



# **SAP Contact Center Compatibility List**

Software version SP10

16 November 2017

## TABLE OF CONTENTS

<b>1</b>	<b>SAP CONTACT CENTER CERTIFIED PRODUCTS.....</b>	<b>4</b>
<b>1.1</b>	<b>Windows Servers.....</b>	<b>4</b>
1.1.1	Windows Server 2008 Standard and Enterprise Editions 64-bit systems .....	4
1.1.2	Windows Server 2012 Standard and Windows Server 2012 R2 Standard.....	5
<b>1.2</b>	<b>SQL Servers.....</b>	<b>6</b>
1.2.1	SQL Server 2008 and SQL Server 2008 R2 64-bit Standard Editions.....	6
1.2.2	SQL Server 2012 64-bit Standard Edition.....	6
<b>1.3</b>	<b>Voice over IP Gateways.....</b>	<b>7</b>
<b>1.4</b>	<b>SIP Session Border Controllers.....</b>	<b>8</b>
<b>1.5</b>	<b>Telecom Operator Provided SIP Trunks.....</b>	<b>8</b>
<b>1.6</b>	<b>Client Workstations.....</b>	<b>9</b>
1.6.1	Windows Vista Enterprise (SP2) .....	9
1.6.2	Windows 7 Professional and Enterprise .....	9
1.6.3	Windows 8 and 8.1 Pro and Enterprise .....	10
1.6.4	Windows 10 Pro and Enterprise.....	10
<b>1.7</b>	<b>USB Devices.....</b>	<b>12</b>
1.7.1	USB Handsets and Speaker Phones.....	13
1.7.2	Wireless Handsets.....	13
1.7.3	USB Headsets.....	14
1.7.4	Wireless Headsets.....	18
1.7.5	USB Adapters for Analog Headsets .....	21
<b>1.8</b>	<b>SIP Desk Phones.....</b>	<b>22</b>
<b>1.9</b>	<b>Mobile Phones.....</b>	<b>27</b>
<b>1.10</b>	<b>Other.....</b>	<b>27</b>
1.10.1	Analog Adapters and Gateways.....	27
1.10.2	Cameras.....	27
1.10.3	Outbound Predictive Dialer .....	27
1.10.4	Fax.....	27
1.10.5	SMS .....	27
1.10.6	SIP Integrated IVR.....	28
<b>2</b>	<b>SAP CONTACT CENTER COMPATIBLE PRODUCTS.....</b>	<b>29</b>
<b>2.1</b>	<b>Wireless Handsets/IP Desk Phones.....</b>	<b>29</b>
<b>2.2</b>	<b>IP PBX and UC Systems.....</b>	<b>29</b>
<b>2.3</b>	<b>Telecom Operator Provided SIP Trunks.....</b>	<b>29</b>
<b>2.4</b>	<b>Virtualization Solutions.....</b>	<b>29</b>
<b>3</b>	<b>SAP CONTACT CENTER USER VERIFIED PRODUCTS.....</b>	<b>30</b>
<b>3.1</b>	<b>IP PBX and UC Systems.....</b>	<b>30</b>
<b>3.2</b>	<b>Telecom Operator Provided SIP Trunks.....</b>	<b>30</b>
<b>4</b>	<b>SAMPLE SAP CONTACT CENTER SERVERS.....</b>	<b>31</b>
<b>4.1</b>	<b>Small In-House Setup Using Windows Server 2008.....</b>	<b>31</b>
<b>4.2</b>	<b>Basic Service Provider Setup Using Windows Server 2008.....</b>	<b>32</b>
<b>4.3</b>	<b>Service Provider Setup with SAN Using Windows Server 2008.....</b>	<b>33</b>

## DOCUMENT HISTORY

<b>Date</b>	<b>Description</b>
2017/11/16	A new device from Jabra and Sennheiser added to the <a href="#">Wireless Headsets</a> list.
2017/01/10	New devices from Sennheiser added to the <a href="#">USB Headsets</a> , <a href="#">Wireless Headsets</a> and <a href="#">USB Adapters for Analog Headsets</a> lists
2016/12/08	New devices from Jabra, Plantronics and VXi added to the <a href="#">USB Headsets</a> and <a href="#">Wireless Headsets</a> lists.

## 1 SAP CONTACT CENTER CERTIFIED PRODUCTS

Certified indicates that SAP Labs or a technology partner has tested the product and that SAP Labs strives to maintain the compatibility. A certified product can be used with SAP Contact Center (SAP CCtr, formerly SAP BCM) but it does not mean that all the features of the product are supported, such as video calls, various indicators, multiline (e.g. mobile and PC) support and others.

### 1.1 Windows Servers

#### 1.1.1 Windows Server 2008 Standard and Enterprise Editions 64-bit systems

##### Suitability and special notes

Windows Server 2008 Standard edition can be used as SAP Contact Center Application Server platform. It can also be used as SQL Server platform for SAP Contact Center with some restrictions that are mostly redundancy related, such as the standard edition not supporting clusters and hot swappable components. More information about Windows Server 2008 editions and edition comparison tables can be found from Microsoft. This applies also to Windows Server 2008 R2 respectively.

##### Minimum setup

- One 2.0 GHz x86 or x64 based CPU
- 2 gigabytes (GB) of RAM
- 40 gigabytes (GB) of disk space
- One 100 Mbps network interface card

##### Recommended setup (minimum setup with the following modifications)

The recommended setup depends on the load and the server role and needs to be determined case by case. In general, the following recommendations apply.

- One or more multicore 2.0 GHz or faster x64-based CPUs
- 4 gigabytes (GB) of RAM or more if several SAP CCtr components are running on the same server
- 60 gigabytes (GB) or more of disk space if several SAP CCtr components are running on the same server
- Redundant hot pluggable and fast RAID disks or SAN based fault tolerant storage
- One or more 1000 Mbps network interface cards
- Hot pluggable redundant power supplies
- Hot pluggable redundant ventilators

##### Additional requirements

- English version of Windows Server 2008
- See also: <http://technet.microsoft.com/en-us/windowsserver/bb414778.aspx>

##### Support Lifecycle

Microsoft Mainstream support end date is 13.1.2015

Microsoft Extended support end date is 14.1.2020

(<https://support.microsoft.com/en-us/gp/lifeselectindex>)

See also SAP Note <http://service.sap.com/sap/support/notes/1177282> "End of Support for SAP Releases Using Microsoft Products"

## 1.1.2 Windows Server 2012 Standard and Windows Server 2012 R2 Standard

### Suitability and special notes

Windows Server 2012 Standard edition can be used as SAP Contact Center Application Server platform. This applies also to Windows Server 2012 R2 respectively. More information about Windows Server 2012 editions and edition comparison tables can be found from Microsoft. Windows Server 2012 is recommended for new installations.

### Minimum setup

- One 2.0 GHz x86 or x64 based CPU
- 2 gigabytes (GB) of RAM
- 40 gigabytes (GB) of disk space
- One 100 Mbps network interface card

### Recommended setup (minimum setup with the following modifications)

The recommended setup depends on the load and the server role and needs to be determined case by case. In general, the following recommendations apply.

