



Enghouse
Interactive

Vision 80/20

System and connection
requirements

PAM 3.0

Contact Center 10.0

Statistics 3.0

Auto attendant 4.x

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NOTE!

The server and configuration must be secured well in advance of the installation

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Change history

Author	Date	Note
Radzi	2013-04-11	Version 11/4
Radzi	2013-04-26	Clarified Virtualization support
BjoSd	2013-05-15	Clarified Statistics HD calculation
RadZi	2013-06-03	Added Windows 2012 server
RadZi	2013-06-11	Added Statistics clarifications
RadZi	2013-06-13	PBX clarifications
RadZi	2013-07-05	PBX clarifications
RadZi	2013-08-23	Added Notes R9 Support
BjoSd	2013-09-11	Revision of Presence services
RadZi	2013-09-17	Clarification around MAC
RadZi	2013-09-23	Updates for IOS
RadZi	2013-10-08	Added Java 7 support Clarified Mobilt Bedriftsnett IP and Ports
BjoSd	2013-10-10	Restructured ContactCenter to better match price list structure
RadZi	2013-10-16	Updates for disk space allocation
RadZi	2013-11-01	Added Windows 2012 server support for Vision 80/20 PAM Integration modules
BjoSd	2013-11-01	Added AA max number of Nuance licenses.
RadZi	2013-11-20	Updated memory requirements for Contact Center server
BjoSd	2013-11-20	Clarified HW requirements for Contact Center Base-platform
RadZi	2013-11-22	Updated the Attendant lists

Vision 80/20 PAM Base system

Vision 80/20 PAM 3.0 Main system

Server	Minimum (1-1000 users)	Minimum (1001-10000 users)
CPU	2 GHz and up with minimum of 4 cores (Intel)	2 GHz and up with minimum of 8 cores (Intel)
RAM Memory	4 GB 8 GB for 2012 server	8 GB
HD	292 GB Hard Drive. (3x146GB 10k RPM SATA or SAS, RAID level 5 with BBU) * Diskspace is needed for support logging	438 GB Hard Drive. (4x146 GB 15k RPM SAS, RAID level 5 with BBU) * Diskspace is needed for support logging
Network card	1 Gbps	1 Gbps
Operating system	Windows Server 2012 Windows server 2008 R2, Windows server 2008 SP2 (32-bit)	Windows Server 2012 Windows Server 2008 R2, Windows Server 2008 SP2 (32-bit)
USB Ports	Minimum 2 where one is free	Minimum 2 where one is free
Media	DVD-ROM	DVD-ROM
Remote access	Terminal Services must be installed	Terminal Services must be installed
Backup	Backup of the System should be made according to operation protocols	Backup of the System should be made according to operation protocols
Disk partitioning	C: Which is used by the system only, should have a partition of approximately 50+ GB (following Windows recommendations) D: Size should be the remaining of the disk array. All of the software including the DB is installed here.	C: Which is used by the system only, should have a partition of approximately 50+ GB (following Windows recommendations) D: Size should be the remaining of the disk array. All of the software including the DB is installed here.
Comment	Microsoft IIS shall be disabled	Microsoft IIS shall be disabled

Software Requirements
.Net 3.5

Message Notification Options

Media	Requirements
SMS	Connection to Enghouse Interactive's operator service
E-mail	The existing SMTP-Server on port 25

Vision 80/20 User Web (Informera)

For optimal experience a resolution of at least 1024x768 (65535 colours) is recommended.

In the case where Active X is used with Avaya IP Office for call handling 64 bit Workstations will not work.

Software requirements – User PC

Windows XP/Windows 7 64-bit/32-bit

* Call Control requires 32-bit PC

Browser Requirements	Version
Microsoft Internet Explorer	7-9
Mozilla Firefox	3.5-16

Vision 80/20 Mobile User Web

Minimum	Recommended
The mobile telephone needs to support basic HTML	
Support for Cookies	
Minimum screen resolution 120*120	Recommended screen resolution 240*320
Symbian based telephones require Symbian S60 > 3th Edition to manage cookie support correctly	

Vision 80/20 connections to PBX (Forwarding API)

PBX	Interface
Alcatel OXE (9, 10)	IP based
Avaya IP-Office (7.x, 8.0)	IP
Avaya Communication manager (6.0, 6.2)	IP
Cisco Unified Communications Manager 8.0, 8.5, 8.6, 9.1	IP
Ericsson MD-110 BC-13	IP alt serial
Aastra MX-One 4.0, 4.1	IP
Avaya CS1000 6.x, 7.0 and 7.5	Serial
Philips Sopho IS3000	IP alternatively serial (two ports)
Avaya CS1000 6.x, 7.0 and 7.5	Serial
Broadworks 17 spX, 18 sp1	IP

For more information on server compatibility please consult the *PBX functionality matrix* document.

