1_Orange
General SIP Attributes Aliases Routes Accounting

Endpoint

Define the connection data of an endpoint, e.g. you may use this to add a gateway to a

Name: EP_SBC1_Orange

Remark:

Registered: ☒

Profile: EPP_SBC_Orange

Branch Office:

Associated Endpoint:

Default Home DN: 33296082568

Location Domain:

Endpoint Template:

Endpoint Type: Central SBC

Max number of users:

[susi] - [Orange] - [Main Office] - Edit Endpoint : EP_SBC1_Orange
General SIP Attributes Aliases Routes Accounting

Signaling Address Type: IP Address or FQDN

Endpoint Address: 172.22.246.33

Port: 5060

Transport protocol: UDP

Endpoint does not accept incoming TLS connections: ☐

Best Effort SRTP support: MIKEY,SDES

ANAT Support: Enabled

ICE Support: Enabled

DTLS Support: Enabled

Use Proxy/SBC Best-Effort SRTP settings for calls to subscribers: AS-SIP Interface ☐

Management Address:

Red Sky E911 Manager node: ☐

Outgoing Call Supervision Timer (ms): 18000

[susi] - [Orange] - [Main Office] - Edit Endpoint : EP_SBC1_Orange
General SIP Attributes Aliases Routes Accounting

Attributes

Attributes available for this SIP endpoint

Supports SIP UPDATE Method for Display Updates ☐

UPDATE for Confirmed Dialogs Supported ☒

Survivable Endpoint ☒

SIP Proxy ☐

Central SBC ☐

Route via Proxy ☐

Allow Proxy Bypass ☐

Public/Offnet Traffic ☐

Accept Billing Number ☐

Use Billing Number for Display Purposes ☐

Allow Sending of Insecure Referred-By Header ☐

Override IRM Codec Restriction ☐

[susi] - [Orange] - [Main Office] - Edit Endpoint : EP_SBC1_Orange
General SIP Attributes Aliases Routes Accounting

Aliases

You can associate here aliases with a SIP Endpoint.

Sel:0 | Items/Page: 100 | All: 1

Name
172.22.246.33

[susi] - [Orange] - [Main Office] - Edit Endpoint : EP_SBC1_Orange
General SIP Attributes Aliases Routes Accounting

Routes

This list shows the routes pointing to destinations of this numbering plan.

Items/Page: 100 | All: 1

Route ID	Destination	Delete	Insert	Nature of Address
10	D_SBC_Orange	0		NoUndefined

4.1.3. OpenScope Voice SIP Parameters for Orange SBC Endpoints

The following SIP attributes are configured in both Orange SBC endpoints on the Attributes tab shown above:

SIP attribute	Description	Value to set in the scope of OSV v9 certification
Supports SIP UPDATE Method for Display Updates	This attribute indicates whether the SIP Trunking endpoint supports receiving a SIP UPDATE method without SDP and with a P-Asserted-Identity (or P-Preferred-Identity) header field for display updates. This attribute is only applicable for SIP Trunking endpoints and it is automatically enabled for SIP Private Networking endpoints. In addition, this attribute only makes a difference if the SIP Trunking Endpoint Profile has Privacy Support set to Full or Full-Send.	OFF
UPDATE for Confirmed Dialogs Supported	If selected (enabled), update for confirmed dialogs is specified. (We assume this is linked to the session refresh...)	ON
Survivable Endpoint	If selected (enabled), the endpoint provides survivability in a branch office. Note : This attribute is required for the "Subscriber Rerouting" feature. Subscriber rerouting is only executed for subscribers whose Associated Endpoint has this attribute set; applicable only to SIP endpoint.	ON
SIP Proxy	If selected (enabled), the endpoint is a SIP proxy (e.g. Comdasys, RG2700); applicable only to SIP endpoint. This attribute is not applicable for SIP Private Networking.	OFF
Central SBC	This attribute is introduced from OSV V8 onwards for proxy/SBC endpoints and can be selected (enabled) only if the SIP Proxy attribute is enabled. Central SBC attribute and Allow Proxy Bypass attribute are mutually exclusive so if one is checked the other automatically is unchecked. If the attribute is selected (enabled) it indicates that the endpoint is a Central SBC and any subscriber associated to this endpoint is considered a remote user from the SIP-Registrar and is allowed to register only if the respective check box Registration via Central SBC Allowed is ticked. NOTICE: From V8 onwards in order to be able to control whether a subscriber is allowed or not to register via a Central SBC, the endpoint attribute Central SBC must be set for all endpoints that are central SBCs. If this precondition is met, whether a subscriber is allowed or not to register via the central SBC can be controlled via the subscriber checkbox Registration via Central SBC Allowed	

Route via Proxy	<p>If selected (enabled), the endpoint which must be a SIP proxy (i.e. the IP Proxy attribute must be selected) requests to be on the route when the OpenScape Voice is making an outbound call to a subscriber that has this endpoint as their Associated Endpoint.</p> <p>IMPORTANT: The parameter Srx/Sip/CentralSbcSupport related to Route via Proxy attribute is by default set to RtpTrue. If it is changed to RtpFalse the attribute under the Endpoint configuration will have no effect and routing problems may also be created.</p> <p>This attribute should always be set if the SIP Proxy attribute is set; applicable only to SIP endpoint.</p>	
Allow Proxy Bypass	Proxy Bypass is a system-wide OSV feature that is turned on per default. It is only used when deploying Type 2 or 5 branch offices. If selected (enabled), Proxy Bypass allows OpenScape Voice to bypass the recorded proxy in a contact if an INVITE request to the contact's recorded proxy does not receive a response within a specified time. This attribute is not applicable for SIP Private Networking.	
Public/Offnet Traffic	<p>If selected (activated), this attribute allows the subscriber marking all calls from/to an endpoint as external regardless whether the called or calling is intra-BG or not</p> <p>Note : This attribute is only configurable for SIP Trunking endpoints and it is automatically disabled for SIP Private Networking endpoint or not.</p>	OFF
Accept Billing Number	<p>If selected (activated), this attribute makes sure that calls get charged to the right call account.</p> <p>This attribute is achieved by transporting the user number in the additional SIP CDR header field</p>	OFF