- One or more multicore 2.0 GHz or faster x64-based CPUs
- 4 gigabytes (GB) of RAM or more if several SAP CCtr components are running on the same server
- 60 gigabytes (GB) or more of disk space if several SAP CCtr components are running on the same server
- Redundant hot pluggable and fast RAID disks or SAN based fault tolerant storage
- One or more 1000 Mbps network interface cards
- Hot pluggable redundant power supplies
- Hot pluggable redundant ventilators

### Additional requirements

- English version of Windows Server 2012
- See also: <http://technet.microsoft.com/en-us/library/jj134246.aspx> and <http://technet.microsoft.com/en-us/library/dn303418.aspx>

### Support Lifecycle

Microsoft Mainstream support end date is 9.1.2018

Microsoft Extended support end date is 10.1.2023

(<https://support.microsoft.com/en-us/gp/lifeselectindex>)

See also SAP Note <http://service.sap.com/sap/support/notes/1177282> "End of Support for SAP Releases Using Microsoft Products"

## 1.2 SQL Servers

### 1.2.1 SQL Server 2008 and SQL Server 2008 R2 64-bit Standard Editions

#### Suitability and special notes

SQL Server 2008 R2 is recommended to be run on Windows Server 2008 R2. This applies also to SQL Server 2008 respectively. 64-bit systems are recommended because they are able to address a maximum of 64 gigabytes of memory.

#### Minimum setup

- The minimum setup for the Windows server

#### Recommended setup (minimum setup with the following modifications)

The recommended setup depends on the load and the estimated database size and needs to be determined case by case. In general, the following recommendations apply.

- One or more multicore 2.0 GHz or faster x64-based CPUs
- 16 gigabytes (GB) of RAM or even more if the databases are (estimated) big
- 500 gigabytes (GB) or more of disk space
- Clustering and backup solutions in compliance with SLA and DR requirements.

#### Additional requirements

- English version of SQL Server 2008
- See also: [http://technet.microsoft.com/en-us/library/ms143506\(v=sql.105\).aspx](http://technet.microsoft.com/en-us/library/ms143506(v=sql.105).aspx)

#### Support Lifecycle

Microsoft Mainstream support end date is 8.7.2014

Microsoft Extended support end date is 9.7.2019

(<https://support.microsoft.com/en-us/gp/lifeselectindex>)

See also SAP Note <http://service.sap.com/sap/support/notes/1177282> "End of Support for SAP Releases Using Microsoft Products"

### 1.2.2 SQL Server 2012 64-bit Standard Edition

#### Suitability and special notes

SQL Server 2012 is recommended to be run on Windows Server 2012 R2. 64-bit systems are recommended because they are able to address a maximum of 64 gigabytes of memory.

#### Minimum setup

- The minimum setup for the Windows server

#### Recommended setup (minimum setup with the following modifications)

The recommended setup depends on the load and the estimated database size and needs to be determined case by case. In general, the following recommendations apply.

- One or more multicore 2.0 GHz or faster x64-based CPUs
- 16 gigabytes (GB) of RAM or even more if the databases are (estimated) big
- 500 gigabytes (GB) or more of disk space
- Clustering and backup solutions in compliance with SLA and DR requirements.

#### Additional requirements

- English version of SQL Server 2012
- See also: [http://msdn.microsoft.com/en-us/library/ms143506\(SQL.110\).aspx](http://msdn.microsoft.com/en-us/library/ms143506(SQL.110).aspx)

#### Support Lifecycle

Microsoft Mainstream support end date is 11.7.2017

Microsoft Extended support end date is 12.7.2022

(<https://support.microsoft.com/en-us/gp/lifeselectindex>)

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See also SAP Note <http://service.sap.com/sap/support/notes/1177282> "End of Support for SAP Releases Using Microsoft Products"

### 1.3 Voice over IP Gateways

Product	Manufacturer	SIP	H323	Ports min	Ports max	Remark
Dialogic 2030DTI	Dialogic	X		1	1	
Dialogic 2060DTI	Dialogic	X		2	2	
Dialogic 2120DTI	Dialogic	X		4	4	
Mediant 800	AudioCodes	X		1	2	Digital media gateway
Mediant 1000 B	AudioCodes	X	X <sup>(3)</sup>	1	4	Digital media gateway
Mediant 2000	AudioCodes	X	X <sup>(3)</sup>	2	16	Digital media gateway
3925-V/K9	Cisco	X		2)	2)	Cisco 3925 voice bundle, PVDM3-64, UC Li
3925E-V/K9	Cisco	X		2)	2)	
3945-V/K9	Cisco	X		2)	2)	
3945E-V/K9	Cisco	X		2)	2)	
<b>EOL Products</b>						
2901	Cisco	X		1)	2)	
2911	Cisco	X		1)	2)	
2921	Cisco	X		1)	2)	
2951	Cisco	X		1)	2)	
IP 6000	Innovaphone	X	X	2	2	
IP 3000	Innovaphone		X	1	1	EOL
IP 3000 DD	Innovaphone		X	2	2	EOL
Mediant 600	AudioCodes	X		1	2	Digital media gateway
Mediant 1000	AudioCodes	X	X <sup>(3)</sup>	1	4	Replaced by Mediant 1000 B
NM-HDV <sup>(1)</sup>	Cisco	X	X	1	2	EOL

- <sup>1)</sup> NM-HDV is a High Density Voice Network Module that can be installed in a Cisco multiservice Modular Access router. A VWIC module with 1 or 2 E1 or T1 ports and a required number of PVDM (DSP) modules are installed on the NM-HDV module. One PVDM-12 module is capable of running twelve calls using medium complexity CODEC (G.711, G.729a/b) or six calls using a high complexity CODEC (G.729).
- <sup>2)</sup> The compatibility of 2900 and 3900 series routers are tested with Cisco 3925-V/K9 (SIP) and the compatibility of other models is based on similarity. Contact your Cisco dealer for more information about Cisco products, configurations and capacities.
- <sup>3)</sup> Available in software version 5.0 and earlier. AudioCodes H.323 is not available for purchase since 2012.

Supported routers and the maximum number of NM-HDAs, ports and voice channels supported

Modular Access router	Max NM-HDVs	Max T1 ports	Max T1 voice channels	Max E1 ports	Max E1 voice channels	Remark
2600/XM, 2691	1	2	48	2	60	EOL
2811, 2821, 2851	1	2	48	2	60	EOL
3640/A	3	5	96	4	96	EOL
3660	6	12	288	10	300	EOL
3725	2	4	96	4	120	EOL
3745	4	8	192	8	240	EOL
3825	2	4	96	4	120	End of Sales 1.11.2011
3845	4	8	192	8	240	End of Sales 1.11.2011

See [www.cisco.com](http://www.cisco.com) for detailed information about, for example, configuration, required memory amounts and minimum IOS versions.

