Sonus SBC 5.1.1R0 IOT NICE SIP Recording Application **Notes**

Table of Contents

- Document Overview
- Introduction
 - Audience
 - Requirements
 - Reference Configuration
 - Support
- Phase I Configure the SIPREC server: NICE Recorder
 - 1. NICE Components
 - 2. Configuration of NICE Recorder
 - 3. Configuration of NICE GUI
- Phase II Configure Sonus SBC and PSX

 - PSX/EPX Configuration
 SBC Basic Configuration
- Phase III Inter op Testing
- Test Results
- Conclusion

Document Overview

These Application Notes describe the configuration steps required for Sonus Session Border Controller (SBC) to interoperate with the SIP recording server (NICE server) using SIP trunks. Sonus SBC is a robust solution that integrates security, call control, Quality of Service, advanced media services and switching, all within a compact platform. The SBC functionality is compliance tested utilizing a SIP trunk to NICE recorder.

The objective of this document is to describe the procedure to be followed during IOT of SBC with NICE recorder. This includes identifying the test environment, tools required for testing, network topology, test points, risks involved in testing and scope of the testing.

- For additional information on NICE recorder, visit <u>http://www.nice.com/interaction-recording</u>
- · For additional information on Sonus SBC, visit http://sonus.net.

Introduction

The interoperability compliance testing focuses on verifying inbound and outbound call flows between Sonus SBC and the NICE recorder using TCP.

Audience

This is a technical document intended for telecommunication engineers with the purpose of configuring both the Sonus SBC and the third-party product. Navigating the third-party as well as the Sonus SBC Command Line Interface (CLI) is required. Understanding the basic concepts of TCP /UDP, IP/Routing and SIP/RTP are also required to complete the configuration and any necessary troubleshooting.

Session recording is a capability which can be utilized for various purposes: to comply with regulation, to monitor quality of service of representatives and to store call information for quality analysis. Sonus SBC currently supports proprietary SIP recording interfaces like NICE and MCT. This feature aims to support IETF standard SIP recording interfaces, namely SIPREC (SIP recording).

As per SIPREC architecture, SBC acts as Session Recording Client (SRC) and acts as RTP translator. The NICE recorder acts as a Session Recording Server (SRS). As a SRC, SBC initiates SIP recording session (RS) towards Session Recording server (SRS).

Requirements

The following equipment and software are used for SIPREC configuration.

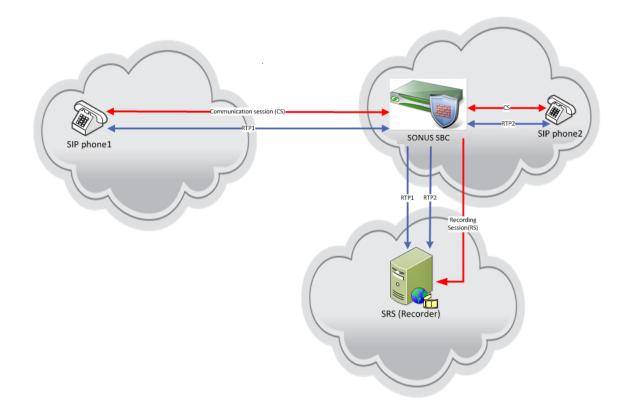
	Equipment	Software Version
Sonus Networks	Sonus SBC BMC BIOS ConnexIP OS SonusDB EMA SBX	V05.01.01-R000 V02.16.0 V02.6.0 V03.01.01-R000 V05.01.01-R000 V05.01.01-R000 V05.01.01-R000
Third-party Equipment	NICE	NICE recorder 4.1.47

Table 1: Software Information

Reference Configuration

The following reference configuration shows connectivity between the NICE recorder and the Sonus SBC.

Figure 1: Reference Configuration



Support

For any questions regarding this document or the content herein, please contact your maintenance and support provider.

Phase I - Configure the SIPREC server: NICE Recorder

This section provides a look at the NICE recorder configuration used during compliance testing. The NICE recorder is typically configured for customers by NICE. The screen shots and partial configuration shown below, supplied by NICE, are provided only for reference.

1. NICE Components

This section describes NICE components.

• **CAPIC (CAPI Gate Interaction Correlator)**: A NICE component that correlates and combines the data of calls from different switches. The CAPIC is located on the same machine as the Interactions Center.

• **NICE Interactions Center**: The NICE Interactions Center receives the call status, monitors call events, and stores them in its database for other system functions such as queries, reports, etc. and uses them when interaction-based recordings are implemented to determine whether to record a call.

• **NICE VoIP Logger**: A Logger that was set up for Active Recording and is used in an Active VoIP Recording environment. The NICE VoIP recording solution enables customers to effectively capture, evaluate, analyze and improve multimedia interactions taking place on an IP network. It provides VoIP recording solutions to customers that are deploying IP telephony networks, enabling them to enhance customer experience management over converging networks. Once the VoIP audio is recorded, it can be saved, archived, queried, and played back as easily as analog or digital recorded audio.

• Voice Recording SIP Proxy (VRSP): The VRSP functions as a SIP Proxy. It is used to set up SIP-based calls between the SBC and the NICE VoIP Logger. It is recommended to deploy VRSP redundancy in order to guarantee recording.

All configuration of VRSP, CAPIC, NICE Interaction center and CAPIC is done by NICE.

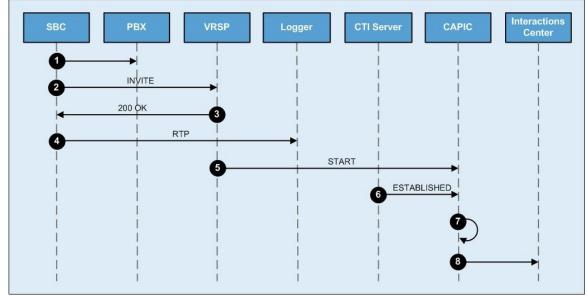


Figure 2: NICE Components

The interaction between the Sonus SBC and the NICE recorder is described below.