Use Billing Number for Display Purposes	<p>This attribute can be activated only if the attribute Accept Billing Number is activated.</p> <p>The combination of both attributes is used on endpoints that send charge numbers for outbound calls or blind transfers and where the Administrator wishes to use this number for display purposes. Currently OpenScape Xpressions and OpenScape UC conference bridge send a charge number for outbound calls.</p> <p>The possible combination of these two attributes (Accept Billing Number and Use Billing Number for Display Purposes) have the following result:</p> <ul style="list-style-type: none"> – Not having either attribute set, means that the charge number in a received X-Siemens-CDR header is ignored. – Having only Accept Billing Number set but not Use Billing Number for Display Purposes, means that the charge number is used for authorization and authentication purposes and will show up in CDR records. If however the "charge number" and "From number" of the incoming INVITE request have different formats of the same subscriber number, the charge number is used as display number (e.g. when setting up Xpressions mailbox using extensions of subscribers). – Having both Accept Billing Number and Use Billing Number for Display Purposes set, means that the charge number is used for authorization and authentication purposes and will show up in CDR records and is used for display purposes as well. 	OFF
Allow Sending of Insecure Referred-By Header	If selected (activated), this attribute makes sure that calls get charged to the right call account. NOTICE: This attribute is achieved by transporting the user number in the additional SIP CDR header field "X-Siemens-CDR" for the endpoint used.	OFF
Override IRM Codec Restriction	It brings the potential for multicodec scenarios to set up an advanced codec restriction policy. If selected (enabled), the Override IRM Codec Restrictions attribute will be assigned to the selected subscriber.	OFF
Transfer HandOff	If selected (enabled), during transfer handoff, REFER and NOTIFY transactions will be passed transparently through OpenScape Voice. Used for TRANSFER_HANDOFF for Genesys	OFF
Send P-Preferred-Identity (PPI) rather than P-Asserted-Identity	If selected (enabled), a P-Preferred-Identity header field will be sent whenever a P-Asserted-Identity header field would normally be sent.	OFF

(PAI)	<p>This attribute is primarily intended for use when connecting to a SIP Service Provider that does not accept a P-Asserted-Identity SIP header field.</p> <p>NOTICE: This attribute can only be configurable for SIP Trunking endpoints. This attribute is automatically disabled for SIP Private Networking endpoints.</p> <p>The Diversion header field is used on the SIP Private Networking interface to transport the diverting/re-directing party number and the reason for the diversion.</p>	
Send domain name in From and P-Preferred-Identity headers	<p>If selected (enabled), the host part of the From and P-Preferred-Identity (or P-Asserted-Identity) SIP header fields will contain the domain name of the OpenScape Voice node. Note: If calling number presentation restrictions apply the host part of the From header field will contain 'anonymous.invalid'.</p> <p>Note:</p> <p>This attribute is primarily intended for use when connecting to a SIP Service Provider that does not accept dotted IP addresses in calling user identification SIP header fields.</p>	OFF
Send Redirect Number instead of calling number for redirected calls	<p>If selected (enabled), a call that is redirected to the endpoint will have the last redirecting or transferring party's identity in the From and P-Asserted-Identity (or P-Preferred-Identity) SIP header fields. This attribute is primarily intended for use when connecting to a SIP Service Provider that does not understand the Diversion header field.</p> <p>Note:</p> <p>This attribute can only be configured for SIP Trunking endpoints. This attribute is automatically disabled for SIP Private Networking endpoints.</p>	OFF
Do not send Diversion header	<p>If selected (enabled), a SIP Diversion header field will not be sent. This attribute is primarily intended for use when connecting to a SIP Service Provider that cannot accept a Diversion SIP header field. When this attribute is selected the 'Send forwarding number rather than calling number for forwarded calls' attribute will generally also be required.</p> <p>This attribute is normally used in conjunction with one of the following attributes:</p> <ul style="list-style-type: none"> Send redirecting number rather than calling number for redirected calls Send authentication number in P-Asserted-Identity header Send authentication number in From header <p>Note:</p> <p>This attribute can only be configured for SIP Trunking endpoints. This attribute is automatically disabled for SIP Private Networking endpoints</p>	OFF

Do not Send Invite without SDP	<p>If selected (enabled), SIP reINVITE requests that do not include SDP will not be sent during redirection procedures. OpenScape Voice will reuse the SDP previously received from the endpoint to send as an SDP offer to the new partner endpoint. When the SDP answer is received the new SDP will be sent in a reINVITE and the 200 OK answer will be consumed by OpenScape Voice.</p> <p>Note : This attribute is primarily intended for use when connecting to a SIP Service Provider that cannot accept a reINVITE request without SDP.</p>	<p>ON (with OSV RTP parameter set: Srx/Sip/sdpSessionMaintainer = RtpTrue)</p>
Send International Numbers in Global Number Format (GNF)	<p>If selected (enabled), the OpenScape Voice adds a '+' in front of all numbers which have NPI =PUBLIC and NOA = INTERNATIONAL. In order to do this, both Translation and the Display Number Modification tables MUST be provisioned to send numbers with NPI = PUBLIC and NOA= INTERNATIONAL to this endpoint.</p> <p>NOTICE: This attribute can be configured both for SIP Trunking and for SIP Private Networking endpoints.</p> <p>If the endpoint attribute Send International Numbers in Global Number Format (GNF) is set to true on a SIP Private Networking endpoint, then all public numbers are sent to this endpoint in GNF format.</p> <p>BT/BTIP Recommendation is to send E.164 (if GNF = E.164 -> On)</p> <p>Global numbering format i.e. starting with a plus sign followed by the complete international number e.g. +49891000100</p>	<p>ON</p>
Rerouting Direct Incoming Calls	<p>An OpenScape Voice subscriber that is forwarded to another user located at another OpenScape Voice or QSIG-compliant PINX will perform rerouting where the calling user's system is requested to perform the forwarding to the forwarded to party. If the rerouting request is rejected, OpenScape Voice shall perform forward-switching on behalf of the calling party.</p> <p>Subscriber rerouting may be triggered when a call destined for a remote subscriber - for example, in a branch office - is blocked by congestion or outage of the LAN/WAN link. When subscriber rerouting occurs, it may or may not lead to gateway rerouting. Beginning in V4, subscriber rerouting accommodates the needs of customers that need access to certain OpenScape Voice features - for example, group features that are needed by subscribers in a branch.</p>	<p>OFF</p>