### 1.4 SIP Session Border Controllers

Product	Manufacturer	Min Capacity	Max Capacity	Version	Remark
Mediant 500 E-SBC	AudioCodes	5	250		
Mediant 800 E-SBC	AudioCodes	5	250		
Mediant 1000 E-SBC	AudioCodes	5	150		
Mediant 2600 E-SBC	AudioCodes	100	600		
Mediant 3000 E-SBC	AudioCodes	252	1008		
Mediant 4000 E-SBC	AudioCodes	250	5000		
Mediant 9000 SBC	AudioCodes	2000	16000		Future firmware versions to support higher capacities
Mediant VE SBC	AudioCodes	25	2000		Future firmware versions to support higher capacities
Mediant SE SBC	AudioCodes	250	16000		Future firmware versions to support higher capacities

### 1.5 Telecom Operator Provided SIP Trunks

Product	Manufacturer	Remark
SIP trunk	Colt	Certified by AudioCodes in March 2014 using AudioCodes SBC in front of SAP Cctr. Configuration notes are available on AudioCodes web pages. Colt SIP trunk software version 8.4.4 Fax excluded.



## 1.6 Client Workstations

### 1.6.1 Windows Vista Enterprise (SP2)

#### Minimum setup

- PC with 1-GHz (x86) processor
- 1 gigabytes (GB) of RAM
- 40 gigabytes (GB) of disk space
- Video adapter and monitor with the resolution 1024 x 768
- Keyboard and mouse or some other pointing device
- 10 Mbps network interface card
- 1 free USB port (version 2.0)
- Microsoft Internet Explorer 9.0

#### Recommended setup (minimum setup with the following modifications)

- 100/1000 Mbps network interface card

#### Additional requirements

- A USB audio device with a microphone and a speaker is required, unless MTD mode is used.
- Call controls (such as hook switch and mute) on the USB device (optional).
- A sound card for playing the ringing tone on the PC speaker (optional)
- See also: <http://support.microsoft.com/kb/919183>

#### Support Lifecycle

Microsoft Mainstream support end date was 10.4.2012

Microsoft Extended support end date is 11.4.2017

(<https://support.microsoft.com/en-us/gp/lifeselectindex>)

See also SAP Note <http://service.sap.com/sap/support/notes/1177282> "End of Support for SAP Releases Using Microsoft Products"

### 1.6.2 Windows 7 Professional and Enterprise

#### Minimum setup

- PC with 1-GHz 32-bit (x86) or 64-bit (x64) processor
- 1 gigabytes (GB) of RAM (32-bit) or 2 gigabytes (GB) of RAM (64-bit)
- 16 gigabytes (GB) of disk space (32-bit) or 20 gigabytes (GB) of disk space (64-bit)
- Video adapter and monitor with the resolution 1024 x 768
- Keyboard and mouse or some other pointing device
- 10 Mbps network interface card
- 1 free USB port (version 2.0)
- 32-bit Internet Explorer 11 with the familiar user experience (not with the new Windows UI)

#### Recommended setup (minimum setup with the following modifications)

- 100/1000 Mbps network interface card

#### Additional requirements

- A USB audio device with a microphone and a speaker is required, unless MTD mode is used.
- Call controls (such as hook switch and mute) on the USB device (optional).
- A sound card for playing the ringing tone on the PC speaker (optional)
- See also: <http://windows.microsoft.com/en-us/windows7/products/system-requirements>

#### Support Lifecycle

Microsoft Mainstream support end date was 13.1.2015

Microsoft Extended support end date is 14.1.2020

(<https://support.microsoft.com/en-us/gp/lifeselectindex>)

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See also SAP Note <http://service.sap.com/sap/support/notes/1177282> "End of Support for SAP Releases Using Microsoft Products"

### **1.6.3 Windows 8 and 8.1 Pro and Enterprise**

#### **Minimum setup**

- ▶ PC with 1-GHz 32-bit (x86) or 64-bit (x64) processor with support for PAE, NX and SSE2
- ▶ 1 gigabytes (GB) of RAM (32-bit) or 2 gigabytes (GB) of RAM (64-bit)
- ▶ 16 gigabytes (GB) of disk space (32-bit) or 20 gigabytes (GB) of disk space (64-bit)
- ▶ Video adapter and monitor with the resolution 1024 x 768
- ▶ Keyboard and mouse or some other pointing device
- ▶ 10 Mbps network interface card
- ▶ 1 free USB port (version 2.0)
- ▶ Internet Explorer 11 with the familiar user experience (not with the new Windows UI)

#### **Recommended setup** (minimum setup with the following modifications)

- ▶ 100/1000 Mbps network interface card

#### **Additional requirements**

- ▶ A USB audio device with a microphone and a speaker is required, unless MTD mode is used.
- ▶ Call controls (such as hook switch and mute) on the USB device (optional).
- ▶ A sound card for playing the ringing tone on the PC speaker (optional)
- ▶ See also: <http://windows.microsoft.com/en-us/windows-8/system-requirements>

**NOTE!** Windows 8 desktop UI is supported, not Windows 8 modern UI.

**NOTE!** Windows 8 is supported only until the 12<sup>th</sup> of January 2016.

#### **Support Lifecycle**

Microsoft Mainstream support end date is 9.1.2018 (Windows 8.1)

Microsoft Extended support end date is 10.1.2023 (Windows 8.1)

<https://support.microsoft.com/en-us/lifecycle?C2=16796>

See also SAP Note <http://service.sap.com/sap/support/notes/1177282> "End of Support for SAP Releases Using Microsoft Products"

### **1.6.4 Windows 10 Pro and Enterprise**

#### **Minimum setup**

- ▶ PC with 1-GHz processor
- ▶ 1 gigabytes (GB) of RAM (32-bit) or 2 gigabytes (GB) of RAM (64-bit)
- ▶ 16 gigabytes (GB) of disk space (32-bit) or 20 gigabytes (GB) of disk space (64-bit)
- ▶ Video adapter and monitor with the resolution 1024 x 768
- ▶ Keyboard and mouse or some other pointing device
- ▶ 10 Mbps network interface card
- ▶ 1 free USB port (version 2.0)
- ▶ Internet Explorer 11 with the familiar user experience (not with the new Windows UI)

#### **Recommended setup** (minimum setup with the following modifications)

- ▶ 100/1000 Mbps network interface card

#### **Additional requirements**

- ▶ A USB audio device with a microphone and a speaker is required, unless MTD mode is used.
- ▶ Call controls (such as hook switch and mute) on the USB device (optional).
- ▶ A sound card for playing the ringing tone on the PC speaker (optional)
- ▶ See also: <https://www.microsoft.com/en-us/windows/windows-10-specifications>

**Support Lifecycle**

Microsoft Mainstream support end date is 13.10.2020

Microsoft Extended support end date is 14.10.2025

(<https://support.microsoft.com/en-us/gp/lifeselectindex>)

See also SAP Note <http://service.sap.com/sap/support/notes/1177282> "End of Support for SAP Releases Using Microsoft Products"

## 1.7 USB Devices

Most USB devices used with SAP Contact Center contain logically three different devices. These are

- sound playback (speaker)
- sound capture (microphone)
- Human Interface device (HID)

SAP Contact Center uses any audio devices, that is, speakers and microphones, directly via audio services provided by the operating system. In most cases, these devices don't need any SAP Contact Center adaptation module and, for example, corded USB audio devices work without any adaptation module being installed. SAP Contact Center adaptation modules enables usage of HID devices, which provide controls, such as, hook switch, mute, open audio path and close audio path. SAP Contact Center adaptation modules for supported devices are available as Windows installer files, for example, terminal\_HS\_USBHID.msi. See SAP Contact Center Client Workstation Guide for installation instructions of the adaptation modules.