Vision 80/20 PAM Additional modules

Vision 80/20 Single Sign ON (AD)

Vision 80/20 supports SSO for User Web with one Windows Domain, the Vision 80/20 server must be a member of the Windows Domain.

Vision 80/20 PAM Additional PBX

See Vision 80/20 connections to PBX (Forwarding API)

Vision 80/20 Attendant – Client PC

These requirements relates to PAM Native Attendant and Agent Attendant

Server	Minimum	Recommended
CPU	Dual Core Intel processor, 2GHz	Dual Core Intel processor, 2GHz
RAM Memory	2 GB	4 GB
Network card	100 Mbit	1000 Mbit
Operating system	Windows XP	Windows 7 32-bit or 64-bit * Windows 8 (x64) see below
Screen resolution	1280x1024	1280x1024
Keyboard	Separate or built in numpad is required	Separate or built in numpad is required

(* See chapter 32-bit versus 64-bit support per PBX)

Specific Software Requirements
.Net 4
Microsoft Lync client - With Microsoft Lync the Attendant needs a Lync client installed locally for either chat.

32-bit versus 64-bit support and requirements per PBX

PBX	Windows 7 32 Bit	Windows 7 64-bit Bit	Windows 8 64-bit Bit	Other
Aastra MXOne 4.0, 4.1 CallServer for Linux	YES	YES	YES	SIP channel licenses in PBX are needed
Alcatel OXE 9, 10 CallServer for Linux	YES	YES	YES	SIP channel licenses in PBX are needed
Avaya CM 6.0, 6.2 CallServer for Linux	YES	YES	NO	SIP channel licenses in PBX are needed
Avaya CM 6.0, 6.2 Native CallControl	YES	NO	YES	SIP channel licenses in PBX are needed. TSAPI installed on the attendant's PC.
Avaya CS1000 6.x, 7.0 and 7.5 CallServer for Linux	YES	YES	YES	SIP channel licenses in PBX are needed
Avaya CS1000 7.5 IP Attendant*	YES	YES	NO	Two Sound devices are recommended, one for ringtone and one for softphone functionality Avaya licenses per seat are: 1 Premium Service Pkg IP Attendant User License 4 IP Media Services Session License 4 CS 1000 RFC4240 Service Sessions Floating license General requirement is: 1 CS 1000 MAS Enablement license (server) * Ready in Q4 2012
Avaya CS1000	YES	YES	YES	2250 board serially connected to the attendant PC.

6.x, 7.0 and 7.5 Native Call Control				Serial port and cable (null modem) 25 pin male connector (M2250). M2250 switchboard (configured with a busy indicator in the console (-x))
Avaya IP Office 7.x, 8.0 Native Call Control	YES	YES	NO	TAPI driver is needed at the Attendant PC, CTI Pro License required
Broadworks 17 spX, 18 sp1 CallServer for Linux	YES	YES	YES	
Cisco UCM 8.0, 8.5, 8.6, 9.1 CallServer for Linux	YES	YES	YES	SIP Connection is needed
NEC IS3000 CallServer for Linux	YES	YES	YES	SIP channel licenses in PBX are needed

Attendant Client PC - Network

The system communicates via TCP/IP and the communication uses the following ports. Verify that traffic is possible through any firewalls active between the server and client.

A complete list of port definitions can be found on <http://www.vision8020.se/wiki/index.php/Portar>

The firewall should have a minimum of 2Mbit capacity. The latency may not exceed 20ms. The quality of the connection between the telephony application and the HVD-server must also be tested. Primarily to ensure that there is no significant packet loss.