- The SBC receives an incoming call and queries PSX for route.
- The SBC sends an INVITE to the VRSP.
- The VRSP sends the SBC a 200 OK SIP response with the Logger's SDP.
- The SBC routes the RTP streams to the Logger and recording starts.
- The VRSP sends a START message to the CAPIC (via the CTI Driver). The START message contains the UDI and UCID for the call.
- The CTI server (AES/TSAPI) sends an ESTABLISHED event to the CAPIC (via the CTI Driver). The ESTABLISHED event contains the DN, UCID and other call details (e.g., Call ID, participants, etc.).
- The CAPIC correlates the calls received from the VRSP and CTI server. The correlation is performed based on the UCID in both calls.

• The CAPIC sends the Interactions Center the correlated interaction, including the relevant UDI and DN received from the VRSP and the CTI server.

Currently, NICE recorder supports three redundancy methods:

1. Active/Standby with failback – in this method, SRC should send recording session to the active SRS, when request fails (due to transport failure), it should send the recording session to the standby SRS.

- 2. Active/Standby in this method SRC should send the recording session to both of SRSs. Active SRS will accept the recording session while the standby SRS will reject the session (4xx error code).
- 3. Active/Standby with two open recording sessions in this mode, the SRC will send 2 recording sessions to active/standby SRSs. Both SRSs will accept the recording sessions. Active will respond with the actual SDP (a=recvonly) media descriptors while the standby SRS will respond with inactive SDP (a=inactive) media descriptors. When the active fails, the standby SRS can update SRC with any media updates.

SBC can use the SIP session timer method to detect that a SRS recording session failed. SRC may use non supported SIP methods to detect failures by accepting "Non implemented" response.

Currently, we support the Active/Standby with fail over model.

2. Configuration of NICE Recorder

For enabling NICE recorder for recording:

Step 1: STOP CTI services (yellow icon in the system tray with CTI letters > right-click > StopNICE Integrations Dispatch service).

Step 2: Remove all log file under D:\Program Files\NICE Systems\CTI\Log (skip the files, which are in use).

Step 3: START CTI services (yellow icon in the system tray with CTI letters > right-click > StopNICE Integrations Dispatch service).

After 3 minutes initiate a call now call should be recorded

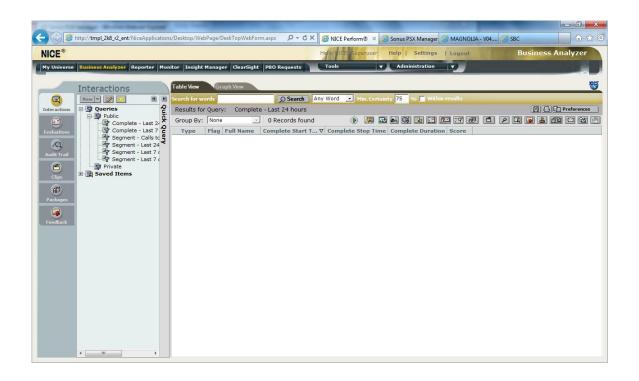
Ensure 'TCPConnectionClientCAPI.dll, TCPServerAPI.dll' files are present at D:\Program Files\NICE Systems\CTI\ in Nice server (present by default) for recording on TCP.

3. Configuration of NICE GUI

To play back recorded message.

- On a physical machine which resides in the same network as the VM open Internet Explorer with administrator rights.
- Navigate to the URL http://TMPL 2K8 R2 ENT/nice.
- Accept all installation prompts, you will get a login screen of the NICE system administrator.
- Login with user "nice" password "nicecti".
 Navigate to Business Analyzer menu.
- Open queries tree > Public > Last 24 hours.
 The recordings list will be shown on the right pane, to play a recording select it and press play button, when doing this for the very first time there may be a prompt to install player and codecs, click accept.

Figure 3: Configuration of NICE GUI



Phase II - Configure Sonus SBC and PSX

This section provides a look into the Sonus SBC configuration used during compliance testing. The Sonus SBC is typically configured for customers by Sonus Networks. The screen shots and partial configuration shown below, supplied by Sonus Networks, is provided only for reference. Other configurations are possible.

SIPREC features normally use PSX/EPSX for routing. We must make a separate TG with separate zone and sipSigport and attach that to egress IP interface group. This sip trunk is toward NICE recorder.

In PSX, we must configure RECORDER PROFILE and CALL RECORDING CRITERIA along with Basic call configuration. Below are the additional/ special configuration fields required apart from Basic PSX configuration.

PSX/EPX Configuration

Apart from Basic configuration, the following configuration is required.

1. **Recorder Profile**: Provide NICE recorder, primary and secondary IPV4 or IPV6 address and port (5060). Also, mention the NICE TG name. The name of NICE TG created in SBC and PSX should be the same, otherwise recording would not be initiated toward NICE. Transport type must be set to TCP.