Wireless devices usually require that SAP Contact Center opens the audio path between the cradle and the device when a call begins and that SAP Contact Center closes the audio path when the call ends. The audio path control is done using the HID device and thus, wireless devices usually require that an appropriate adaptation module is installed.

Call control in the following tables refer to, at a minimum, hook-off and hook-on for answering and terminating calls. When appropriate, it may also include additional functionality, such as open line and close line. This kind of functionality is usually unnoticed by users and perceived as being part to the hook-off or hook-on event. All call control events are not supported by all devices. For example, rejecting an incoming call is in most cases possible only by using controls in CDT.

The compatibility tables list compatible USB devices, their key features and the adaptation module supporting the logical HID device.

- SDK based adaptation modules are terminal\_HS\_GNNNetcom.msi, terminal\_HS\_Plantronics.msi and terminal\_HS\_PlantronicsV2.msi. See remarks in the compatibility tables for respective devices. Terminal\_HS\_GNNNetcom.msi and terminal\_HS\_Plantronics.msi are obsolete but included to support old devices.
- Ini file and terminal\_HS\_HIDHS.msi based adaptation. This is used in SAP BCM 6 and SAP Contact Center7 until SP4 and this method is a predecessor to terminal\_HS\_USBHS.msi based adaptation, which obtain the information in the ini file and more directly from the device. This method is obsolete but included to support existing installation base.
- Terminal\_HS\_USBHS.msi based adaptation. This method reads HID descriptors from the device to obtain information about available controls and how to use them and doesn't use ini -files. This is supported since SAP Contact Center7 SP4 and is generally **the recommended alternative**. See the USBHID column in the compatibility tables for respective devices.

**NOTE!** Up till SAP Contact Center7 SP5 **only one of these alternative methods should be used** on any workstation. From SAP Contact Center7 SP6 and onwards **more than one of the above** terminal\_HS\_XXX.msi files can be used. In this case, selection rules are configured in a handset.ini file.

**Recommendation:** Do not install terminal\_HS\_XXX.msi files that are not needed.

**1.7.1 USB Handsets and Speaker Phones**

Product	Manufacturer	Call control	Volume ctrl	Dial-pad	Mute	HID	USBHID	Remark
CX100	Polycom	X	X <sup>3)</sup>		X	X		
DIAL 550	Jabra	X	X <sup>3)</sup>	X <sup>b)</sup>	X		X	USB speaker phone with dial-pad
SPEAK 410	Jabra	X	X <sup>3)</sup>			X	X	USB Speaker phone, no dial-pad.
SPEAK 510	Jabra	X	X <sup>3)</sup>		X		X	Requires SAP CCtr SP7
SP 10, SP 10 ML	Sennheiser	X	X		X		X	Requires FW 1.2.14 or later
SP 20, SP 20 ML	Sennheiser	X	X		X		X	Requires FW 1.2.14 or later
VX-200	Vitelix							
<b>EOL Products</b>								
CX200	Polycom	X	X <sup>3)</sup>		X	X		Not supported when Office Communicator is installed.
MCD100	Plantronics		X <sup>2)</sup>		X			Speaker phone / audio only device. EOL

- 1) Device volume control complies with CDT (audio)
- 2) Device volume control affects CDT wave
- 3) Device volume control does not affect CDT volume settings
- a) Requires driver
- b) Dialed digits are sent to CDT. A hook-off in CDT is required to fire the call

**1.7.2 Wireless Handsets**

Product	Manufacturer	Call control	Volume. ctrl	Mute	B/D	HID	USBHID	Remark
Handset 450	Jabra	X	X <sup>3)</sup>	X	D		X	1. Lifting off the handset from the cradle does not cause digits previously entered in CDT to be sent. 2. It is possible to answer and dial calls with the handset placed in the cradle. In this case, audio will not be (well) heard as the device is not a speaker phone. 3. Adjusting volume will bring up the Windows (B&W) on-screen volume bar but it will not adjust the Windows volume.

- 1) Device volume control complies with CDT (audio)
- 2) Device volume control affects CDT wave
- 3) Device volume control does not affect CDT volume settings

1.7.3 USB Headsets

Product	Manufacturer	Call control	Volume ctrl	Mute	HID	USBHID	Remark
BIZ 2300 USB	Jabra	X	X <sup>(3)</sup>	X		X	
Evolve 20 UC	Jabra	X	X <sup>(3)</sup>	X		X	
Evolve 30 UC	Jabra	X	X <sup>(3)</sup>	X		X	
Evolve 40 UC	Jabra	X	X <sup>(3)</sup>	X		X	
Evolve 80	Jabra	X	X <sup>(3)</sup>	X		X	Tested only with Windows 10.
UC Voice 150	Jabra	X				X	FW 2.47 or later
UC Voice 250	Jabra	X				X	FW 2.48 or later
UC Voice 550	Jabra	X	X		X	X	FW 1.12 or later
UC Voice 750	Jabra	X				X	FW 0.5 or later
BIZ 2400 II USB BT	Jabra	X	X	X		X	
BIZ 2400 II USB CC	Jabra	X	X	X		X	
BIZ 1500 Duo USB	Jabra	X	X <sup>(3)</sup>	X		X	
<b>Blackwire 400 Series</b>							USB version 144 and above. SAP Cctr 7 SP2. <sup>(5)</sup>
C435	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>			<sup>(5)</sup>
C435-M	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>			<sup>(5)</sup>
<b>Blackwire 700 Series</b>							
C725	Plantronics	X	X <sup>(3)</sup>	X		X	Tested only with Windows 10.
<b>VXi</b>							
X200	VXi	X	X <sup>(2)</sup>	X <sup>(4)</sup>		X	Requires SAP Cctr 7 SP5. Tested only with Windows 7.
Vxi Envoy Office 2031U, Stereo, HDST	VXi	X	X	X		X	
Vxi Envoy Office, 2010U, Mono, HDST	VXi	X	X	X		X	Tested only with Windows 10.
X100-V	VXi	X	X	X		X	Tested only with Windows 10.
X200-V	VXi	X	X	X		X	Tested only with Windows 10.
<b>EOL Products</b>							
<b>Blackwire 200 Series</b>							USB version 144 and above. SAP Cctr 7 SP2. <sup>(5)</sup>
C210	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>			<sup>(5)</sup>
C220	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>			<sup>(5)</sup>
<b>Blackwire 400 Series</b>							USB version 144 and above. SAP Cctr 7 SP2. <sup>(5)</sup>
C420	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>			<sup>(5)</sup>
C420-M	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>			<sup>(5)</sup>
<b>Blackwire 600 Series</b>							USB version 144 and above. SAP Cctr 7 SP2. <sup>(5)</sup>
C610	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>			<sup>(5)</sup>
C610-M	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>			<sup>(5)</sup>
C620	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>			<sup>(5)</sup>
C620-M	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>			<sup>(5)</sup>
HW251N-USB	Plantronics		X <sup>(3)</sup>	X	X		EOL
Audio 615M	Plantronics		X <sup>(3)</sup>	X			EOL Replacement – Blackwire C210

SAP CONTACT CENTER COMPATIBILITY LIST

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Audio 630M	Plantronics		X <sup>(3)</sup>	X			EOL. Replacement – Blackwire C220
GN 2000 USB	GN Netcom						
GN 2100 USB	GN Netcom		X <sup>(3)</sup>	X			EOL
GN 5025	GN Netcom		X <sup>(3)</sup>	X			EOL
GN 5035	GN Netcom		X <sup>(3)</sup>	X			EOL
BIZ 620 mono/duo	Jabra	X		X	X	X	
BIZ 2400 USB OC	Jabra	X		X	X	X	
PC35	Sennheiser						EOL

- 1) Device volume control complies with CDT (audio)
- 2) Device volume control affects CDT wave
- 3) Device volume control does not affect CDT volume settings
- 4) CDT and device MUTE are synchronized
- 5) Requires installation of `SpokesSDKNativeRuntime.msi` available in the SAP Contact Center installation package (Client Workstation Components> contents> 3rd\_party).