	<p>Select this attribute to allow subscriber rerouting of incoming calls through the SIP endpoint (that are not forwarded). This attribute is not commonly used, and should not be selected for gateway endpoints.</p> <p>Check this checkbox to enable the rerouting of direct incoming calls through the PSTN. Values: Enabled/Disabled.</p> <p>Note:</p> <p>Although using Subscriber Rerouting through the PSTN is useful during WAN failures and CAC bandwidth restrictions, it can also lead to additional charges for the PSTN calls.</p>	
Rerouting Forwarded Calls	<p>If selected (enabled), this attribute allows subscriber rerouting of incoming calls through the SIP endpoint that are forwarded to a survivable SIP subscriber.</p> <p>Note : Although using Subscriber Rerouting through the PSTN is useful during WAN failures and CAC bandwidth restrictions, it can also lead to additional charges for the PSTN calls.</p>	ON
Enhanced Subscriber Rerouting	<p>This is the ability to reroute forwarded calls and hunt group calls.</p> <p>If selected (enabled), this attribute enables enhanced subscriber routing, which pertains to the ability to reroute forwarded calls and hunt group calls.</p>	ON
Automatic Collect Call Blocking Supported	<p>A collect call is a telephone call in which the calling party wants to place a call at the called party's expense and billed on their home telephone bill.</p> <p>When this option is enabled, calls from a PSTN Gateway (e.g. AudioCodes) to the subscriber result in additional SIP signaling (SIP INFO request) between OpenScape Voice and the PSTN Gateway.</p> <p>Note: The PSTN Gateway recognizes this additional SIP signaling as an indication that collect calls are not allowed to this subscriber and initiates special CAS/ISDN signaling procedures ('double answer') towards the PSTN central office. These CAS/ISDN signaling procedures result in the call being cleared by the central office if the incoming call is a collect call. If the incoming call is not a collect call then the call proceeds as normal.</p>	OFF
Send Authentication Number in P-		OFF

Asserted-Identity header	<p>The authentication number is the number that the PSTN provider expects in order to allow the call to proceed.</p> <p>It depends on the provider which Authentication Header is used to get the authentication information. Three different parameters can be set to give the provider the required diverting or transferring party to appear in one of the following headers:</p>	
Send Authentication Number in Diversion Header	<p>If this attribute is enabled, the Do Not Send Diversion Header attribute must be disabled.</p> <p>Note: This attribute only applies to SIP Trunking endpoints.</p>	<p>ON (required in the scope of Call transfer, to send to Orange the number of the site which performs the call transfer)</p>
Send Authentication Number in From Header	<p>The authentication number is the number that the PSTN provider expects in order to allow the call to proceed.</p> <p>It depends on the provider which Authentication Header is used to get the authentication information. Some providers only use the From header and therefore require the diverting or transferring party to appear in the From header. Others look in the P-Asserted-Identity for this information. Others again look in the Diversion header.</p> <p>Note: This attribute can only be configured for SIP Trunking endpoints. This attribute is automatically disabled for SIP Private Networking endpoints.</p> <p>SIPQ Truncated MIME</p> <p>The private network allows 8k registered user agents/clients to communicate with other users/resources in the private network connected via LAN/WAN using SIP protocol, or, for migrating customers, SIPQ protocol (i.e., SIP signaling with QSIG protocol embedded as a MIME for call control and supplementary service interoperability) for interworking with legacy QSIG private networks. SIP Trunking is used to interwork calls over the public network (IP or non-IP based) via "mediating GWs" (e.g., RG8700, SBC) which provide functions such as Network Address Translation (NAT), proxy services, media conversion.</p>	<p>OFF</p>
Use SIP Endpoint Default Home DN as Authentication Number	<p>If this attribute is set, the Default Home DN provisioned for the SIP endpoint is used to populate the authenticated number.</p>	<p>No impact on the SIP trunk - No Orange recommendation</p>