Figure 4: Recorder Profile

PSX Manager V10.01.00A011 User: admin - North America	Host: 10.54.49.22 @ 4330 Master (SWe) - V10.01.00A019	View: Recorder Profile V Close All	Perspective: Full View ~
Menu			
📰 📰 🔢 🔛			
<configure> ~</configure>			
<admin> ~</admin>			
Recorder Profile ~			
Recorder Profile			
SQL Search Criteria (13 entries)			
Recorder Profile: *			
Search C More14			
Recorder Profile			
HW_RECORDER_EGRESS HW_RECORDER_INGRESS			
NWL_SIPREC_EGR	Recorder Profile: PER47639s REC IPV4		
NWL_SIPREC_ING			
PER476398_REC_IPV4	IP Trunk Group ID: PER47639s_NICE_TG		
REC_APARNA SHRIPAL_SIPREC	Primary Recorder		
SIPREC_EGR	IPv4 Address: 10 . 5	80 . 7	Port Number: 5050
SIPREC_ING			
TESLA_RP	O IPv6 Address: 0 : 0 : 0 :	0 : 0 : 0 : 0	Port Number: 0
Test	Secondary Recorder		
Test_egress WAGGA_RP	Secondary Recorder		

2. **Call Recording Criteria:** Provide call criteria for recording which you wish to record, like calling number, calle d number, ingress and egress TG, SBC name, the leg you want to record, either ingress or egress. Recorder type should be "SIPRec". Enable the criteria. When a call is made, it shall be recorded if it falls under criteria.

All recorder information is known to SBC via PSX/EPSX.

Figure 5: Call Recording Criteria

PSX Manager V10.01.00A011	Host 10.54.49.22 @ 4330			10.000	I Recording Crite		Close All	1							Perspective:	Coll Manua	
PSX Manager V10.01.00A011 User: admin - North America	Master (SWe) - V10.01.00A019			AIRM' CRI	In Recording Crite	nia Y	Close All								Perspective.	FUILVIEW	<u> </u>
Menu Configure>																	
<admin> ~</admin>																	
Call Recording Criteria ~																	
Call Recording Criteria SQL Search Criteria (8 entries)																	
Call Recording Criteria: *																	
Search 🖒 More#																	
	Call Recording Criteria:																
Call Recording Criteria	Recorder Id:	PER47639s_REC_	_IPV4														~
PER47639s_REC SHRI SIP REC CR	Ingress Trunk Group Id:	PER47639s_INT_1	rG														~
SIPREC_EGR_REC	Egress Trunk Group Id:	PER47639s_EXT_	TG														~
SIPREC_ING_REC TESLA_CRC	Calling Party Id:																
Tesrting Test_egr	Called Party Id:	9902875981															
WAGGA_CRC	Next Hop IPv4 Signaling Address:		10				54		· .		80		•		200		
	O Next Hop IPv6 Signaling Address:	0		0	:	0	:	0	: .	0	:	0	: [0	:	0	
	Previous Hop IPv4 Signaling Address:		10				54		•		80				200		
	O Previous Hop IPv6 Signaling Address:	0	:	0		0	:	0		0		0		0		0	
	GSX Name;	BF026-29															~
	Recording Type:	Ingress Leg															~
	Recording Stop Criteria:	0						÷		Manual				O Numi	ber Of Calls		_
	Recording Duration:	60															-
	Recorder Type:	SIPRec															-
							Criteri:	a Enabled									

SBC Basic Configuration

1. Configure Address Context and Logical Interface.

```
set addressContext default ipInterfaceGroup LIF1 ipInterface pkt_a_v4v6 ceName BF026 portName pkt0 ipAddress
10.7.17.51 prefix 16 altIpAddress fd00:10:6b21:2007::17:51 altPrefix 48
set addressContext default ipInterfaceGroup LIF1 ipInterface pkt_a_v4v6 mode inService state enabled
set addressContext default ipInterfaceGroup LIF2 ipInterface pkt_b_v4v6 ceName BF026 portName pkt1 ipAddress
10.7.18.60 prefix 16 altIpAddress fd00:10:6b21:2007::18:60 altPrefix 48
set addressContext default ipInterfaceGroup LIF2 ipInterface pkt_b_v4v6 mode inService state enabled
commit
```

2. Configure the Zone and SIP Signaling port.

set addressContext default zone ZONE1 sipSigPort 3 ipAddressV4 10.7.17.51 portNumber 5060 transportProtocolsAllowed sip-udp,sip-tcp ipAddressV6 fd00:10:6b21:2007::17:51 ipInterfaceGroupName LIF1 set addressContext default zone ZONE1 sipSigPort 3 mode inService state enabled set addressContext default zone ZONE2 sipSigPort 5 ipAddressV4 10.7.18.60 portNumber 5060 transportProtocolsAllowed sip-udp,sip-tcp ipAddressV6 fd00:10:6b21:2007::18:60 ipInterfaceGroupName LIF2 set addressContext default zone ZONE2 sipSigPort 5 mode inService state enabled commit

3. Configure a separate Zone and logical SIP Signalling Port for SIPRec.

```
set addressContext default zone NICE_ZONE id 10 sipSigPort 12 state enabled ipAddressV4 10.7.18.62 ipAddressV6 fd00:10:6b21:2007::18:62 portNumber 5060 transportProtocolsAllowed sip-udp,sip-tcp ipInterfaceGroupName LIF2 siprec enable commit
```

Configure IP Peer on PSX.

