

Avaya Solution & Interoperability Test Lab

Application Notes for Komutel SIT with Avaya Communication Server 1000 - Issue 1.0

Abstract

These Application Notes describe the steps required to integrate the Komutel SIT (Solution for Integrated Telecommunications) Console with Avaya Communication Server 1000. The SIT Console provides a PC based desktop communications center with enhanced control of call handling features. It provides the ability to handle a high volume of calls and offers tools designed to manage telephony functions and Presence Management to monitor the availability of users.

In the compliance test, the SIT Console successfully emulated a Communication Server 1000 IP Softphone using UNIStim protocol. The SIT Console established calls with other telephones, and executed telephony features such as Hold, Transfer, and Conference. In addition, an optional component of the SIT to monitor other telephones that are connected to the Communication Server 1000 was also successfully verified. This feature requires the use of Busy Forward Status key to obtain status information of monitored stations on Communication Server 1000.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the steps required to integrate the Komutel SIT Console (Solution for Integrated Telecommunications) with Avaya Communication Server 1000. The SIT Console provides a PC based communications center with enhanced control of call handling features. It provides the ability to handle a high volume of calls and offers tools designed to manage telephony functions and Presence Management to monitor the availability of users.

In the compliance test, the SIT Console successfully connected with Communication Server 1000 as an IP Softphone using UNIStim protocol, established calls with other telephones, and executed telephony features such as Hold, Transfer, and Conference. In addition, an optional component of the SIT Console to monitor other Communication Server 1000 extensions was also successfully verified. This feature requires the use of Busy Forward Status (BFS) key to obtain status information of monitored stations on Communication Server 1000.

2. General Test Approach and Test Results

To verify interoperability of the SIT Console with Communication Server 1000, calls were made between the SIT Console and Avaya IP, SIP and digital stations while also exercising common telephone features. The telephony features were tested by activating and deactivating phone buttons on the SIT Console. In addition, the SIT Console was able to monitor other extensions on the Communication Server 1000 using the BFS keys.

2.1. Interoperability Compliance Testing

Interoperability compliance testing covered the following features and functionality:

- Successful connection of the SIT Console with Communication Server 1000 using UNIStim protocol.
- Calls between SIT Console and Avaya IP, SIP and digital stations.
- Caller ID display on Avaya and SIT Console.
- Sending of DTMF.
- Basic telephony features including Hold, Mute, Transfer, Forwarding and Conference.
- Buttons to monitor user availability of other Communication Server 1000 extensions, which requires a BFS key.
- Proper system recovery after a restart of the SIT Console and loss of IP connectivity.

2.2. Test Results

Basic test cases were executed and passed with the following observations:

• Pressing the keypad on the SIT Console does not produce the DTMF beep tones, however proper DTMF values are sent.

- If SIT Console has multiple lines, when SIT Console goes off-hook to make a call, by default it picks the line with the higher key number. For example if SIT Console has Key 0 and 1 programmed then Key 1 is picked by default.
- When SIT Console carries out an Assisted Transfer, after Caller and Recipient both hang up, the Assisted Transfer window does not close by default and has to be manually closed.
- Click on the Call Park button on the SIT Console, the call is parked and a park directory number (DN) is returned in the display. The park DN is not stored in the display history.
- If there is network disruption, the SIT Console still shows the status as connected to phone, however trying to dial an extension in this state produces the following error screen:

Error occurred					
The application has encountered a problem. We are sorry for the inconvenience.					
Access violation at address 20007A50 in module 'rtl100.bpl'. Write of address 0000005C.					
Please tell us about this problem. We have created an error report that you can send to us. We will treat this report as confidential and anonymous.					
To see what data the error report contains, <u>click here.</u>					
Email address (optional):					
Send Error Report Don't Send					

After network connection is re-established user needs to restart the SIT Console again to make it operational.

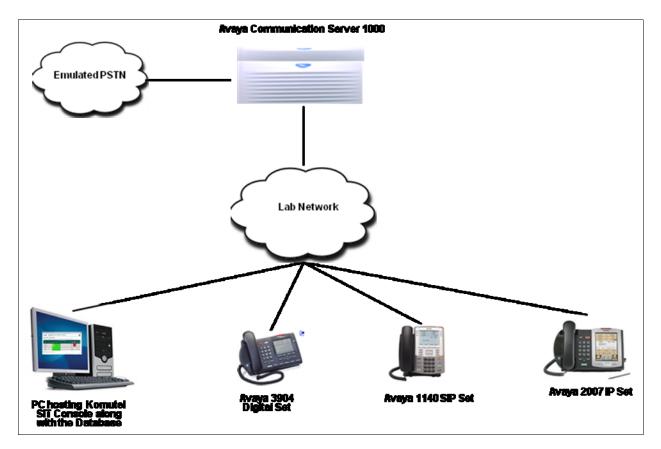
2.3. Support

For technical support on the SIT Console, contact Komutel Support via phone, email, or website.