Vision 80/20 PAM Calendar Modules

All calendar modules require Vision 80/20 licenses pCalSync, pReplikera and pXTI.

Vision 80/20 Calendar Link for Microsoft Exchange

Requirements
Microsoft Exchange server 2007, 2010
Microsoft Exchange server 2013 (3.0).
Exchange Web Services connection.
Account with Impersonation or Delegate Access (2010/2013 only) rights to users' calendars.
sExchangeConnector license in Vision 80/20.

Ports and communication			
Protocol	Port	From	To
TCP	443	Installation server	Exchange CAS
TCP	5567	Vision 80/20 server	Installation server
TCP	2097	Installation server	Vision 80/20 server
TCP	8080	Exchange CAS	Installation server

Vision 80/20 Calendar Link for Office 365

Requirements
Exchange Web Services connection.
Account with Impersonation (supported in Office 365 plans E4 and E4 only) or Delegate Access rights to users' Calendars.
sExchangeConnector license in Vision 80/20.

Ports and communication			
Protocol	Port	From	To
TCP	443	Installation server	Office 365
TCP	5567	Vision 80/20 server	Installation server
TCP	2097	Installation server	Vision 80/20 server
TCP	8080	Office 365	Installation server

Vision 80/20 Calendar Link for Lotus Notes

Requirements
Lotus Domino 6.5-8.5
Lotus Domino 9.0 (from PAM 3.0)
Account with access rights to Free Time Database, Domino Directory Database and each users' Mail Database.
Lotus ID file of mentioned account.
Lotus Notes client installation.
For two way synchronisation, Editor access is required to users' Mail Database.

Ports and communication			
Protocol	Port	From	To
TCP	1352	Installation server	Lotus Domino server
TCP	5584	Installation server	Vision 80/20 server

Vision 80/20 Calendar Link for Google

Requirements			
Account that has the Super Admin privilege in Google Apps domain.			

Ports and communication			
Protocol	Port	From	To
TCP	443	Installation server	www.google.com
TCP	5584	Installation server	Vision 80/20 server

Vision 80/20 Calendar Link for Groupwise

Requirements			
GroupWise 7.0 with SupportPack 1, GroupWise 8.0 and GroupWise 2012			
Novell Trusted Application ID for GroupWise Integration and login account with sufficient monitor rights.			
SOAP protocol activated in Groupwise.			
pGroupwise license in Vision 80/20.			

Ports and communication			
Protocol	Port	From	To
TCP	7191	Installation server	Groupwise server
TCP	5221	Groupwise server	Installation server

Vision 80/20 PAM Presence Modules

Vision 80/20 Presence Link for Lync 2010/2013

The presence link for Lync can either be installed on the Vision 80/20 server, where the Vision 80/20 server must conform to the requirements below, or a dedicated integration server.

Microsoft Lync 2013 is supported from version 3.0

Hardware Requirements	
CPU	2 GHz and up with minimum of 4 cores (Intel)
RAM Memory	4 GB
Operating System	Windows server 2008 R2 Windows 2012 server
HD	292 GB Hard Drive. (3x146GB 10k RPM SATA or SAS, RAID level 5 with BBU)
Network card	1 Gbps
RAID-controller with cache and dedicated BBU	Yes
Comment	The Vision 80/20 Lync services server must have 64-bit processor architecture and 64-bit operating system since the UCMA 3 API only supports 64-bit architectures.
Active directory domain membership	The server running Vision 80/20 presence link for Lync components must belong to the same domain as Microsoft Lync 2010/2013 server

Software Requirements
Vision 80/20 PAM 2.5 or 3.0 for Lync 2010, Vision 80/20 PAM 3.0 for Lync 2013
The LYNCPRESENCE license installed on the Vision 80/20 system
.NET 4 needs to be installed on the Installation Server.
UCMA 3 runtime needs to be installed on the Installation Server.
Lync Core Components needs to be installed on the Installation Server.
The certificate for TLS communication with the Lync Server (S) installed on the following path: <i>Console Root\Certificates (Local Computer)\Personal\Certificates</i>
The provided Windows account used during installation must be a member of the RTCUniversalServerAdmins group.
The provided Windows account used during installation must either be a member of the Local Administrators group on the Frontend Server or the Domain Admins group.
Lync 2013 specific requirement: You will need access to the Lync 2013 Frontend Server during Installation. Note, this requirement does not apply for Lync 2010.