Use Subscriber Home DN as Authentication Number	<p>If this attribute is set, the OSV call originator or feature subscriber's Home DN is used to populate the authenticated number.</p> <p>NOTICE: The attributes Use SIP Endpoint Default Home DN as Authentication Number and Use Subscriber Home DN as Authentication Number are used to control what authentication identity is to be used when sending the INVITE requests towards a SIP endpoint. They are mutually exclusive. The default (unselected or unchecked) identifies that the existing OSV identity field selection logic applies.</p>	No impact on the SIP trunk - No Orange recommendation
Set NPI/TON to Unknown	<p>This endpoint attribute only applies to SIP-Q Private Networking endpoints. It is unchecked and grayed out for SIP Private Networking and SIP Trunking endpoints. When set, all presentation numbers sent to the SIP-Q PBX or gateway will have their numbering plan identifier and type of number reset to Unknown. This is necessary in case the SIP-Q network was set up using an unknown numbering plan. This attribute will be checked by SIPSM.</p>	No impact on the SIP trunk - No Orange recommendation
Include Restricted Numbers in From Header	<p>If the SIP Trunking Endpoint Profile's Privacy Support is set to Full (or Full-Send) and the SIP endpoint has the "Include Restricted Numbers in From Header" attribute, the OpenScape Voice SHALL NOT anonymize the Name and User portion of the From header field when the calling party identity is restricted.</p> <p>Note:</p> <p>This attribute is only be configurable for SIP Trunking endpoints and it is automatically disabled for SIP Private Networking endpoints. In addition, this attribute makes only a difference if the SIP Trunking Endpoint Profile has Privacy Support set to Full or Full-Send.</p>	OFF
SIPQ Truncated MIME	<p>The private network allows 8k registered user agents/clients to communicate with other users/resources in the private network connected via LAN/WAN using SIP protocol, or, for migrating customers, SIPQ protocol (i.e., SIP signaling with QSIG protocol embedded as a MIME for call control and supplementary service interoperability) for interworking with legacy QSIG private networks. SIP Trunking is used to interwork calls over the public network (IP or non-IP based) via "mediating GWs" (e.g., RG8700, SBC) which provide functions such as Network Address Translation (NAT), proxy services, media conversion.</p>	OFF
Enable Session Timing	<p>SIP SM provides the Session Timing endpoint attribute (Endpoint_Session_Timer) that will identify the Session Timing option per SIP-NNI/SIPQ endpoint.</p>	ON

When enabled, session timing will be possible on the SIP-NNI/SIPQ interface for all calls that exist on that link.

Enable/disable session timing on a specific endpoint:

If system wide session timing is disabled then the session timing on the endpoint depends on the value of the "Enable Session Timer" attribute:

> When the last attribute is true session timing is invoked

> When the last attribute is false session timing is not invoked.

If session timing is enabled the SIP INVITE request to NNI and SIP endpoints will include the tags to enable session timer for that call. OpenScape Voice and the endpoint will negotiate who will refresh the session during the call (usually OpenScape Voice ends up being the refresher).

The RTP parameter Srx/Sip/Session_Timer must be set to YES for this attribute to work. If it's set to NO, OpenScape Voice will never attempt to refresh the SIP sessions, even this attribute is enabled for a specific endpoint.

There will be no linkage between the switch wide session timing attribute (via RTP parameter) and the endpoint attribute to control session timing.

The following rules to enable/disable session timing will apply for various endpoints

Switch-wide optionRTP parameter	SIPNNI/SIPQ Endpoint attribute	Session timing on subscriber devices	Session timing on SIP-NNI/SIPQ Endpoint
Session Timing Enabled	Session Timing Disabled	Session Timing Enabled	Session Timing Disabled
	Session Timing Enabled	Session Timing Enabled	Session Timing Enabled
Session Timing Disabled	Session Timing Disabled	Session Timing Disabled	Session Timing Disabled
	Session Timing Enabled	Session Timing Disabled	Session Timing Enabled

Note:

	There is no linkage between the RTP parameter to control session timing and the endpoint attribute (applicable per endpoint). RTP parameter applies to subscribers only. Endpoint attribute applies per endpoint (SIP or SIPQ). Default value for the attributes is false which is applied during upgrades.	
Ignore Answer for Announcement		OFF
Enable TLS RFC5626 Ping	The attribute enables the RFC5626 connectivity check feature for outgoing TLS connections. The default value for this attribute is disabled/unchecked.	OFF
Enable TLS Dual Path Method	The attribute enables the 'Dual Path' method, in which a client to server TLS connection is used for all outgoing SIP requests. SIP responses are expected to be received on the same TLS connection as the SIP request that is responded to. The default value for this attribute is disabled/unchecked. IMPORTANT: The attributes Enable TLS RFC5626 Ping and Enable TLS Dual Path Method can be selected only for MTLS endpoints. To set an Endpoint as MTLS the Transport protocol value must be set to MTLS.	OFF
Reserve Attributes for Endpoints	The intention of the reserved attributes is to use them only in exceptional cases where the regular process of adding endpoint attributes can not be applied due to time constraints. Usage of these reserve attributes must be explicitly approved by development management before proceeding. There are three Reserve Attributes available: – Reserve 4 – Reserve 5 – Reserve 6 INFO: Once a Reserve Attribute has been used then it should be replaced with a proper named attribute as soon as practical.	OFF
Use extended max count for loop prevention	The attribute is used for Endpoints that common numbers terminate too and you want to allow common numbers to use a higher max CFLoop counter (i.e. RTP parameter Srx/Service/CFLoopMaxCountExtended) while maintaining a low max counter for the overall system (i.e. RTP Parameter Srx/Service/CFLoopMaxCount). When the attribute is set then the extended max counter has the value of RTP parameter Srx/Service/CFLoopMaxCountExtended.	No impact on the SIP trunk - No Orange recommendation

Do Not Audit Endpoint	<p>Support for OPTIONS within OpenScape Voice is limited to sending OPTIONS requests as an audit mechanism or as a heartbeat mechanism between a network elements. OpenScape Voice does not currently use OPTIONS to discover UA capabilities</p> <p>OpenScape Voice is able to process OPTIONS requests received from the Service Provider, according to RFC3261.</p> <p>By setting this attribute, the audit of that specific Endpoint can be turned off. The default value is enabled. INFO: The Do Not Audit Endpoint attribute should only be used for dummy Endpoints.</p>	OFF
Use Proxy/SBC ANAT settings for calls to subscribers	This attribute can be selected only for proxy endpoints ('SIP proxy' attribute set).	OFF
Support for Callback Path Reservation		No impact on the SIP trunk - No Orange recommendation
Send Progress to Stop Call Processing Supervision Timer	In case of an incoming call to OSV to send a 183 Session Progress message before 180 is send to prevent from timeout.	OFF
Limited PRACK Support	<p>The PRACK-Lite feature provides a limited form of RFC3262 PRACK within OSV, supporting PRACK on a half-call basis and only for SIP network-network interfaces:</p> <ul style="list-style-type: none"> – There is no end-to-end PRACK behavior - OSV as a B2BUA supports all requirements for PRACK as a SIP UAC or SIP UAS, i.e., with PRACKLite, 	ON