- **Phone:** (877) 225-9988
- Email: <u>service@komutel.com</u>
- Web: <u>http://www.komutel.com</u>

3. Reference Configuration

The figure below illustrates the lab configuration that was used for compliance testing.



4. Equipment and Software

Hardware Component	Version
Avaya Communication Server 1000	7.5
Avaya 1140 SIP Set	04.01.13.00
Avaya 2007 IP Set	0621C8A
Avaya Digital Set	N/A
Komutel SIT Console	2.0.0.8305
Komutel modTelephony_IpSoftphoneCS1000.dll	1.0.0.8297

The following equipment and software were used for the sample configuration provided:

5. Configure Avaya IP Softphone

This section provides the procedures for configuring an Avaya IP Softphone in the Communication Server 1000 which will be used by the SIT Console.

For detailed information on installation and configuration for Communication Server 1000, refer to **Section 9** [1].

Connect to the Communication Server 1000 using PuTTY and access the command line interface (CLI) by entering the proper credentials (not shown).

Overlay 11 (LD 11) in CLI is used to configure an IP Softphone. Prompts in red shown in Figures 1, 2 and 3 below need to be configured by the user. The rest of the values remain at default.

In **Figure 1**, the Key Expansion Module (**KEM**) was configured since it would be used to configure the BFS keys required for monitoring other extensions. During compliance testing a Forward Directory Number (**FDN**) was also configured to test the message waiting feature.

	IRTUAL
TYPE 2050PC	
CDEN 8D	
CTYP XDLC	
CUST O	
NUID	
NHTN <mark>KEM</mark> 3	
CFG ZONE 00001	
CUR ZONE 00001	
MRT	
ERL O	
ECL O	
FDN 58888	
TGAR 1	
LDN NO	
NCOS 7	
SGRP O	
RNPG O	
SCI O	
SSU	
XLST	
SCPW	
SFLT NO	
CAC_MFC O	

Figure 1: Configuring an IP Softphone

In Figure 2 the Class of Service (CLS) Forward No Answer Allowed (FNA), Message Waiting Allowed (MWA) and Key Expansion Module (KEM3) were configured for compliance testing.

CAC MFC O							
CLS CTD FBD WTA LPR M	ITD FNA HTD TDD HFA CRPD						
MWA LMPN RMMD SMWD AAD IMD XHD IRD NID OLD VCE DRG1							
POD SLKD CCSD SWD	LND CNDA						
CFTD SFD MRD DDV	CNID CDCA MSID DAPA BFED RCBD						
ICDD CDMD LLCN MC	CTD CLBD AUTU						
GPUD DPUD DNDD CF	FXD ARHD CLTD ASCD						
CPFA CPTA ABDD CF	FHD FICD NAID BUZZ AGRD MOAD						
	IPND DDGA NAMA MIND PRSD NRWD NRCD NROD						
DRDD EXRO							
	CBD RTDD RBDD RBHD PGND OCBD FLXD FTTC DNDY DNO3 MCBN						
	DUD CDMR PRED RECD MCDD T87D SBMD						
	KCH MUTA MWTD DVLD CROD ELCD						
CPND_LANG ENG							
RCO O HUNT							
PLEV O2							
PUID							
UPWD							
DANI NO							
AST							
IAPG O							
AACS NO							
ITNA NO							
DGRP							
MLWU_LANG O							

Figure 2: Class of Service configured during compliance testing

In Figure 3, Key 00 and 01 were configured so that multi line feature could be tested during compliance testing. Also one BFS key was configured so that an extension on Terminal Number (TN) 096 1 00 20 could be monitored by the SIT Console.

	-				
MLNG		3			
DNDR					
KEY	00)3 O	MARP
		CPNI			
		CI		ANG ROM	
				NetIQ	1
			XPLN		
					FIRST,LAST
		SCR	5690)4 0	
	02				
	03				
	04				
	05				
	06				
	07				
	08				
	09				
	10 11				
	12				
	13				
	14^{10}				
	15				
	16				
		TRN			
		A06			
			16	58004	
	20	RGA			
		PRK			
	22	RNP			
	23				
	24	PRS			
	25	CHG			
	26	CPN			
	27				
	28				
	29				
	30				
	31				
KEM 1					
		BFS	096	1 00 20	
	33				

Figure 3: Single Call Ringing and BFS Keys Configuration

6. Configure Komutel SIT Console

This section provides the procedures for configuring the SIT Console. The procedures include the following areas:

- Configure the SIT Console to connect to Communication Server 1000.
- Configure the SIT Console.
- Configure the SIT Console to monitor other desktop phones.