Ports and communication			
Protocol	Port	From	To
TCP	2110	Vision 80/20 Server	Installation Server
TCP	7000	Lync Front End Server	Installation Server
TCP	8000	Lync Front End Server	Installation Server

Vision 80/20 Presence Link for Cisco

Requirements
For server requirements see the Vision 80/20 PAM main system

Ports and communication			
Protocol	Port	From	To
UDP	5060	CuCM server	Vision 80/20 PAM main server

Vision 80/20 PAM Smartphone Modules

Vision 80/20 for iPhone

The Vision 80/20 for iPhone application requires IOS v4.3 or later, and supports iPhone 3G, iPhone 4 and iPhone 5

Vision 80/20 for Android

The Vision 80/20 for Android application requires Android 2.1 or later.

Vision 80/20 PAM Mobile line state modules

Vision 80/20 Presence Services

The Presence Services can either be installed on a dedicated integration server or a Vision 80/20 server

For dedicated installations the requirements are used:

Hardware Requirements	Minimum	Recommended
CPU	2 GHz and up with minimum of 4 cores (Intel)	3 GHz and up with minimum of 4 cores (Intel)
RAM Memory	4 GB	4 GB
Operating System	Windows server 2008 R2 Windows 2012 server	Windows server 2008 R2 Windows 2012 server
HD	146 GB Hard Drive	146 GB Hard Drive. (2x146GB 10k RPM SATA or SAS, RAID level 1)
Network card	1 Gbps	1 Gbps
Power Supply		Redundant power supply
RAID-controller with cache and dedicated BBU		Yes
Comment	For Lync deployments: See additional Lync requirements	

Vision 80/20 Presence Services can be installed in a Virtual server environment, as long as the hardware allocation of the virtual server matches the hardware requirements. Supported Virtualization platforms: with VMware ESXi 5.0 and 5.1

Additional port and license requirements for accessing Mobile Operator.

Mobile Operator	Connection	Port	From	To
Telenor One Sweden, linestate This connector is used for getting Linestate. Requires activated Telenor One UC MobilStatus license.	Tcplp	3102, 3103	Installation server	82.182.0.1
Telenor Norge Mobiltbedriftsnett, linestate This connector is used for getting Linestate. Requires activated licences to <i>TelenorNO MBN Authentication</i> and <i>Telenor NO MBN Status Push API</i>	Http/Soap	80	Installation server	tsg.telenor.no/TSG
Telenor Norge Mobiltbedriftsnett, calendar This connector is used for getting and setting absence marking. Requires activated licences to <i>TelenorNO MBN Authentication</i> and <i>Telenor NO MBN Calendar API</i> <u>Only valid for Presence Services Standalone</u>	Http/Soap	80	Installation server	tsg.telenor.no/TSG

<p>Telenor Norge Mobiltbedriftsnett, directory</p> <p>This connector is used for setting Userdata.</p> <p>Requires activated licences to <i>TelenorNO MBN Authentication</i> and <i>Telenor NO MBN Directory API</i> <u>Only valid for Presence Services Standalone</u></p>	Http/Soap	80	Installation server	tsg.telenor.no/TSG server
<p>Telenor Norge Proffnett, line state</p> <p>This connector is used for getting Linestate.</p> <p>Requires activated Telenor Norge Proffnett line state license</p>	Http with local Http Server and open port	2000	Both ways between installation server and Telenor Proffnet	Both ways between installation server and Telenor Proffnet
<p>Netcom Norge, line state</p> <p>This connector is used for getting Linestate.</p> <p>Requires activated license from Netcom</p>	Http/Soap	80 (443)	Installation server	Netcom Norge
<p>Ventelo Norge, line state</p> <p>This connector is used for getting Linestate from Ventelo</p> <p>Requires activated licenses from Ventelo</p>	Http with local Http Server and open port	8036	Both ways between installation server and Ventelo Norge	Both ways between installation server and Ventelo Norge
<p>TDC Sweden / Denmark / Norway, line state</p> <p>This connector is used for getting Linestate.</p> <p>Requires activated license from TDC</p>	Http with local Http Server and open port	8193	Both ways between installation server and TDC	Both ways between installation server and TDC
<p>Cirque, line state</p> <p>This connector is used for getting Linestate.</p> <p>Requires activated licenses from Cirque</p>	Http with local Http Server and open port	80 (443)	Installation server	Cirque
<p>Telenor Denmark (sonofon linestate)</p> <p>This connector is used for getting Linestate.</p> <p>Requires activated Telenor Denmark line state license</p>	Http with local Http Server and open port	2000	Both ways between installation server and Telenor Denmark	Both ways between installation server and Telenor Denmark