Product Configure LPD Peer con PSX: Product Configure LPD Addition Product Configure LPD Addition

- 4. Configure SIP Trunk Group.
 - 1. Use the following commands to configure the SIP Trunk Group on SBC.

```
set addressContext default zone ZONE1 sipTrunkGroup PER47639s_INT_TG media mediaIpInterfaceGroupName LIF1
set addressContext default zone ZONE1 sipTrunkGroup PER47639s_INT_TG ingressIpPrefix 10.54.80.200 32
set addressContext default zone ZONE1 sipTrunkGroup PER47639s_INT_TG state enabled mode inService
set addressContext default zone ZONE1 sipTrunkGroup PER47639s_INT_TG media recordable enable
set addressContext default zone ZONE2 sipTrunkGroup PER47639s_EXT_TG media mediaIpInterfaceGroupName LIF2
set addressContext default zone ZONE2 sipTrunkGroup PER47639s_EXT_TG ingressIpPrefix 10.54.80.200 32
set addressContext default zone ZONE2 sipTrunkGroup PER47639s_EXT_TG ingressIpPrefix 10.54.80.200 32
set addressContext default zone ZONE2 sipTrunkGroup PER47639s_EXT_TG state enabled mode inService
set addressContext default zone ZONE2 sipTrunkGroup PER47639s_EXT_TG media recordable enable
commit
```

2. Configure Trunk Group on PSX (Same names must be given to TG as above in PSX).

Figure 7: Configure Trunk Group on PSX

	nager V10.01.00A01 admin - North America	1	Host: 10.54.49.22 @ 4330 Master (SWe) - V10.01.00A019		View: Trunk Group	~
Menu			Trunk Group: PER47639s_INT_TG			
	11	🌽 😽	Gateway: BF026-29			
<configure></configure>		~	Description:			
<admin></admin>		~	Auto Recall Profile:	chlones		
Trunk Group		~				
	T 10		Call Processing Localization Variant:	Unknown		
SQL Search Criteria	Trunk Group		Calling Area:	<none></none>		
Trunk Group:	(152 chines)		Carrier:	91240		
Gateway: *			Carrier Selection Priority:	<none></none>		
Trunk Number: *				81 - Japan		
				•		
Sear	ch 🖒 More.	- H	DDI Range Profile:	<none></none>		
• •			Destination Switch Type:	Access		
Gateway	Trunk Group	Trunk Number	Direction:	Two Way		
AMLA	RHEL_SBX_EGTG	1	Element Routing Priority Profile:	IAPAN		
AMLA ANTHURIUM	RHEL_SBX_EGTG1 IPTG IN1					
ANTHURIUM	IPTG_IN2			PER47639s_FC_JAPAN_SBX		
ANTHURIUM	IPTG_IN3		IP Signaling Profile;	PER47639s_SBX_IAD		
ANTHURIUM APARNA-VSBCSYS	IPTG_IN4 APARNA EGR TG		LATA:	<none></none>		
APARNA-VSBCSYS	APARNA_ING_TG		Local Recursion Profile:	<none></none>		
APARNA-VSBCSYS	SIPREC_TG		Maximum Satellite Hons:	Three or More Satellite Hops		
AQUAMARINE AQUAMARINE	AQUA_TG_SIPI_EGR AQUA_TG_SIP_ING					
AUGUSTA	SBX638_SBX_EXT		Network Data Partition:	U		
AUGUSTA	SBX638_SBX_INT		Network Data Net:	0		
AUTOMATIONISBC AUTOMATIONISBC	HW_EGRESS_SIPREC HW INGRESS SIPRE		Next Hop Domain:	<none></none>		
AUTOMATIONISBC	HW_NWL_REFER_TG		Number Analysis Profile:	<none></none>		
AUTOMATIONISBC	NWL_TG_V4_CORE		Number Length Enforcement:	<none></none>		
AUTOMATIONISBC BF-HA	NWL_TG_V6_UE LSWUGW SBX INT					
BF026-29	PER47639s_EXT_TG		Originating Carrier;	<none></none>		
BF026-29	PER47639s_INT_TG		PPR Profile:	<none></none>		

3.Use the following commands to configure the SIP Trunk Group for NICE RECORDER on SBC.

set addressContext default zone NICE_ZONE sipTrunkGroup PER47639s_NICE_TG media mediaIpInterfaceGroupName LIF2 set addressContext default zone NICE_ZONE sipTrunkGroup PER47639s_NICE_TG ingressIpPrefix 10.54.80.7 32 set addressContext default zone NICE_ZONE sipTrunkGroup PER47639s_NICE_TG state enabled mode inService commit