For detailed information on installation and configuration of SIT Console refer to Section 9 [2].

6.1. Configure SIT Console to connect to Communication Server 1000

During the end of the SIT installation process, user is presented with the option to configure the SIT Console so that it can connect to the Communication Server 1000 and register as an IP Softphone.

The screen below shows the **Phone system configuration** where **Ip** value is the Node IP address of the Communication Server 1000. Click on **Next** to proceed.

🐻 Set	tup - SIT			- 🗆 🗵
Ph	ione system configuration	on		K
	Server	51 💌		
	Ip	110.10.10.110		
	Port	4100		
	Retries	10		
w	ww.komutel.com		Next >	

The screen below shows the screen requesting user to proceed to connect to the softphone. Click on **OK** to continue.

Setup	×
i)	A software will now open. It will allow you to enter your information in the same way you are doing it the first time you connect a 2050 softphone. When you see that the phone is connected, you can close it and the console will be ready for use.

The screen below shows the Node ID and the TN values of the softphone that was configured during compliance testing.

Nort <u>T</u> ools	tel Ip term	inal				×
Connect Svc Node: 551_ TN: 96002_						
ок		BKSpace	Cle	ear	Cancel	
)		↑ ↓	→		
		1	2	3	Release	
		4	5	6		
		7	8	9		
		*	0	#		

The screen below shows the SIT Console connecting to the Communication Server 1000 as an IP softphone.

👰 Nortel Ip termii	nal				×
Tools					
CS 1000 CS1K 7.5	_1				
	~	↑ ↓	→		1
	1	2	3	Release	
	4	5	6		
	7	8	9		
	*	0	#		
					L

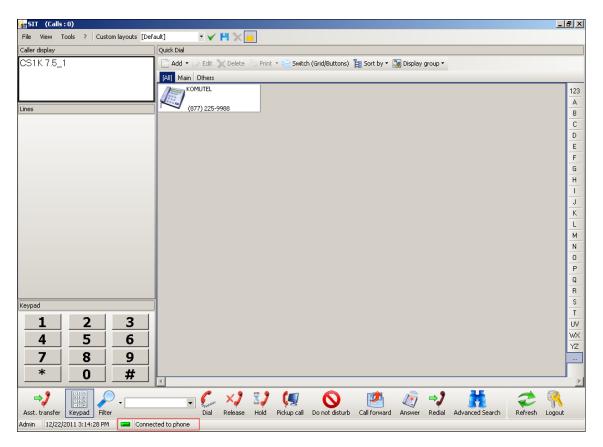
6.2. Configure SIT Console

This section explains the configuration required on the SIT Console so that it can connect as an IP Softphone on the PC. It is assumed that the SIT Console application and database was successfully installed on the PC as discussed in **Section 6.1**.

Launch the SIT console on the PC and enter the login credentials as shown in the screen below. Click on **Connect**.

L	ogin		x
	Connection		
	Login	admin	
	Password	****	
	-Authentication		_
	 Standard 	 Windows 	
	🗙 Exit	Connect]

The main SIT Console screen is shown below. Note the **Connected to phone** status on the bottom left hand of the screen.



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🚮 SIT (Call	s : 0)		_ 8 ×
File View	Tools ? Custom layouts [Defa	ault] 🚽 🗸 💾 💥 🦲	
Caller display	😓 Options	Quick Dial	
CS1K 7.5	👫 Users	📄 Add 🔹 😥 Edit 📡 Delete 💍 Print 🔹 🚞 Switch (Grid/Buttons) 🎽 Sort by 🖉 Display group 🔹	
	📔 Image library	[All] Main Others	
	Connect to phone		123
		KOMUJEL	A
Lines		(877) 225-9988	В
			С
			D
			E

From the **Phone settings** tab configure the required values. The screen below shows the values configured during compliance testing. Click on the **Save** button to save the configured values.