Additional Vision 80/20 requirements for Presence Services: Integrated with Vision 80/20

For Presence Services deployments together with Vision 80/20, the following additional requirements exist.

Ports and communication			
Protocol	Port	From	To
TCP	2110	Vision 80/20 Server	Installation Server

Additional Lync requirements for Presence Services Standalone: LineState into Lync deployments

For Presence Services deployment together Microsoft Lync, the following additional requirements exists.

Requirements
For Lync deployments: The Vision 80/20 Presence Services server must have 64-bit processor architecture and 64-bit operating system since the UCMA 3 API only supports 64-bit architectures. Remote access must be activated for support. See additional Lync Requirements.
For Lync deployments: The server running Vision 80/20 Presence Services – Line state into Lync must belong to the same domain as Microsoft Lync server.
.NET 4 needs to be installed on the Installation Server.
UCMA 3 runtime needs to be installed on the Installation Server.
Lync Core Components needs to be installed on the Installation Server.
The certificate for TLS communication with the Lync Server (S) installed on the following path: <i>Console Root\Certificates (Local Computer)\Personal\Certificates</i>
The provided Windows account used during installation must be a member of the RTCUniversalServerAdmins group.
The provided Windows account used during installation must either be a member of the Local Administrators group on the Frontend Server or the Domain Admins group.

The provided Windows account used during installation must have access rights to create Global security groups in Active Directory

The Service account must have access rights to communicate over internet, and have access rights to read information in Active Directory.

Lync 2013 specific requirement: You will need access to the Lync 2013 Frontend Server during Installation. Note, this requirement does not apply for Lync 2010.

The following communication ports toward Lync are required to be opened.

Ports and communication			
Protocol	Port	From	To
TCP	7000	Lync Front End Server	Installation Server
TCP	8000	Lync Front End Server	Installation Server
TCP	5061	Installation Server	Lync Front End Server
TCP	389	Installation Server	Active Directory
TCP	80	Installation Server	www.microsoft.com

The following is required for Active Directory integration.

Requirements

Service Account: a Service Account with local rights to execute "ldifde.exe" and access rights in the AD database for fetching user data. Additionally the account should allow a technician to create a global AD Security Group used for filtering relevant AD users to match with mobile linestate.

Vision 80/20 PAM Integration modules

Vision 80/20 AD/LDAP Link

Requirements

The Vision 80/20 server running the AD Link must have access to the Active Directory global catalogue server.

Vision 80/20 pre 2.4 The Vision 80/20 Integration with Active Directory requires that the Active Directory server is configured with parameter MaxPageSize value that exceeds the number of wanted synchronized users.

This is not a requirement for Vision 80/20 2.5 and newer.

Vision 80/20 IVR (Tala)

No expansion of Vision 80/20 PAM Main System are needed

Supports only SIP based integration, QSIG or H.323 are not supported,

Supported PBXs

PBX	Note
Avaya IP Office	SIP
Avaya CM	via SIP (SIP-header for redirection info: SIP_history-info).If Avaya SES is used as connection point shall UDP be used, if connection point is directly towards Avaya CM (v6 and upwards) , then TCP shall be used

Vision 80/20 Statistics 3.0

Statistics Modules

The Vision 80/20 Statistics database is installed on separate Vision 80/20 DB server, or Vision 80/20 Contact Center DB server (Linux). In both cases it is a separate server, for example the Linux based Contact Center DB server can be used with Windows based 80/20 CDR.