4. Configure Trunk Group on PSX for NICE RECORDER (Same names must be given to TG as above in PSX).

Figure 8: .Configure Trunk Group on PSX for NICE RECORDER

	nager V10.01.00A0 admin - North America		Host: 10.54.49.22 @ 4330 Master (SWe) - V10.01.00A019		View: Trunk Group	~	Close All
Menu			Trunk Group: PER47639s_NICE_TO	3			
	1 PX		Gateway: BF026-29				
	= 18		Description:				
<configure></configure>		~					
<admin></admin>		~	Auto Recall Profile:	<none></none>			
Trunk Group		~	Call Processing Localization Variant:	Unknown			
	Trunk Group		Calling Area:	<none></none>			
SQL Search Criteria	(152 entries)						
Trunk Group: *			Carrier:	91240			
Gateway: *			Carrier Selection Priority:	<none></none>			
Trunk Number: *			Country:	81 - Japan			
Q Sean	ch 🖒 More	-124	DDI Range Profile:	<none></none>			
Cotan			Destination Switch Type:				
Gateway	Trunk Group	Trunk Number					
AMLA	RHEL SBX EGTG			Two Way			
AMLA	RHEL_SBX_EGTG1		Element Routing Priority Profile;	JAPAN			
NTHURIUM	IPTG_IN1		Feature Control Profile:	PER47639s_FC_JAPAN_SBX			
INTHURIUM	IPTG_IN2 IPTG IN3		IP Signaling Profile:	PER47639s_SBX_IAD			
ANTHURIUM	IPTG_IN4			<none></none>			
PARNA-VSBCSYS	APARNA_EGR_TG						
APARNA-VSBCSYS APARNA-VSBCSYS	APARNA_ING_TG SIPREC_TG		Local Recursion Profile:	<none></none>			
AQUAMARINE	AQUA_TG_SIPI_EGR		Maximum Satellite Hops:	Three or More Satellite Hops			
AQUAMARINE	AQUA_TG_SIP_ING		Network Data Partition:	0			
AUGUSTA AUGUSTA	SBX638_SBX_EXT SBX638_SBX_INT		Network Data Net:	0			
AUTOMATIONISBC	HW_EGRESS_SIPREC						
AUTOMATIONISBC	HW_INGRESS_SIPRE		Next Hop Domain:	<none></none>			
UTOMATIONISBC	HW_NWL_REFER_TG NWL_TG_V4_CORE		Number Analysis Profile:	<none></none>			
AUTOMATIONISBC	NWL_TG_V6_UE		Number Length Enforcement:	<none></none>			
BF-HA	LSWUGW_SBX_INT		Originating Carrier:	<none></none>			
F026-29 F026-29	PER47639s_EXT_TG PER47639s_INT_TG		PPR Profile:				
F026-29	PER47639s_NICE_TG						
8F19BF37	PSX_SBX_EXT		Pseudo Carrier:	<none></none>			
F 19BF 37 GSSBC	PSX_SBX_INT SBX_47529_IMS_TG		Remote Sip Peer Type:	None			
IGSSBC	SBX_47529_PEER_TG		Region:	<none></none>			
OUVARDIA	INGRESS_TG		Routing Criteria Profile:	<none></none>			
IUGATTI IUGATTI	48863ACCESS_STG 48863CORE_STG		SCP Business Service Group:				
BUGATTI	PCR7454_IND_SIP_E						
BUGATTI	PCR7454_IND_SIP_I		Signaling Profile:	PER47639s_SBX_NICE			
BYADGI BYADGI	TRUNK_4 TRUNK_4_EGR		Signaling Flag:	SIP-I			
BYADGI	TRUNK_4_ING		SIP Domain:	<none></none>			
CELOSIASBX	PERTRANSGW_SBX						

5. Configure IP Signalling Profile on PSX.

Figure 9: Configure IP Signalling Profile on PSX.

PSX Manager V10.01.00A011 User: admin - North America	Host: 10.54.49.22 @ 4330 Master (SWe) - V10.01.00A019	View: IP Signaling Profile	~	Close All		
	SIGNALING PROFILE: PER47639s_SBX_IAD					
📰 📰 🔢 🚰 👖	Do Not Include SS Attribute In Re-INVITE			Send E	mpty TCS	
Configure> ~	Don't Send REFER With IP			Send O	nly Preferred Codec	
Admin> ~	Don't Send REFER With TN			Send P	TIME In SDP	
Signaling Profile	End To End BYE			Send R	TCP Port In SDP	
IP Signaling Profile Search Criteria (84 entries)	End To End RE-INVITE			Session	n Timer Refresh Upda	le
ignaling Profile: •	End To End UPDATE			Set Acc	ept Header To Applica	tion SDP Only
🔍 Search 🖙 More 🛏	End To End PRACK			🗌 Set Olin	e Dash	
uniters Derfits	Enable Default PUI Procedures			Set Ses	sion Version Zero	
naing Profie	Enable Dial String Handling			🗌 Set Slin	e Dash	
EXT_IP_SIG NT_IP_SIG	Include G729 with G729A when offer PSP has G729A			Store P	Charging Function Ad	dr
i522_SBX_AS i522_SBX_IAD	Include IP Ports In FROM And TO Headers			Store P	-Charging Vector	
639s_S8X_AS 7639s_S8X_IAD	Include Reason Header			Store P	ath Header	
ANSGW_SBX_AS	Include SS Attribute In Initial Invite			Store S	ervice-Route Header	
ANSGW_SBX_IAD BX_AS	Include Transport Type In Contact Header			Suppre:	ss Min-SE if not receiv	ed
BX_IAD SBX_EGPROF	Insert Peer Address As Top Route Header			Termin:	al Portability Interworki	ng
S8X_EGPROF1 S8X_INPROF	Lockdown Preferred Codec			Send R	TCP BandWidth Info	
Y_CLEAR	Map Cause Location			🗌 Validate	Access Nw Info Head	ler
Y_PSP_SCTP Y_S8X_AS	Map SGD In P-Sig-Info Header			Use Ps	x Route for Registered	Invite
Y_S8X_JAD T_IPSP_EGR_ID	Map Suspend/Resume Event In P-Svc-Info Header			From H	eader Anonymisation	
T_IPSP_ING_ID 3 AS	Map UUI In P-Sig-Info Header					
3 JAD 66 JPSP_EXT	MIME Cause Precede Reason Header Cause					
66_IPSP_INT	Minimize Relaying Of Media Changes From Other Call Leg					
359_IPSP_SIPI_EGR 359_IPSP_SIP_ING	No Service Route Hdr For Emergency Registration					
370_IPSP_SIPI_EGR 370_IPSP_SIP_ING	Publish IP In Hold SDP					
513_IPSP_SIPI_EGR 513_IPSP_SIP_ING	Insert PAccess Network Info					
8_IPSP_EXT 8_IPSP_INT	Contact Transparency For Isfocus Media Tag					
66_Exit_UAC	Support S-CSCF Restoration Procedures					
866_Exit_UAS =_IPSP_SBX_3830_N	Insert UE Flow Info					
AS	Call Preservation Flags					
			10		-	
🗅 New 🎁 Open 📋 Delete			Save	× Cancel	📋 Delete	

Figure 10: Configure IP Signalling Profile on PSX.