siit S	π					X
Ľ	20)				
	Customization	Application setting	s 💷 Phone setting	s 🚺 Display group	🏮 Status management 🛛 Module settings 🛛 🏷 Appearance 😽 Advanced	options
Pł	one's functions ider	ntification			System settings	-NXX codes
	Label	Functions	Description	Can make c 🔺		613
_	58103	Automatic line	58103			
2	56904	Automatic line	56904		Local prefix 9	
	Call park	Call park			Long distance prefix 9	
4	Message waiting	Led			Long distance prefix	
5					Local area code 613	
6					National code	
7						
8					International code 011	
9	-				Phone ID 1	
10						
11					Phone connection	
12					Language English 💌	
14					Server S1 💌	
15					Report the handset as off hook	
16					✓ Use alternative method for lines status	
17						
18					Pickup key number	
19						
20					IP 110.10.110	
21					Port 4100 🗘	
22					Retries 10 🔹	
23						
24					Hardware id 000C296EF7B3 Generate	
25					-Audio settings	
26					Microphone DigitalIn (Realtek High Definitic 👻	
27						
28					Speaker Realtek Digital Output (Realtek 🗸	
29						
30					Ring Realtek Digital Output (Realtel 🔻	
31						-
1.32	1	1	1			

The screen below shows the SIT Console with the **Lines** configured and the status **Connected to phone**. The SIT is now ready to make and receive calls.

SIT (Calls:1)		_ 8 ×
File View Tools ? Custom layouts [Def	fault] 🔹 🗸 💾 💥 🦲	
Caller display	Quick Dial	
CS1K 7.5_1	📄 Add 🔹 😥 Edit 📉 Delete 😓 Print 👻 🚞 Switch (Grid/Buttons) 🎽 Sort by 🔹 🍞 Display group 🔹	
	[All] Main Others	
	KOMUTEL	123
		A
Lines	(877) 225-9988	В
		<u> </u>
58103		D
		E F
		G
56904		H
		1
		J
Call park		<u>_K</u>
		- <u>M</u>
		0
Message waiting		P
		Q
		_ <u>R</u>
Keypad		
1 2 3		
		WX
4 5 6		YZ
7 8 9		
* 0 #		
		Þ
	, 💪 ×J 🛂 🐙 🚫 💾 🔬 →J 👬 🛛 🏞	2
Asst. transfer Keypad Filter		i)) 🤒 ogout
	ected to phone	

6.3. Configure SIT Console to monitor other desktop phones

This section explains the configuration required on the SIT Console to monitor other available extensions on the Communication Server 1000.

To add a button to monitor an extension, click on Add as shown below.

🚰 SIT (Calls : 1)		_ & ×
File View Tools ? Custom layouts [Def-	ad] 🔹 🗸 📔 🗙 🧧	
Caller display	Quek Dial	
CS1K 7.5_1	🔁 Add 🔹 💭 Edit 📡 Delete 👘 Print 🔹 📄 Switch (Grid/Buttons) 🎬 Sort by 📲 Display group 🔹	
	[40] Main Others	
	KOMUTEL	123
11	(877) 225-9986	Α
Lines	0///223/9900	В
50100		C
58103		DE
		F
		G
56904		н
		K
Call park		L
		м
		N
Message waiting		0 P
		q
		R
Keypad		S
		T
1 2 3		UV WX
4 5 6		YZ
7 8 9		
* 0 #		
	۲.	E
		A.
Asst. transfer Keypad Filter	Dial Release Hold Pickup call Do not disturb Call forward Answer Redial Advanced Search Refresh Log	out
	cted to phone	

The screen below shows the Firstname and Lastname fields populated in the Contact tab.

🎲 Contact							
9		Ad	d button				
Contact Phone nu	umbers 0	ther Button 1					
Firstname	58020						
Lastname	58020						
Title					-	No picture	
Salutation	Mister				•		
Department					-		
Address 1							
Address 2							
City	Default	•	Prov / State	New York	-		
Country	USA	•	Postal / Zip				
Hobby					-		
Email							
Website							
Service date		•					
Last modification date							

The screen below shows the phone number to be monitored. During compliance testing DN **58020** was used.

Contact			
9 🗖	Add button		
Contact Phone number	s Other Button 1		
Phone numbers		_	
Location	Phone number	Ext.	Note
Work	58020		
Home 1			
Home 2			
Cellphone			
Carphone			
Pager			
Phone 7			
Phone 8			
Phone 9			
Phone 10			
Phone 11			
Phone 12			
Phone 13			
Phone 14			
Phone 15			

From the **Button 1** tab enter the **Phone id**, **Blf no** and select the **Default phone number**. Note that the Blf number is **32** as configured in **Figure 3** in Section 5.