Server requirements - Windows

Windows Server	Minimum	Recommended
CPU	3 GHz => with minimum of 4 cores (Intel)	2 x Intel Xeon E7-4820 or 2 x Intel X5690 equivalent
Memory	18 GB	Statistics Data Dimensioning
Network connection	1 Gbps	1 Gbps
Operating system	Windows Server 2008 R2 Windows Server 2008 SP2 (32-bit)	Windows server 2008 R2
Media	DVD-ROM	DVD-ROM
HD: RAID-controller with cache and dedicated BBU	Yes	Yes
HD: Operating System and DBMS	2 x 146 GB HDD 15k RPM RAID1 for OS and DBMS Server	2 x 146 GB HDD 15k RPM RAID1 for OS and DBMS Server
HD: Statistics Database	See: Statistics Hard drive Requirements	See: Statistics Hard drive Requirements
Power supply		Redundant Power supply
Comment	Microsoft IIS shall be disabled	Microsoft IIS shall be disabled

Software Requirements

Java 1.6 32-Bit required on Windows Server (both R1 and R2)

Server requirements - Linux

Linux Server	Minimum	Recommended
CPU	3 GHz => with minimum of 4 cores (Intel)	2 x Intel Xeon E7-4820 or 2 x Intel X5690 equivalent
Memory	16 GB	Statistics Data Dimensioning
Network connection	1 Gbps	1 Gbps
Operating system	CentOS 6.4 included on the Contact Center 10 DVD	CentOS 6.4 included on the Contact Center 10 DVD
Media	DVD-ROM	DVD-ROM
HD: RAID-controller with cache and dedicated BBU	Yes	Yes
HD: HD volume for OS and DBMS	2 x 146 GB HDD 15k RPM RAID1 for OS and DBMS Server	2 x 146 GB HDD 15k RPM RAID1 for OS and DBMS Server
HD: HD Volume for Statistics Database	See: Statistics Data Dimensioning	See: Statistics Data Dimensioning
Power supply		Redundant Power supply

Statistics Data Dimensioning.

Traffic Measurement					
Number of Users in PBX	1 000	5 000	20 000	50 000	100 000
Required available HD for Statistics Data (GB)	20	70	280	700	1400

Dimensioning is based on 10 calls per day and users in PBX, Store data for 2 years.

Contact Center Statistics					
Calls/Chats/Mail to ContactCenter / Day	1 000	5 000	20 000	50 000	100 000
Required available HD for Statistics Data (GB)	20	40	120	280	560

Dimensioning is based on that data is stored for 2 years.

How to calculate the required HD volume size for Statistics database

- If both Traffic Measurement and ContactCenter statistics are being deployed, then the available HD requirements of both Traffic Measurement and contact center data shall be summed.
- If backup is required, then it is possible to use this data volume to store a local SQL dump of the database. However, the volume size needs to be doubled to accommodate for the extra SQL Dump.

Example:

- 5000 PBX users for Traffic measurement
- 5000 calls per day to ContactCenter
- Place for local SQL dump needed.
= (70 + 40) * 2 GB storage data which fits into a 4x146GB RAID 10 volume (292 GB)

Hardware recommendation				
Statistics data	< 0,5 TB	0,5 TB to 1TB	1TB to 2TB	2 TB to 5TB
HD Disc recommendation (15k RPM SAS, RAID level 10 with BBU)	0,5 TB	1TB	2TB	5TB
Recommended DBMS	MySQL,	MySQL	MySQL	MySQL
Memory	32 GB	40 GB	64 GB	64 GB

Wallboard

Vision 80/20 Wallboard – Client PC

Server	Minimum	Recommended
CPU	Dual Core Intel processor, 2GHz	Dual Core Intel processor, 2GHz
RAM Memory	2 GB	4 GB
Network card	100 Mbit	1000 Mbit
Operating system	Windows XP	Windows 7 (x86) 32-bit or 64-bit * Windows 8 (x64)
Screen resolution	1280x1024	1280x1024

(* See chapter 32-bit versus 64-bit support per PBX)