Sennheiser Corded headsets	Call control	Volume control	Mute	USBHID	Remark
SC 30 USB CTRL SC 30 USB ML	•	◦	•	•	Requires FW 15-05-4C_Rev_0412 or later
SC 60 USB CTRL SC 60 USB ML	•	◦	•	•	Requires FW 15-05-4C_Rev_0412 or later
SC 40 USB CTRL	•	•	•	•	Tested with factory settings and with Windows 10 only.
SC 45 USB CTRL	•	•	•	•	Tested with factory settings and with Windows 10 only.
SC 70 USB CTRL	•	•	•	•	Tested with factory settings and with Windows 10 only.
SC 75 USB CTRL	•	•	•	•	Tested with factory settings and with Windows 10 only.
SC 230 USB CTRL II SC 230 USB MS II	•	◦	•	•	Requires FW 15-05-4C_Rev_0412 or later
SC 230 USB CTRL	•	•	•	•	Tested with factory settings and with Windows 10 only.
SC 260 USB CTRL II SC 260 USB MS II	•	◦	•	•	Requires FW 15-05-4C_Rev_0412 or later
SC 630 USB CTRL SC 630 USB ML	•	◦	•	•	Requires FW 15-05-4C_Rev_0412 or later
SC 660 USB CTRL SC 660 USB ML	•	◦	•	•	Requires FW 15-05-4C_Rev_0412 or later

Volume control:

- Device volume control does not affect CDT and Windows volume settings
- Volume controls affect CDT and Windows volume



SC 60 USB CTRL



SC 230/260 USB CTRL II



SC 630/660 USB ML





SC 230 USB CTRL



SC 70 USB CTRL



SC 45 USB CTRL



SC 75 USB CTRL



SC 40 USB CTRL

1.7.4 Wireless Headsets

Product	Manufacturer	Call control	Volume. ctrl	Mute	B/D	HID	USBHID	Remark
Evolve 65	Jabra	X	X	X	B		X	
Motion Office	Jabra	X	X <sup>(3)</sup>	X <sup>(4)</sup>	B		X	Calls are not answered by lifting headset off base Incoming calls cannot be rejected from base or headset Number entered in CDT cannot be dialed from headset Simultaneous calls from different sources are not tested.
Motion UC	Jabra	X	X	X	B		X	Incoming calls cannot be rejected from headset Number entered in CDT cannot be dialed from headset Volume increments and decrements are of different size. It is recommended to use Windows or CDT volume controls. Simultaneous calls from different sources are not tested.
Pro 930	Jabra	X	X <sup>(3)</sup>		D	X	X	
Pro 935	Jabra	X	X <sup>(3)</sup>	X <sup>(4)</sup>	B		X	Incoming calls cannot be rejected from base or headset Number entered in CDT cannot be dialed from headset Simultaneous calls from different sources are not tested.
Pro 9450	Jabra	X	X <sup>(3)</sup>		D	X	X	
Pro 9460	Jabra	X	X <sup>(3)</sup>		D	X	X	
Pro 9465	Jabra	X	X <sup>(3)</sup>		D	X	X	
Pro 9470	Jabra	X	X <sup>(3)</sup>		D	X	X	
Supreme UC	Jabra	X	X	X	B		X	Incoming calls cannot be rejected from headset Number entered in CDT cannot be dialed from headset Volume increments and decrements are of different size. It is recommended to use Windows or CDT volume controls. Simultaneous calls from different sources are not tested.
Evolve 75	Jabra	X	X <sup>(3)</sup>	X	B		X	
<b>Savi 430</b>								<sup>(5)</sup>
W430	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
W430-M	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
<b>Savi 440</b>								<sup>(5)</sup>
W440	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
W440-M	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
<b>Savi 700 Series</b>								Base firmware 19.74 Headset firmware 19.30 USB firmware 160. <sup>(5)</sup>
W710	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
W720	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
W730	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
W730-M	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
W740	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
W740-M	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
W745	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
<b>Savi Go</b>								<sup>(5)</sup>
WG100/B	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	B			<sup>(5)</sup>
WG101/B	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	B			<sup>(5)</sup>
<b>Voyager Focus UC</b>								
B825	Plantronics	X	X <sup>(3)</sup>	X	B		X	Tested only with Windows 10.
<b>Voyager Legend UC</b>								
B235	Plantronics	X	X <sup>(3)</sup>	X	B		X	Tested only with Windows 10.
<b>EOL Products</b>								

<b>Voyager Pro UC with BUA-200 adapter</b>								USB version 633 and above. Adapter version 33.6 and above. <sup>(5)</sup>
WG200/B	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	B			<sup>(5)</sup>
WG201/B	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	B			<sup>(5)</sup>
<b>Voyager Pro UC with SmartSensor technology and BT300</b>								<sup>(5)</sup>
B230	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	B			<sup>(5)</sup>
B230-M	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	B			<sup>(5)</sup>
<b>Savi Office</b>								<sup>(5)</sup>
WO100	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
WO101	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
W200	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
WO201	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
WO300	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
WO350	Plantronics	X	X <sup>(3)</sup>	X <sup>(4)</sup>	D			<sup>(5)</sup>
CS60-USB	Plantronics		X <sup>(3)</sup>		D			<sup>(5)</sup> or alternatively as a HID device
Voyager 520	Plantronics				B			EOL
GN 9330	GN Netcom	X	X <sup>(3)</sup>		D			EOL
GN 9330e	GN Netcom	X			D			Alternatively as a HID device
GN 9350	GN Netcom	X			D			EOL
GN 9350e	GN Netcom	X	X <sup>(3)</sup>		D			Alternatively as a HID device
BT5010	GN Netcom				B			EOL
GO 660	Jabra	X	X <sup>(3)</sup>		B	X	X	Jabra Extreme HS + Link 320
GO 6430	Jabra	X	X <sup>(3)</sup>		B	X	X	
GO 6470	Jabra	X	X <sup>(3)</sup>		B	X	X	
Supreme UC	Jabra	X	X	X	B		X	Incoming calls cannot be rejected from headset Number entered in CDT cannot be dialed from headset Volume increments and decrements are of different size. It is recommended to use Windows or CDT volume controls. Simultaneous calls from different sources are not tested.