	<p>PRACK interworking is always performed on each interface independently.</p> <ul style="list-style-type: none"> – OSV does not support PRACK for SIP subscriber interfaces. A SIP Subscriber will not receive any indications that PRACK is used in the network. – CSTA, SIP-Q and OSV Services are not aware of any PRACK communication requirements – PRACK interworking is supported only if enabled on a per-SIP network-network interface basis. <p>Only if PRACK support is enabled will a SIP network-network interfaces receive indications from OSV that PRACK is supported or required.</p>	
Support Media Redirection		No impact on the SIP trunk - No Orange recommendation
Voice Mail Server	The attribute is used to indicate whether Message Waiting Indication messages (SIP NOTIFY messages) are allowed to be sent towards the Endpoint.	No impact on the SIP trunk - No Orange recommendation
Disable Long Call Audit	<p>When calling or called party has this attribute set to true, long call audit is disabled for this call. Default value is unchecked.</p> <p>If the attribute is checked then it will eliminate the impact of the long call duration timer on Hoot and ARD (Automatic Ring Down) lines used in trading solutions.</p> <p>It will also use RTP Srx/Sip/Reduced_Session_Timer_Value to define the minimum session refresh value for calls to/from the SIP endpoint with this attribute checked. The default value for Srx/Sip/Reduced_Session_Timer_Value is 90000 (90 seconds). The allowed range for the parameter is 60000-1800000.</p>	No impact on the SIP trunk - No Orange recommendation
Send/Receive Impact Level	<p>The attribute is used to control the 'Impact Level' notifications that the endpoint sends/receives to/from other endpoints. 'Impact Level' notifications inform the user when an incoming call originates from a lower security zone, or when an outgoing call terminates in a lower security zone. Possible values: Checked and Unchecked. Default value: unchecked (false).</p> <p>NOTICE: The attribute is applicable only for SIP-Q endpoints. In addition appropriate SIP settings must be configured in order for the attribute to be enabled.</p>	No impact on the SIP trunk - No Orange recommendation
Allow endpoint to Unregister Stale Registrations	When this endpoint attribute is set, unregistration messages initiated by the endpoint will not be challenged by OSV with digest authentication as long as the endpoint is recorded to have been on the path that was taken on the initial registration of the contact which expired at this endpoint.	No impact on the SIP trunk - No Orange recommendation
Enable Media Termination Point (MTP) Flow	This EP attribute must be set when interworking with Cisco™ endpoints that have the Media Termination Point (MTP) feature enabled.	No impact on the SIP trunk - No Orange recommendation

Video Call Allowed	<p>If the Video Call Allowed check mark is turned ON (default), then the OpenScape Voice will allow video calls across the server.</p> <p>If the Video Call Allowed check mark is turned OFF, then even if endpoint makes video calls, the port of all video m-lines will be set to zero by the OpenScape Voice server before routing the call to intended receiver.</p>	OFF
Trusted Subscriber	When this SIP subscriber endpoint attribute is set then OSV offers the capability to verify whether the IP address used by the SIP subscriber in the bottom Via header is trusted. The attribute is used to support backward compatibility of RTP flag Srx/Main/AuthTraverseViaHdrs with the RtpTrue setting.	No impact on the SIP trunk - No Orange recommendation
Enable Fast Connect	This Endpoint attribute is available only for SIP-Q endpoints and when checked it enables a fast connection for SIP-Q connections in direct call scenarios.	No impact on the SIP trunk - No Orange recommendation
Circuit Connector Appliance	This Endpoint is applicable only to non-subscriber endpoints and when checked OSV supports sending/receiving ansible client API json mime objects in the body of SIP messages over the SIP trunking interface.	No impact on the SIP trunk - No Orange recommendation
Add Route Header	This Endpoint SIP attribute is applicable only for SIP Trunking endpoints and, when checked, enables adding a Route Header to SIP requests other than the initial INVITE.	OFF
Disable SRTP	When the attribute is checked, then SRTP is not offered to the endpoint and removed when offered by the endpoint. An Encryption license is not checked out with this setting. When the attribute is unchecked SRTP is allowed to and from the endpoint, and If Encryption license checking is enabled in the OSV license file, an Encryption license is checked out when a subscriber registers a contact using TLS. By default the attribute is unchecked.	ON
Include OSV SIP User-Agent header field	It allows the SIP Provider to use this SIP attribute to be able to recognize a SIP soft switch and apply dynamically a profile to this SIP soft switch and monitor it.	ON
Accept x-channel header	When this attribute is checked, the Endpoint accepts and parses the SIP proprietary X-Channel header	OFF

4.1.4. OpenScope Voice Resilient Telco Platform (RTP) Parameters

The required RTP parameters are configured in the Common Management Platform in the Administration area:

UNIFY Common Management Platform Domain: system User: administrator@system

Configuration Maintenance User Management Fault Management Performance Management Accounting

OpenScope Voice OpenScope Branch OpenScope SBC RG8700 Unified Communications CMP Device Management