PSX Manager V10.01.00A011 User, admin - North America	Host: 10.54.49.22 @ 4330 Master (SWe) - V10.01.00A019	View: IP Signaling Profile VIOSE All
	IP SIGNALING PROFILE: PER47639s_SBX_AS	
📰 🖃 🔢 🍋 🏁	Do Not Include SS Attribute In Re-INVITE	Send Empty TCS
Configure>	Don't Send REFER With IP	Send Only Preferred Codec
Admin>	Don't Send REFER With TN	Send PTIME In SDP
Signaling Profile	End To End BYE	
IP Signaling Profile		Send RTCP Port In SDP
L Search Criteria (84 entries) Signaling Profile: *	End To End RE-INVITE	Session Timer Refresh Update
	End To End UPDATE	Set Accept Header To Application SDP Only
Search 🖨 More🛏	End To End PRACK	Set Oline Dash
ignaling Profile	Enable Default PUI Procedures	Set Session Version Zero
7454_IND_SIP_INGRESS	Enable Dial String Handling	Set Sline Dash
4_EXT_IP_SIG 4_INT_IP_SIG	Include G729 with G729A when offer PSP has G7	29A Store P-Charging Function Addr
R35522_SBX_AS R35522_SBX_IAD	Include IP Ports In FROM And TO Headers	Store P-Charging Vector
R47639s_SBX_AS	Include Reason Header	Store Path Header
.47639s_SBX_IAD .TRANSGW_SBX_AS	Include SS Attribute In Initial Invite	Store Service-Route Header
ITRANSGW_SBX_IAD _SBX_AS	Include Transport Type In Contact Header	Suppress Min-SE if not received
K_SBX_IAD		— …
EL_SBX_EGPROF EL_SBX_EGPROF1	Insert Peer Address As Top Route Header	Terminal Portability Interworking
EL_SBX_INPROF NITY_CLEAR	Lockdown Preferred Codec	Send RTCP BandWidth Info
NITY_PSP_SCTP	Map Cause Location	Validate Access Nw Info Header
NITY_SBX_AS NITY_SBX_IAD	Map SGD In P-Sig-Info Header	Use Psx Route for Registered Invite
SVT_IPSP_EGR_ID SVT_IPSP_ING_ID	Map Suspend/Resume Event in P-Svc-Info Heade	er 🗌 From Header Anonymisation
153_AS	Map UUI In P-Sig-Info Header	
153_IAD 1766 IPSP EXT	MIME Cause Precede Reason Header Cause	
(1766_JPSP_JNT (44359_JPSP_SIPI_EGR	Minimize Relaying Of Media Changes From Other	Call Leg
44359_IPSP_SIP_ING	No Service Route Hdr For Emergency Registration	-
(44370_IPSP_SIPI_EGR (44370_IPSP_SIP_ING	Publish IP In Hold SDP	
53513_IPSP_SIPI_EGR 53513_IPSP_SIP_ING	Insert PAccess Network Info	
638_IPSP_EXT		
638_IPSP_INT _366_Exit_UAC	Contact Transparency For Isfocus Media Tag	
_366_Exit_UAS CF_IPSP_SBX_3830_N	Support S-CSCF Restoration Procedures	
PI_AS	Insert UE Flow Info	
I_IAD ST	Call Preservation Flags	
🗋 New 🎁 Open 📋 Delete		🔒 Save 🗶 Cancel 📋 Delete

6. Configure Packet Service Profile ID Group and PSP on PSX.

<configure> ~</configure>			
<admin> ~</admin>			
Packet Service Profile ID Group ~			
Packet Service Profile ID Group			
SQL Search Criteria (70 entries)	٦l		
Packet Service Profile ID Group: *			
Search 🖒 More –			
Packet Service Profile ID Group	Ш		
MRF_CDMA_SBX_47529_PSP ^	•		
MRF_IMS_SBX_47529_PSP	Ш		
OMR_SBX_50_PSP	Ш		
PCMU-A_G729A_OA	Ш		
PCMU_AUTO	Ш		
PCMU_G729A_OA	Ш		
PCMU_OA	Ш		
PCMU_PEM	Ш		
PCMU_T_OA	Ш	Packet Service Profile ID Group:	PER47639s_PSP_OUT_SBX
PCR4532_PSP_OUT_SBX	Ш	Desiret Ossilas Desfilas	
PCR4950_PSP	Ш	Packet Service Prolife.	PER47639s_PSP_OUT_SBX
PCR7454_IND_EGRESS	Ш	HPC Packet Service Profile:	<none></none>
PCR7454_IND_INGRESS	Ш		
PER35522_PSP_IN_SBX	Ш		
PER35522_PSP_OUT_SBX			
PER47639s_PSP_IN_SBX			
PER47639s_PSP_OUT_SBX			
PSPG_G711			