谢 Contact			
ら 🖪	Add button		
Contact Phone numbers Other	Button 1		
-Display			
Assign a display group		•	
Button order			
Customization	Color not sele 🔻 🚥		1
-Additional configuration			
Phone id	1		
Blf no	32		
Default phone number	Work		

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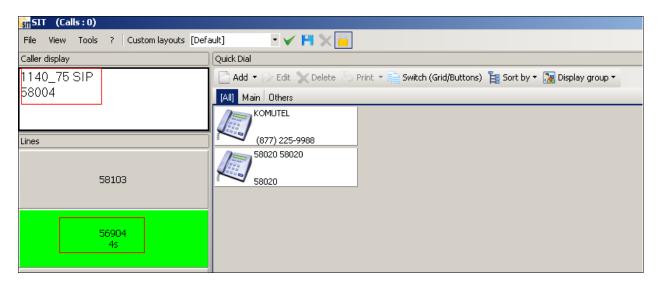
🚮 SIT (Calls:1)		B×
File View Tools ? Custom layouts [Def	fault] 🔹 🖌 💾 🗙 🦳	
Caller display	Quick Dial	
CS1K 7.5_1	📄 Add 🔹 🗇 Edit 📡 Delete 😓 Print 🔹 🚞 Switch (Grid/Buttons) 🎽 Sort by 🛛 🌆 Display group 🔹	
	[All] Main Others	
	KOMUTEL	123
		A
Lines	3 (877) 225-9988 58020 58020	В
		<u>C</u>
58103	58020	
		F
		G
56904		Н
		1
Call park		<u>к</u> L
		<u>—</u> М
		<u>N</u>
Message waiting		0
Message Warding		Ρ
		Q
		R S
Keypad	J	
1 2 3		UV
4 5 6		wх
		ΥZ
7 8 9		
* 0 #	<u>र</u>	Þ
→ 2		
Asst. transfer Keypad Filter	Dial Release Hold Pickup call Do not disturb Call forward Answer Redial Advanced Search Refresh Logout	
Admin 12/22/2011 3:27:53 PM 🔤 Conne	icted to phone	

The screen below shows the SIT Console with the extension that is being monitored.

7. Verification Steps

This section provides the tests that can be performed to verify that the SIT Console can register as an IP Softphone and therefore make and receive calls.

The screen below shows the call being made from the SIT Console Line DN 56904 to another extension 58004.



The screen below shows the status of the extension that is being monitored from the SIT Console. For example status of extension 58020 shows that it is in conversation with extension 56904.

SIT (Calls:0)					
File View Tools ? Custom layouts [Defa	ault] 🔹 🖌 💾 📉 🔛				
Caller display	Quick Dial				
2002p2 IP	📄 Add 🔹 📄 Edit 🗙 Delete 🕓 Print 🔹 📄 Switch (Grid/Buttons) 🎦 Sort by 👻 🔝 Display group 🔹				
58020	[All] Main Others				
	KOMUTEL				
Lines	(877) 225-9988				
58103	58020 58020 58020				
56904 3s					

The screen below shows the Message Waiting Line in Red color which means that there is a message waiting to be accessed for the SIT Console.

🚮 SIT (Calls : 1)	
File View Tools ? Custom layouts [Def	ault] 🔹 🖌 💾 📉 📙
Caller display	Quick Dial
CS1K 7.5_1	📄 Add 🔹 💬 Edit 🔪 Delete 💍 Print 🔹 🚔 Switch (Grid/Buttons) Ig Sort by 🔹 🌆 Display group 🔹
	[All] Main Others
	KOMUTEL
Lines	(877) 225-9988
	58020 58020
58103	58020
56904	
Call park	
Message waiting	

Other basic telephony functionalities like Transfer, Assisted Transfer, Link (Conference), Hold, Redial, Release, Do not Disturb, Call Forward, Call Park and DTMF were also verified.

8. Conclusion

These Application Notes describe the configuration steps on a SIT Console for it to operate as an IP Softphone on the Communication Server 1000. The SIT Console was able to successfully register as an IP Softphone using UNIStim protocol and execute the basic telephony features. In addition, the SIT Console was able to monitor the availability and status of other extensions on the Communication Server 1000 using the BFS key feature. All basic test cases passed.

9. References

This section references the product documentation relevant to these Application Notes.

[1] Avaya Communication Server 1000 Installation, Migrations, Upgrades and Configurations documents, available at <u>http://support.avaya.com.</u>

[2] *Komutel Manager's and User Guide for SIT PC Attendant Console,* documents available by contacting Komutel.

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