[susl] - RTP Management

On this page you can manage RTP Parameters

Search for in

Sel:0 | Items/Page: 200 | All:217

Name	Value	Default Value	Is Default
hiQ/OCMR/OfferedEventFilter	RtpTrue	RtpTrue	Yes
hiQ/CSTA/TelefonicaPASCODE	000000	"000000"	Yes
hiQ/CSTA/TelefonicaOutsideAccess	0	"0"	Yes
hiQ/CSTA/TelefonicaNPIDName		""	Yes
hiQ/CSTA/TelefonicaEID	000000	"000000"	Yes
hiQ/CSTA/TelefonicaEBG	RtpFalse	RtpFalse	Yes
hiQ/CSTA/TelefonicaBGName		""	Yes
hiQ/CSTA/TelefonicaAppID	osv-ebg	"osv-ebg"	Yes
hiQ/CSTA/SharedBridgedAppearanceEnable	RtpFalse	RtpFalse	Yes

Parameter Name	Value	Description
Srx/Sip/Min_Session_Timer_Value	7101000	OSV will send a re-INVITE every 59.175 minutes (session refresh timer)
Srx/Sip/Session_Timer	ON	
Srx/Sip/sdpSessionMaintainer	RtpTrue	this parameter forces OSV to send the o-line value unchanged in SDP as received from the phone when set to RtpTrue.
Srx/Sip/IncludeOsvUserAgentVersionInfo	RtpTrue	This enables the inclusion of the OSV version in the User-Agent header when set to RtpTrue.

The Destination Code to be routed over the SIP trunk to Orange is forwarded to a Destination which have the both Orange SBC endpoints with different priorities (ID) configured. The lower priority value (ID) specifies the SBC endpoint to be addressed first for an outgoing call over the SIP trunk. If unavailable, the second SBC endpoint is addressed.

[susi] - [Orange] - [CNP_Orange_00014] - Edit Destination: D_SBC_Orange

Destinations are used for routing a call to an endpoint.

General **Routes** **Route Lists** **Destination Codes**

Routes

Multiple routes can be used for prioritizing the routes to the gateways.

Add... **Edit...**

Sel:0 | Items/Page: 100 | All:2

<input type="checkbox"/>	ID ▲	Endpoint	Route Type	Delete	Insert	Nature of Address
<input type="checkbox"/>	10	EP_SBC1_Orange	SIP-Endpoint	0		Undefined
<input type="checkbox"/>	20	EP_SBC2_Orange	SIP-Endpoint	0		Undefined

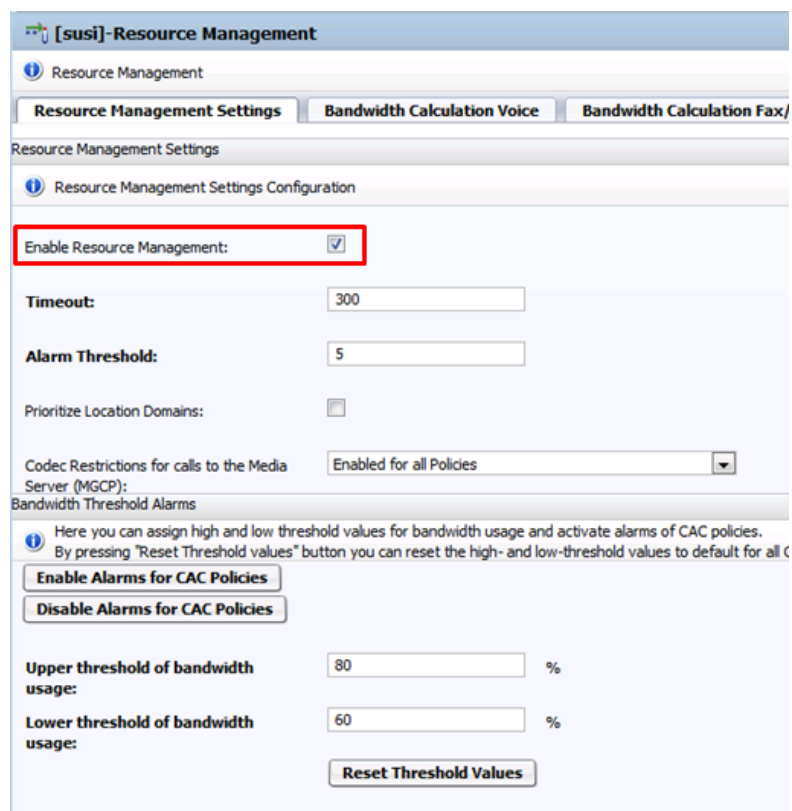
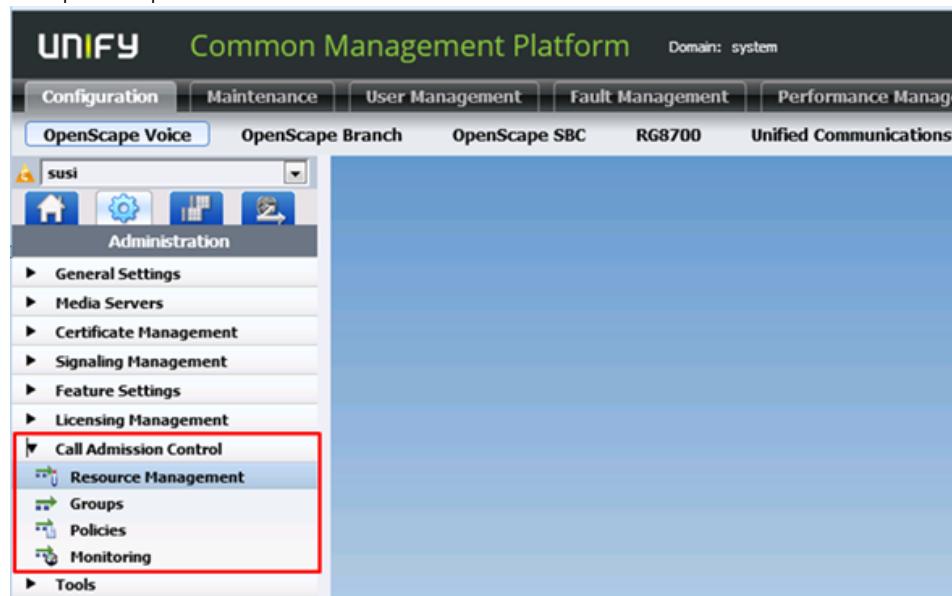
4.1.5. Call Admission Control Configuration

Call Admission Control (CAC) is used in OpenScape Voice to meet Orange's requirement allowing in SDP only one codec preventing a codec change without codec renegotiation.