Figure 11: Configure Packet Service Profile ID Group on PSX

Figure 12: Configure Packet Service Profile ID Group on PSX

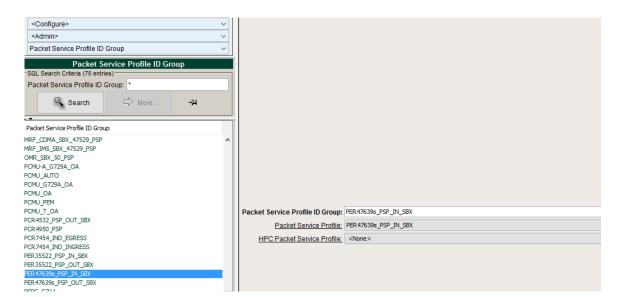


Figure 13: Configure PSP on PSX

PSX Manager V10.0 User: admin - North		<u>s</u>]	Host 10.54.49.22 @ 4330 Master (SWe) - V10.01.00A019	View: Packet Ser	vice Profile v Close	All		Perspective: Full View	N ~
Menu			Packet Service Profile:	PER47639s_PSP_IN_SBX					^
	11	P	Silence Factor:	40					÷.
	1.4		Voice Initial Playout Buffer Delay (ms):	10					÷
<configure></configure>		~	Type Of Service:						÷
<admin></admin>		~							÷
Packet Service Profile		~	AAL1 Payload Size:						
Packet Ser SQL Search Criteria (76 entries)	rvice Profile		Preferred RTP Payload Type For DTMF Relay:						~
Packet Service Profile: *			Media Packet COS:	0					
			Codec Entry Codec Entry: <none></none>						~
Search G	S More	-14	STRUCTURE CONTRACTOR						
• •					Add	Update			
Packet Service Profile				Codec Entry			Value		
EG_PSP		^	1			PER 47639s_G711U PER 47639s_G711A			
ENT_ACM_DEFAULT_PSP ENT_AVAYASM_DEFAULT_PSP			3			PER 476396_G722			
ENT_CUCM_DEFAULT_PSP			4			PER47639s_G723			
ENT_LYNCMS_PSP_TCP			5			PER 476394_6729 PER 476395_6726			
ENT_LYNCMS_PSP_TLS G729A_PCMU_OA									
G729A_RFC2833_OA									
ING_PSP KODI_ISUP_SIP_IW									
KPML_EGRESS_PSP									
KPML_GW_PSP KPML_INGRESS_PSP									
MRF_CDMA_S8X_47529_PSP					Del	ete			
MRF_IMS_SBX_47529_PSP			L						
OMR_SBX_50_PSP PCMU-A_G729A_OA			Media Control:	IPv4 Only					~
PCMU_AUTO			r Number of Redundant Packets						
PCMU_G729A_OA PCMU_OA				0	۲	1	0	02	
PCMU_PEM									
PCMU_T_OA PCR4532 PSP_OUT_SBX			Low Speed Number of Redundant Packets						
PCR4950_PSP				>0	۲	1	(0 2	
PCR7454_IND_EGRESS PCR7454_IND_INGRESS			T.38v0 Maximun Bit Rate						
PER35522_PSP_IN_SBX			O 2.4 kbits/s	0	4.8 kbits/s	 9.6 kbits 	8	14.4 kbits/s	
PER35522_PSP_OUT_SBX PER476304_PSP_IN_SBX			Data Rate Management Type						
PER476396_PSP_OUT_SBX				O Type 1 - Local Generation of TCF			Type 2 - Transfer of TCF		
PSP			Use Max Bit Rate Only						
PSP_G711 PSP_G711_AQUA			out max be nate only	Disabled			O Enabled		
PSP_G711_S8X44370				0.00000			0.0000		
PSP_G711_SBX53513 PSP_G729			ECM						
PSP_SBX54346_EGR					ECMI	reterred			~
PSP_SRC54146_ING		¥				and Bank			
🗋 New 👹	Open [Delete			Save X	Cancel 📋 Delete			
			,						

Figure 14: Configure PSP on PSX

- J					
PSX Manager V10.01.00A011 User: admin - North America	Host 10.54.49.22 @ 4330 Master (SWe) - V10.01.00A019	View: Packet Service Profil	Close	All	Perspect
r Menu	Packet Service Profile: PER-	47639s PSP OUT SBX			
	Silence Factor: 40				
📰 📰 🔢 🌬					
<configure></configure>					
<admin></admin>	Type Of Service: 0				
Packet Service Profile	AAL1 Payload Size: 47				
Packet Service Profile	Preferred RTP Payload Type For DTMF Relay: <nor< td=""><td>ie></td><td></td><td></td><td></td></nor<>	ie>			
r SQL Search Criteria (76 entries)	Media Packet COS: 0				
Packet Service Profile: *	Codec Entry				
Search 🖒 More – 🛤	Codec Entry: <none></none>				
Search Search			Add	Update	
a de la compansión de la	=		Aud		
Packet Service Profile		Codec Entry		Value	
EG_PSP				ER47639s_G711U	
ENT_ACM_DEFAULT_PSP	2 3			ER476398_6711A /ER476398_6722	
ENT_AVAYASM_DEFAULT_PSP	4			EK476398_G722 ER476398_G723	
ENT_CUCM_DEFAULT_PSP				ER476396_6723 ER476396_6729	
ENT_LYNCMS_PSP_TCP	3 6			ER476398_G729	
ENT_LYNCMS_PSP_TLS			r	CK470385_0720	
G729A_PCMU_OA					
G729A_RFC2833_OA					
ING_PSP					
KDDI_ISUP_SIP_IW					
KPML_EGRESS_PSP KPML_GW_PSP					
KPML_INGRESS_PSP					
MRF_CDMA_SBX_47529_PSP			Dele	ato .	
MRF_IMS_SBX_47529_PSP					
OMR_SBX_50_PSP PCMU-A_G729A_0A	Media Control: IPv4	Only			
PCMU_AUTO	T.38 r Number of Redundant Packets				
PCMU_G729A_OA PCMU_GA	Number of Hedundant Packets		۲		02
PCMU_PEM					02
PCMU_T_OA	Low Speed Number of Redundant Packets				
PCR4532_PSP_OUT_SBX PCR4950_PSP	00		۲	1	0 2
PCR7454_IND_EGRESS	r T.38v0 Maximun Bit Rate				
PCR7454_IND_INGRESS	0 2.4 kbits/s	4.8 kbits/		0.6 kbits/s	14.4 kbits/s
PER35522_PSP_IN_SBX	O 2.4 KOIIS/S	O 4.8 KDIES/		O 9.6 KBRS/S	14.4 KDIES/S
PER35522_PSP_OUT_SBX	Data Rate Management Type				
PER476399_PSP_IN_S8X PER476398_PSP_OUT_S8X		O Type 1 - Local Generation of TCF		Type 2 - Transfer	of TCF
PSP				0.411	
PSP_G711	Use Max Bit Rate Only				
PSP_G711_AQUA		Disabled		 Enabled 	
PSP_G711_S8X44370 PSP_G711_S8X53513	L ECM				
PSP_G711_S8X53513 PSP_G729	LOW .				
PSP_SBX54346_EGR			ECM P	referred	
PSP_SRX54346_ING	× .				
🗋 New 👹 Open 📋 Delete			Save X C	Cancel Delete	