B/D Bluetooth / Dect

- 1) Device volume control complies with CDT (audio)
- 2) Device volume control affects CDT wave
- 3) Device volume control does not affect CDT volume settings
- 4) CDT and device MUTE are synchronized
- 5) Requires installation of SpokesSDKNativeRuntime.msi available in the SAP Contact Center installation package (Client Workstation Components> contents> 3rd\_party).

Multi-call scenarios (e.g. connected to mobile and PC) are not tested / supported by SAP.

Sennheiser Wireless	Call control	Volume control	Mute	Wireless technology	USB/HID	Remark
DW Office *SD Office, *SD Office ML	•	◦	•	D	•	Incoming call is not answered by lifting headset off base Call cannot be rejected from headset Number entered in CDT cannot be dialed from headset. DIP 4 must be in the "UP" position.
DW Office ML	•	◦	•	D	•	Tested with Windows 10 only.
DW Pro 1, DW Pro 1 ML *SD Pro 1, *SD Pro 1 ML	•	◦	•	D	•	See DW/SD Office.
DW Pro 2, DW Pro 2 ML *SD Pro 2, *SD Pro 2 ML	•	◦	•	D	•	See DW/SD Office
MB Pro 1 UC, MB Pro 1 UC ML MB Pro 2 UC, MB Pro 2 UC ML	•	◦	•	BT	•	CDT ringer is not played on headset Call cannot be rejected from headset Number entered in CDT cannot be dialed from headset.
D 10 USB, D 10 USB ML	•	◦	•	D	•	
Presence UC Presence UC ML	•	◦	•	BT	•	CDT ringer is not played on headset Call cannot be rejected from headset Number entered in CDT cannot be dialed from headset.
MB 660 UC	•	◦	•	BT	•	Call cannot be rejected from headset

Volume control:

- Device volume control does not affect CDT and Windows volume settings
- Volume controls affect CDT and Windows volume.

Multi-call scenarios (e.g. connected to mobile and PC) are not tested / supported by SAP.

\* SD Office, SD Pro 1 and SD Pro 2 are available in US and Canada only.



MB Pro 1



DW Pro 2



Presence UC

### 1.7.5 USB Adapters for Analog Headsets

The digital side of USB adapters connects to USB ports on workstations. The adapters provide conversion between digital and analog audio and they may also provide hook switch and other controls. The analog side of the adapters connects to analog headsets using a manufacturer specific connector. The SAP Contact Center interfacing component is the USB adapter and analog headsets are not tested for compatibility. Information on analog headsets that are compatible with the adapters can be found from the manufacturers.

Product	Manufacturer	Call control	Volume ctrl	Mute	HID	USBHID	Remark
LINK 220	Jabra						Device has no controls
LINK 230	Jabra						Device has no controls
LINK 265	Jabra	X		X <sup>(5)</sup>		X	
LINK 280	Jabra	X	X <sup>(3)</sup>	X <sup>(5)</sup>	X	X	
LINK 320	Jabra						Functions depends on attached headset
LINK 350	Jabra						Functions depends on attached headset
							<sup>(5)</sup>
DA-45	Plantronics	X	X <sup>(3)</sup>				Can also be used as HID device
DA80	Plantronics	X	X	X			<sup>(6)</sup>
Savi D100	Plantronics	X	X <sup>(3)</sup>	X <sup>(5)</sup>			USB DECT adapter. Adapter FW ver. 19.44, USB ver. 161
							<sup>(5)</sup>
USB-ED CC 01	Sennheiser	X	X	X		X	Tested with Windows 10 and headset SC 230. No call reject on the device.
X50	VXi					X	Device has no controls. To be used with analog headsets, for example ProSet 10V.
<b>EOL Products</b>							
GN 8110	GN Netcom						EOL, Replaced by LINK 220
GN 8120	GN Netcom		X <sup>(3)</sup>	X			EOL, Replaced by LINK 280. Also HID supportable.
DA-40	Plantronics						EOL
DA-60	Plantronics		X <sup>(3)</sup>	X			EOL <sup>(7)</sup>
Uusb1	Sennheiser						EOL
Uusb2	Sennheiser						EOL






HID Support for HID devices must be installed on the client workstation (terminal\_HS\_HIDHS.msi) instead of selecting any supported audio devices in the installation wizard (terminal.msi) .

- 1) Device volume control complies with CDT (audio)
- 2) Device volume control affects CDT wave
- 3) Device volume control does not affect CDT volume settings
- 4) Volume adjustment is local on the device.
- 5) CDT and device MUTE are synchronized
- 6) Requires installation of terminal\_HS\_PlantronicsV2.msi (also installable with the terminal.msi wizard) and Plantronics Enterprise Software SDK version 2.4, downloadable for free at <http://www.plantronics.com/us/support/software-downloads/enterprise-sdk.jsp>.
- 7) Requires installation of terminal\_HS\_Plantronics.msi instead terminal\_HS\_PlantronicsV2.msi and Plantronics SDK 2.4. Not installable using the installation wizard.

## 1.8 SIP Desk Phones

Listed SIP phones perform the following operations properly with SAP Contact Center: register, inbound call, outbound call, hold, transfer and sending DTMF. The operations work using any of the transport protocols UDP, TCP or TLS. Exceptions and prerequisites or other requirements may be included in table. Additional features present on the phone may or may not work. See SAP Note 1872998 for configuring hold formats.

Product	Manufacturer	Codec	Remark
<b>7911G</b>	Cisco	G.711, G.729	
SPA502G	Cisco	G.711, G.729	Requires SW version 7.4.4. or later
Konftel 300 IP	Konftel	G.711, G.729	
IP 331	Polycom	G.711, G.729	
IP 560	Polycom	G.711, G.729	
IP 7000	Polycom	G.711, G.729	
Snom 300	Snom Tech.	G.711, G.729	FW: snom300-SIP 8.2.29 20813 or later.
Snom 320	Snom Tech	G.711, G.729	FW: snom320-SIP 8.2.35 29727 or later.
Snom 820	Snom Tech	G.711, G.729	FW: snom820-SIP 8.32.25 17587 or later.
Snom 821	Snom Tech	G.711, G.729	FW: snom821-SIP 8.4.12 29489 or later.
<b>EOL Products</b>			
7905G	Cisco	G.711, G729	EOL
7912G	Cisco	G.711, G729	EOL
7941G	Cisco	G.711, G.729	EOL
7960G	Cisco	G.711, G.729	EOL
SPA921-EU	Linksys	G.711, G.729	EOL. Replacement SPA502G.
SPA922-EU	Linksys	G.711, G.729	EOL. Replacement SPA502G.
SPA941-EU	Linksys	G.711, G.729	EOL. Replacement SPA502G.
IP 301	Polycom	G.711, G.729	EOL
IP 330	Polycom	G.711, G.729	EOL
IP 501	Polycom	G.711, G.729	EOL
IP 4000	Polycom	G.711, G.729	EOL