CAC restrict beside specific allowed codecs bandwidth and/or number of calls to specific IPs, subnets, or directory numbers.

OpenScape Voice is located in the Headquarter monitoring connections to different sites via CAC.

CAC is enabled in the Common Application Platform connected to OpenScape Voice by selecting Configuration -> OpenScape Voice -> Administration -> Call Admission Control -> Resource Management, see figures below.



The exemplary CAC configuration below shows four CAC groups monitoring the connection of OpenScape Voice to different sites:

CAC Group **Headquarter**: Here is configured CAC monitoring connection to devices in the Headquarter specified by the Headquarter subnet as CAC Group Member.

CAC Group **Remote Site 1**: Here is configured CAC monitoring connection to devices in the Remote Site 1 specified by the Remote Site 1 subnet as CAC Group Member.

CAC Group **Remote Site 2**: Here is configured CAC monitoring connection to OpenScape Branch in the Remote Site 2 specified the OpenScape Branch IP address as CAC Group Member.

CAC Group **Orange SBC**: Here is configured CAC monitoring connection to the Orange SBC's specified by the SBC IP addresses as CAC Group Member.

The screenshot shows the UNIFY Common Management Platform interface. The top navigation bar includes tabs for Configuration, Maintenance, User Management, Fault Management, Performance Management, Accounting, and Device Management. The left sidebar shows a tree view with categories like Administration, General Settings, Media Servers, Certificate Management, Signaling Management, Feature Settings, Licensing Management, Call Admission Control, Resource Management, Groups, Policies, Monitoring, and Tools. The main content area is titled "[susi] - CAC Groups" and displays a list of existing Routing Call Admission Control Groups. The list has columns for CAC group name, Member Type, Parent CAC Group, Monitored Link Type, and Monitored Link Status. The groups listed are Headquarter (Subnets), Remote Site 1 (Subnets), Remote Site 2 (IPs), and Orange SBC (IPs). All Monitored Link Types are set to None.

CAC group name	Member Type	Parent CAC Group	Monitored Link Type	Monitored Link Status
Headquarter	Subnets		None	
Remote Site 1	Subnets		None	
Remote Site 2	IPs		None	
Orange SBC	IPs		None	

For each CAC Group is configured codec restriction to **G.711 A-law** and **Voice and Fax** as Traffic Type. If no restriction of bandwidth is required in a CAC Group its value should be set to the highest value possible.

The CAC Group configuration tabs are:

General tab: Here is configured the CAC Group name

Members tab: Here is configured the monitored subnet or IP addresses as Group type *Subnet* to be monitored by CAC

Policies tab: Here is configured the monitored **Traffic Type** Voice and Fax. Further setting is configured in subdialogs:

General tab: Here is configured the **Limit Type** Bandwidth and **Max Bandwidth**

Voice Codecs tab: Here is configured the allowed codec, e.g. G.711 A-law.

CAC Group Headquarter configuration:

[sus] - Edit CAC Group : Headquarter

CAC Group

General **Members** **Policies** **Group To Group Policies**

CAC group configuration

Please enter a CAC Group name without any special characters or blanks.

CAC group name:

Parent CAC Group Name:

Backup Selection Parameters

The fields below allow enabling a backup access link for this CAC group.

Enable Backup Access Link: ☐

Access Link type:

Access Router IP Address:

Primary Access Link's Interface Name:

Primary Access Link Status:

Business Group

Here you can assign an associated Business Group and Branch Office.

Business Group: ...

Branch Office: ...

[sus] - Edit CAC Group : Headquarter

CAC Group

General **Members** **Policies** **Group To Group Policies**

CAC group configuration

Group Type:

CAC group Member(s) List

Use the buttons to add or remove Members from the Group.
The Group can only contain Members of the type you have selected above.

Sel:0 | Items/Page: 100 | All:1

	CAC Group Members
<input type="checkbox"/>	192.168.174.0/25

[sus] - Edit CAC Group : Headquarter

CAC Group

General **Members** **Policies** **Group To Group Policies**

Sel:0 | Items/Page: 100 | All:1

	Traffic Type	Limit Type
<input type="checkbox"/>	Voice and Fax	Bandwidth

[sus] - Edit CAC Group : Headquarter

CAC Group

General **Members** **Policies** **Group To Group Policies**

Sel:0 | Items/Page: 100 | All:0

	Policy Name	Group A	Group B	Traffic Type
--	-------------	---------	---------	--------------

Adding or opening the **Traffic Type** entry on the Policies tab the **Limit Type** and **Max Bandwidth** can be configured:

[susi] - Edit Headquarter_1

Use this section to specify and configure the available policies for this CAC Group.

General **Voice Codecs** **Video Codecs**

Policies

Please select the Traffic Type. Depending on your selection you will have to either specify

Voice: ☒

Fax: ☒

Video: ☐

Policy configuration

In this section the specified policy can be activated and configured.