7. Configure static route on SBC.

```
set addressContext default staticRoute 10.54.80.200 32 10.7.1.1 LIF1 pkt_a_v4v6 preference 100 set addressContext default staticRoute 10.54.80.200 32 10.7.1.1 LIF2 pkt_b_v4v6 preference 100 set addressContext default staticRoute 10.54.80.7 32 10.7.1.1 LIF2 pkt_b_v4v6 preference 100 set addressContext default staticRoute 10.54.80.8 32 10.7.1.1 LIF2 pkt_b_v4v6 preference 100 commit
```

Phase III - Inter op Testing

This section provides the tests that are performed to verify configuration of the NICE recorder as SIPREC server and the Sonus SBC.

Test Results

The following table lists a summary of the cases tested.

Table 2: Test Results

SI No	ID	Test Case	P /F	CQ
1	894177	Start/Stop a call recording via CLI - Call with GCID exists in Communication session and NICE SRS IPV4 Address in TCP	Ρ	
2	894186	PSX shall allow the called and calling party numbers in the recording criteria to be configured as a prefix	Р	
3	894187	Verify recording of session before/after consultative transfer Using REFER	Р	
4	894188	Verify recording of session for a call transcoded at ingress	Р	
5	894189	SDP shall include the same Codec as being used original communication Session	Р	
6	894190	Re-negotiation of codec in CS - Pass through Initially and transcoded after re-negotiation through ReInvite	Р	
7	894191	Re-negotiation of codec in CS - Pass through Initially and transcoded after re-negotiation through UPDATE	Р	
8	894192	In call forwarding unconditional, If C comes under recording criteria	Р	
9	894201	If the original call is forwarded No answer. If new call comes under recording criteria .	Р	
10	894202	REFER is received in the context of a recording session	Р	
11	894219	IP interworking scenarios	Р	
12	894220	Direct Media scenario	Р	
13	894221	SIP-I to SIP-I call scenario	Р	
14	894222	Re-negotiation of codec in CS - Pass through Initially and transcoded after re-negotiation through ReInvite with mismatch codecs.	Ρ	
15	894223	Session terminate by calling party which is not in recording criteria. Test case description	Р	
16	894224	UE initiating call with \'Supported: siprec\' header	Р	
17	894225	A-party uses codec that are not supported in the SRS TG.	Р	
18	894226	Call hold scenario for Rx Stream	Р	
19	894227	Call hold scenario for Tx Stream	Р	
20	895062	To confirm SBC initiates SIP-REC session in TCP for a call that is established with UDP as transport.	Р	
21	895063	To Verify the recording session established in ipv6 when communication session is established in ipv4	Р	

22	895064	To verify the recording session for an inband DTMF call	Р	
23	895065	To verify the recording session for an rfc2833 call	Р	
24	895066	To verify the recording session for an dtmf relay call.	F	SBX- 49451
25	895067	To confirm the recording for G711 Fax Passthrough call.	Р	
26	895069	Recording for a call involving fall back from transcode to passthru with re-invite	Ρ	
27	895070	To verify the recording for early media case with PRACK at ingress and egress including 200 ok with different sdp	Р	
28	895071	Fall back from direct media to passthru in a call transfer scenario with SIPREC	Ρ	
29	895072	Fall back from passthru to direct media in a call transfer scenario with SIPREC.	Р	
30	895073	Session refresh with UPDATE involving session recording	Ρ	
31	895074	To confirm a sip recording for a basic TLS/SRTP call	Ρ	
32	895075	Sip recording for a TLS call involving the change in cryptosuite	Р	
33	895076	A Basic call including srtp on one side and rtp on the other side with sip recording	Ρ	
34	895077	A Basic call with indialog notify with xml body sent form UAC.	Р	
35	895078	An indialog Info and message with xml body sent from uas to uac.	Ρ	
36	895079	A Basic call involving 302 re-direction from target number with siprec.	Ρ	
37	895080	A Basic call involving 302 re-direction to target number with siprec.	Ρ	
38	895081	A basic call with rtcp flag enabled on both ingress and egress including sip recording.	Ρ	
39	895082	Basic call including late media with siprec.	Ρ	
40	895174	A Basic video call with audio recording.	Ρ	
41	895175	Fall back of a video call to audio call through RE-INVITE	Ρ	
42	895176	Audio call upgraded to Video through re-invite with audio recording	Ρ	
43	895177	siprec Failover from primary to secondary recording server.	Ρ	
44	895178	siprec call with call duration set for a specific time in PSX.	Ρ	
45	895179	Call recording based on trunk group.	Ρ	
46	895181	Transport protocol for recording is configured as TCP in PSX where as its not configured in SBC sipsigport	Р	
47	895187	Basic call with LI (which uses splitter) simulator and SIP Recording where LI taking the priority.	Ρ	
48	895189	Performing switch over while a call is being recorded.	Р	
49	897948	A Basic GW-GW call with sip recording	Р	

Conclusion

This Application Notes describe the configuration steps required for Sonus SBC to successfully interoperate with SIPRec server - NICE recorder. All feature and service test cases have been completed and passed with the exceptions /observations noted in Section Phase III- Inter op testing.