Innovaphone		IP232	IP222	IP241	IP240	IP110
Admin	TFTP	C/U	C/U	C/U	C/U	C/U
	Web administration	•	•	•	•	•
	Minimum version	10	10	10	10	10
Time & date	NTP client	•	•	•	•	•
	Time zone	•	•	•	•	•
	Daylight savings	•	•	•	•	•
Phone	Number of lines	6	6	6	6	6
	Function keys	2 x 6	2 x 6	7 + 8	7 + 8	4
	Speaker	HD speaker	HD speaker	•	•	•
	Display	Color 480 x 272 touch screen	Color 320 x 240	Color 320 x 240	Black/White 128 x 64	Black/White
	Keyboard	In-Screen Alphanumeric	Numeric	Alphanumeric	Alphanumeric	Numeric
	Multi-language	18	18	18	18	18
Voice	PCMA	•	•	•	•	•
	PCMU	•	•	•	•	•
	G.729	•	•	•	•	•
Network	Ethernet	2 x GigE	2 x GigE	2 x GigE	2 x 10/100	2 x 10/100
	LAN/PC port	•	•	•	•	•
	Power over Ethernet	•	•	•	•	•
	DHCP client	•	•	•	•	•
	VLAN	•	•	•	•	•
	Voice QoS					
Security	HTTPS	•	•	•	•	•
	TLS	•	•	•	•	•
	SIP authentication	•	•	•	•	•
Notes	Design-price awarded	Design-price awarded				
	 reddot design award winner 2011					





YEALINK		SIP-T20P	SIP-T22P	SIP-T26P	SIP-T28P	SIP-T32G	SIP-38G	VP530
Admin	TFTP	C/U	C/U	C/U	C/U	C/U	C/U	C/U
	Web administration	•	•	•	•	•	•	•
	Minimum version	V9.70.0.130	V7.70.0.130	V6.70.0.130	V2.70.0.130	V32.70.0.105	V38.70.0.115	V23.70.0.40
Time & date	NTP client	•	•	•	•	•	•	•
	Time zone	•	•	•	•	•	•	•
	Daylight savings	•	•	•	•	•	•	•
Phone	Number of lines	2 lines	3 lines	3 lines	6 lines	3 lines	6 lines	4 lines
	DSS KEY	-	-	10 keys	10 keys	-	10 keys	18 keys
	Speaker	HD speaker	HD speaker	HD speaker	HD speaker	HD speaker	HD speaker	HD speaker
	Display	3-line LCD (2 x 15 characters and an icon)	132x64 graphic LCD	132x64 graphic LCD	320 x 160 gray scale	3" TFT-LCD, 400 x 240 pixel, 262K colors	4.3" TFT-LCD, 480 x 272 pixel, 16.7M colors	7" 800x480 digital LCD, Touch screen
	Multi-language	> 20	> 20	> 20	> 20	> 20	> 20	> 20
Voice	PCMA	•	•	•	•	•	•	•
	PCMU	•	•	•	•	•	•	•
	G.729	•	•	•	•	•	•	•
Network	Ethernet	10/100M	10/100M	10/100M	10/100M	10/100/1000	10/100/1000	10/100M
	LAN/PC port	10/100M	10/100M	10/100M	10/100M	10/100/1000	10/100/1000	10/100M
	Power over Ethernet	•	•	•	•	•	•	•
	DHCP client	•	•	•	•	•	•	•
	VLAN	•	•	•	•	•	•	•
	Voice QoS	•	•	•	•	•	•	•
Security	HTTPS	•	•	•	•	•	•	•
	TLS	•	•	•	•	•	•	•
	SIP authentication	•	•	•	•	•	•	•





SIP-T22P



SIP-T28P



SIP-T32G



SIP-T38G

Since established in 2001, Yealink, the global TOP 5 SIP Phone provider, has been committed to designing and manufacturing innovative, highly stable and easy to deploy IP phones with reasonable price and rapid technical support. The company has adopted the first class solutions and technologies such as TI Chipset, and has become the determined choice of the industry's leading VoIP service providers, hosted VoIP, IP PBX and Unified Communications solution vendors.

## 1.9 Mobile Phones

Supported platforms for CMC are:

Nokia S60 3<sup>rd</sup> edition

Nokia S60 5<sup>th</sup> edition

The platforms of Nokia devices are found at <http://www.forum.nokia.com>.

## 1.10 Other

### 1.10.1 Analog Adapters and Gateways

Product	Manufacturer	Remark
ATA 186	Cisco	
IP21	Innovaphone	
MP-112	Audiocodes	
MP-114	Audiocodes	
MP-118	Audiocodes	
MP-124D	Audiocodes	

Analog adapters are used to connect analog terminals, e.g. fax devices, to Voice over IP systems such as SAP Contact Center.

### 1.10.2 Cameras

Product	Manufacturer	Remark
QuickCam Pro 5000	Logitech	EOL
QuickCam Pro 9000	Logitech	EOL

### 1.10.3 Outbound Predictive Dialer

Product	Manufacturer	Remark
SoftDial	Sytel	Version 10.5.

### 1.10.4 Fax

Fax server is used e.g. to receive customer service related faxes such as orders. Fax server receives incoming fax, converts it to file/picture format and sends fax as email attachment to defined email address for SAP Contact Center to be retrieved routed to customer service agents.

### 1.10.5 SMS

SMS messages are transmitted and received by SAP Contact Center as e-mails to/from a SMS service on the network.

### 1.10.6 SIP Integrated IVR

Product	Manufacturer	Remark
Holly Voice Platform	West Corporation	See details below

The Holly Voice Platform (HVP) is a SIP based IVR platform. It is certified VoiceXML 2.0 and 2.1 compliant and supports CCXML 1.0. The current version (in 2014) is HVP 6.0 SP2. The Holly Voice Platform is supported on the following systems:

- Red Hat Enterprise Linux 6.x i386 or x86-64
- CentOS release 6.x i386 or x86-64
- Red Hat Enterprise Linux/CentOS 5.4+ i386
- Solaris 10 update 4 or greater

Minimum configuration: 2 GB Memory, 1.5 GB spare disk, 2 GHz or greater CPU

In addition to on premise solutions West provides several hosted Holly configurations. These solutions can be accessed by both PSTN and SIP. Applications can be developed and hosted by West or developed by the customer and run on the West infrastructure.

## 2 SAP CONTACT CENTER COMPATIBLE PRODUCTS

Compatible indicates that SAP Labs has tested the product once but does not re-test newer versions.

### 2.1 Wireless Handsets/IP Desk Phones

Product	Manufacturer	Remark
KIRK Wireless Server 300	Polycom	PCS05 Build 24363 or later. Tested with BCM 6 only.

KWS 300 is a DECT/SIP gateway enabling DECT wireless phones to connect to SAP Contact Center as SIP phones. The wireless DECT phones KIRK 4040 and KIRK 5020 were used in the test and they appear to SAP Contact Center as standard SIP phones.

### 2.2 IP PBX and UC Systems

Product	Manufacturer	Remark
Lync	Microsoft	

### 2.3 Telecom Operator Provided SIP Trunks

Product	Manufacturer	Remark
SIP trunk	TDC Sweden TDC Norway	Requires SAP Contact Center 7 SP8. See KB-article 2081828 – “Configuring SAP Contact Center for TDC Sweden/Norway SIP trunks”
SIP trunk	BT UK	Certified in May 2012. Fax excluded.