ASAC: ☐

Directionalization: ☐

Limit Type: Bandwidth

Max number of incoming calls: Bandwidth

Max number of outgoing calls: Number of Calls

Max number of calls: Bandwidth and Number of Calls

Backup Max number of calls:

Max incoming bandwidth (Units):

Max outgoing bandwidth (Units):

Max bandwidth (Units):

Max Bandwidth (kbps):

Backup Max Bandwidth (kbps):

Ignore calls to Media Server for announcements and tones: ☐

Allow answered calls when not enough bandwidth: ☐

Allow video call to proceed as an audio only call when not enough bandwidth: ☐

Bandwidth Threshold Alarms

In this section you can activate Alarms that are generated based on threshold values and

Enable Alarm generation: ☐

Use Default threshold values: ☐

Upper Threshold:

Lower Threshold:

On the Voice Codecs tab is configured to allow codec G.711 A-law only.

[susi] - Edit Headquarter_1

Use this section to specify and configure the available policies for this CAC Group.

General **Voice Codecs** Video Codecs

Allowed Voice Codecs

Allow all codecs (Unknown included): ☐

<input checked="" type="checkbox"/> G.711 A-law	<input type="checkbox"/> G.711 u-law
<input type="checkbox"/> G.722	<input type="checkbox"/> G.722.1 (24 kbps)
<input type="checkbox"/> G.722.1 (32 kbps)	<input type="checkbox"/> G.722.1 (48 kbps)
<input type="checkbox"/> G.723.1	<input type="checkbox"/> G.726 (16 kbps)
<input type="checkbox"/> G.726 (24 kbps)	<input type="checkbox"/> G.726 (32 kbps)
<input type="checkbox"/> G.726 (40 kbps)	<input type="checkbox"/> G.728
<input type="checkbox"/> G.729	<input type="checkbox"/> iLBC (internet Low Bit Rate Codec)
<input type="checkbox"/> AMR (Adaptive Multi-Rate codec)	<input type="checkbox"/> AMR-WB (Adaptive Multi-Rate Wideband codec)
<input type="checkbox"/> AAC-LC (Advanced Audio Coding - Low Complexity)	<input type="checkbox"/> OPUS

CAC Group Remote Site 1 configuration:

[susi]- Edit CAC Group : Remote Site 1

CAC Group

General **Members** **Policies** **Group To Group Policies**

CAC group configuration

Group Type: Subnets

CAC group Member(s) List

Use the buttons to add or remove Members from the Group.
The Group can only contain Members of the type you have selected above.

Sel:0 | Items/Page: 100 | All:1

CAC Group Members

<input type="checkbox"/>	<input type="checkbox"/>	192.168.152.32/28
--------------------------	--------------------------	-------------------

Here is configured the phone's subnet as Group Type Subnets.

CAC Group Remote Site 2 configuration:

[susí]- Edit CAC Group : Remote Site 2

CAC Group

General **Members** **Policies** **Group To Group Policies**

CAC group configuration

Group Type:

CAC group Member(s) List

Use the buttons to add or remove Members from the Group.
The Group can only contain Members of the type you have selected above.

Sel:0 | Items/Page: 100 | All:1

	CAC Group Members
<input type="checkbox"/>	192.168.174.130

Here is configured the OpenScape Branch IP address as Group Type IPs.

CAC Group Orange SBC configuration:

[susí]- Edit CAC Group : Orange SBC

CAC Group

General **Members** **Policies** **Group To Group Policies**

CAC group configuration

Group Type:

CAC group Member(s) List

Use the buttons to add or remove Members from the Group.
The Group can only contain Members of the type you have selected above.


Sel:0 | Items/Page: 100 | All:2

	CAC Group Members
<input type="checkbox"/>	172.22.246.33
<input type="checkbox"/>	172.22.246.73

Here are configured the IP addresses of both Orange SBC's as Group Type IPs.

4.2. Configuration of Mediatrix 4102S Analog VoIP Adapter

The Mediatrix 4102S Analog VoIP Adapter is used to connect a fax machine to VoIP.



■ System
■ Network
■ POTS
■ SIP
■ Media

Codecs
Security
RTP Statistics
Misc

➤ **Codecs**

Select Endpoint: Phone-Fax1 ▼

Codec	Endpoint Specific	Voice	Data	Advanced
G.711 a-Law	Yes ▼	Enable ▼	Enable ▼	Edit
G.711 u-Law	Yes ▼	Enable ▼	Enable ▼	Edit
G.726 16Kbps	No ▼	Disable ▼		Edit
G.726 24Kbps	No ▼	Disable ▼		Edit
G.726 32Kbps	No ▼	Disable ▼	Disable ▼	Edit
G.726 40Kbps	No ▼	Disable ▼	Disable ▼	Edit
G.729	Yes ▼	Disable ▼		Edit
T.38	Yes ▼		Enable ▼	Edit
Clear Mode	No ▼	Disable ▼	Disable ▼	Edit
Clear Channel	No ▼	Disable ▼	Disable ▼	Edit
X CCD	No ▼	Disable ▼	Disable ▼	Edit

Generic Voice Activity Detection (VAD)	
Endpoint Specific:	Yes ▼
Enable (G.711 and G.726):	Disable ▼



System	Network	POTS	SIP	Media
Codecs	Security	RTP Statistics	Misc	

Codecs

Select Endpoint: Phone-Fax1

Select Codec: G.711 a-Law

G.711 a-Law	
Endpoint Specific:	Yes
Voice Transmission:	Enable
Voice Priority:	0
Data Transmission:	Enable
Data Priority:	0
Minimum Packetization Time:	20 ms
Maximum Packetization Time:	20 ms

The Redundancy Level was set to 1 for the T.38 codec:



System	Network	POTS	SIP	Media
Codecs	Security	RTP Statistics	Misc	

Codecs

Select Endpoint: Phone-Fax1

Select Codec: T.38

T.38	
Endpoint Specific:	Yes
Enable:	Enable
Priority:	10
Redundancy Level:	1
Detection Threshold:	Default