### 2.4 Virtualization Solutions

Product	Manufacturer	Remark
VMware ESXi 5.0	VMware	More info in VMware compatibility statement in SAP Support Portal
XenApp 6.5 Receiver 14.0.1.4	Citrix	Shared Server Desktop. See <b>Citrix compatibility statement with SAP CCtr 7</b> in SAP Support Portal for limitations and additional information.
XenDesktop 7	Citrix	Citrix Desktop virtualization. See <b>Citrix compatibility statement with SAP CCtr 7</b> in SAP Support Portal for limitations and additional information.

### 3 SAP CONTACT CENTER USER VERIFIED PRODUCTS

The user verified category lists products that customers have reported to be compatible with SAP Contact Center. The information is provided as such and SAP does not in any way guarantee that the products work.

**NOTE! There is a separate SAP Contact Center Compatibility List for the Cloud Edition.**

#### 3.1 IP PBX and UC Systems

Product	Manufacturer	Remark
Alcatel OXE, Release 9.0, Patch H1.301.34	Alcatel	The PBX is connected to SAP CCtr directly using SIP without any intermediate gateway. BCM hotfix 6.0.7.4 is required. Tested with BCM 6 only.
Asterisk 1.8.4.4	Open Source Digium	Settings in /etc/asterisk/sip.conf [general] dtmfmode = auto relaxdtmf=yes compactheaders = no  Reload SIP channel with <i>module reload chan_sip.so</i> in Asterisk CLI. Disable PRACK (100rel) in SAP CCtr
	Alcatel-Lucent	R9.1 -i1.605.-27 see SAP Note 1956400 for additional info
	Alcatel-Lucent	R9.1 -i1.605.-29 see SAP Note 1956400 for additional info
	Alcatel-Lucent	R9.1 -i1.605.-39-pl-c82 see SAP Note 1956400 for additional info
	Alcatel-Lucent	R10.0-j1.410-38-c-it-c0 see SAP Note 1956400 for additional info
	Alcatel-Lucent	R10.1-j2.603-13-f see SAP Note 1956400 for additional info

#### 3.2 Telecom Operator Provided SIP Trunks

Product	Manufacturer	Remark
SIP trunk	TDC Finland	
SIP trunk	TeliaSonera Finland	
SIP trunk	BT Germany	
SIP trunk	Verizon	

## 4 SAMPLE SAP CONTACT CENTER SERVERS

These are SAP Contact Center server hardware examples only. For further information, please review SAP Contact Center Infrastructure document.

### 4.1 Small In-House Setup Using Windows Server 2008

**The setup contains the following servers:**

- 1 SQL Server Cluster
- 1 SAP CCtr Application server(s) (1 + as Connection Server in DMZ if CMC is used)

**SQL Server:**

- x86 cluster server with 1 or more CPUs
- 8 GB or more RAM
- 2 or more 100/1000 Base-T Ethernet ports per node
- Redundant (e.g. RAID 1 (2x15K drives)) 73 GB or more disk space for op.sys and applications per node
- Redundant (e.g. RAID 5 or 1+0 (15K hot pluggable drives)) 500 GB or more disk space for databases
- Redundant Power Supply
- Redundant ventilators
- Windows Server 2008 64-bit Enterprise edition (English recommended) (2 node failover cluster possible with Standard edition)
- SQL Server 2008 Standard 64-bit (English)

**SAP Contact Center Application servers:**

- x86 server with 1 or more CPUs
- 4 GB or more RAM
- 1 or more 100/1000 Base-T Ethernet ports per node
- Redundant (e.g. RAID 1(2x15 K drives)) 73 GB or more disk space
- Redundant Power Supply
- Windows Server 2008 64-bit Standard edition (English recommended)

## 4.2 Basic Service Provider Setup Using Windows Server 2008

### The setup contains the following servers:

- 1 SQL Server Cluster
- 2 SAP CCtr Application servers (+ 1 as Connection Server in DMZ if CMC is used)
- 1 SAP CCtr Reporting Server

### SQL Server:

- x86 cluster server with 1 or more CPUs
- 16 GB or more RAM
- 2 or more 100/1000 Base-T Ethernet ports per node
- Redundant (e.g. RAID 1 (2x15K drives)) 73 GB or more disk space for op.sys and applications per node
- Redundant (e.g. RAID 5 or 1+0 (15K hot pluggable drives)) 1 TB or more disk space for databases
- Redundant Power Supply
- Redundant ventilators
- Windows Server 2008 64-bit Enterprise edition (English recommended)
- SQL Server 2008 Standard 64-bit (English)

### SAP Contact Center Reporting (SQL) server:

- x86 server with 1 or more CPUs
- 8 GB or more RAM
- 1 or more 100/1000 Base-T Ethernet ports per node
- Redundant (e.g. RAID 1 (2x15K drives)) 73 GB or more disk space for op.sys and applications
- Redundant (e.g. RAID 5 or 1+0 (15K hot pluggable drives)) 146 GB or more disk space for databases
- Redundant Power Supply
- Windows Server 2008 64-bit Standard edition (English recommended)
- SQL Server 2008 Standard 64-bit (English)

### SAP Contact Center Application servers:

- x86 server with 1 or more CPUs
- 4 GB or more RAM
- 2 100/1000 Base-T Ethernet ports per node
- Redundant (e.g. RAID 1 (2x15K drives)) 73 GB or more disk space
- Redundant Power Supply
- Windows Server 2008 64-bit Standard edition (English recommended)



### 4.3 Service Provider Setup with SAN Using Windows Server 2008

**The setup contains the following servers:**

- 1 SQL Server Cluster (Can serve several SAP CCtr systems)
- 2 or more SAP CCtr Application servers (1 in core and 1 in access NW)
- 2 or more SAP CCtr failover Application servers (1 per NW, each can backup several application servers but usually only 1 at a time)
- 1 SAP CCtr Reporting Server
- 1 SAP CCtr Application server as Connection Server in the DMZ, if CMC is used (optional)
- 1 SAP CCtr Application server as Management server. (Can serve several SAP CCtr systems)

**SQL Server: (SQL cluster is made of two or more of these)**

- x86 server with 1 or more CPUs
- 16 GB or more RAM
- 2 or more 100/1000 Base-T Ethernet ports per node
- Redundant (e.g. RAID 1 (2x15K drives)) 73 GB or more disk space for op.sys and applications per node
- 1 or more HBA (host bus adapter) for SAN connection and database storage
- Redundant Power Supply
- Redundant ventilators
- Windows Server 2008 64-bit Enterprise edition (English recommended)
- SQL Server 2008 Standard 64-bit (English)

**SAP Contact Center Reporting (SQL) server:**

- x86 server with 1 or more CPUs
- 8 GB or more RAM
- 1 or more 100/1000 Base-T Ethernet ports per node
- Redundant (e.g. RAID 1 (2x15K drives)) 73 GB or more disk space for op.sys and applications
- 1 or more HBA (host bus adapter) for SAN connection and database storage
- Redundant Power Supply
- Windows Server 2008 64-bit Standard edition (English recommended)
- SQL Server 2008 Standard 64-bit (English)

**SAP Contact Center Application servers:**

- x86 server with 1 or more CPUs
- 4 GB or more RAM
- 2 100/1000 Base-T Ethernet ports per node
- Redundant (e.g. RAID 1 (2x15K drives)) 73 GB or more disk space
- Redundant Power Supply
- Windows Server 2008 64-bit Standard edition (English recommended)

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