Specific Software Requirements
.Net 4

Statistics – PBX-data supported for traffic measurement reports

Traffic Measurement reports	MD110	MX-One	Avaya CM	Avaya CS1000	MS Lync	Cisco CallManager
Traffic report	x	x	x	x	x	x
Answered Calls Report	x	x	x	x	x	x
Call Traffic Reports	x	x	x	x	x	x
CDR Data from PBX						
Incoming Queuetime	N	N	N	Y	N	N
Incoming Alerting time	N	N	external calls only	Y	Y	Y
Incoming Call Duration	Y	Y	Y	Y	Y	Y
Incoming Calls Answered	Y	Y	Y	Y	Y	Y
Incoming Calls Not Answered	N	N	external calls only	Y	Y	Y
Outgoing Queuetime	N/A	N/A	N/A	N/A	N/A	N/A
Outgoing Alerting time	N/A	N/A	N/A	N/A	Y	N/A
Outgoing Call Duration	Y	Y	Y	Y	Y	Y
Outgoing Calls Answered	Y	Y	Y	Y	Y	Y
Outgoing Calls Not Answered	N	N	N	Y	Y	Y

Statistics – Reports available per deployment type

Report	Vision 80/20 PAM Standalone (5)	Vision 80/20 Contact Center integrated with PAM (4)	Contact Center (4) Standalone
Traffic measurement Reports			
Answered calls report	Y	Y	N
Traffic report	Y	Y	N
Call Traffic graphs report	Y	Y	N
Contact Center Reports			
Contact Center report	N	Y	Y
Agent Report	N	Y	Y
Agent Presence report	N	Y	N
Case log report	N	Y(5)	Y
IVR Report	N	Y	Y
(4) Requires Contact Center 10			
(5) Requires Vision 80/20 30			

Statistics Users

Software requirements – User PC

Windows XP/Windows 7 64-bit/32-bit

Software Requirements	Version
Flash Installed	Required for charts
Microsoft Internet Explorer	8 - Version 8 requires KB175500 installed 9 recommended
Mozilla Firefox	4-26
Google Chrome	21

Vision 80/20 IVR PRO and Contact Center base platform

IVR PRO and Contact Center base platform

IVR Pro and Contact Center base is the base platform for Contact Center and Voicemail products. It is installed on a Linux server using CentOS 6.4 64-bit version. CentOS is included on the DVD provided by Enghouse Interactive AB, the CentOS 6.4 operating system is installed via the DVD as part of the installation procedure and is the only OS supported by the package.

All of the server hardware must be Linux RedHat/CentOS compatible.

Server requirements Linux

Linux Server	Minimum	Recommended
CPU	3 GHz => with minimum of 4 cores 1 x Intel Xeon E3-1220 or equivalent	2 x Intel Xeon E3-1220 or equivalent
Memory	2 GB	See chapter Memory Dimensioning
Network connection	1 Gbps, CentOS Linux 6.X compatible	1 Gbps, CentOS Linux 6.X compatible
Operating system	CentOS 6.4 included on the Contact Center 10 DVD	CentOS 6.4 included on the Contact Center 10 DVD
Media	DVD-ROM	DVD-ROM
HD: HD volume for OS and Vision 80/20 IVR PRO and Contact Center base	2 x 146 GB HDD 10k RPM RAID1 with BBU for OS and Server software (additional HDD may be needed depending on additional services used on the base platform such as VoiceMail)	2 x 146 GB HDD 15k RPM RAID1 with BBU for OS and Server software (additional HDD may be needed depending on additional services used on the base platform such as VoiceMail)
HD: RAID-controller with cache and dedicated BBU	Yes	Yes
Power supply		Redundant Power supply

Memory Dimensioning

Voice SIP	Voice QSIG	RAM	E-Mail	Chat
< 60 Channels	< 60 Channels	2.0 GB	+1.0 Gb	+2.0 Gb
< 120 Channels	< 120 Channels	4.0 GB	+1.0 Gb	+2.0 Gb
< 240 Channels	< 240 Channels	8.0 GB	+1.0 Gb	+2.0 Gb
< 480 Channels	Not Supported	16.0 GB	+1.0 Gb	+2.0 Gb

Hard drive dimensioning overview

IVR PRO and Contact Center base platform	IVR PRO Voicemail	Contact Center Voice recording	Contact Center E-Mail	Contact Center Chat	Statistics
75 GB	+5 GB per 1000 users	External disk volume needed with 40GB/1000 calls per day	+10 GB per mail queue	+1 GB per chat queue	N/A (Vision 80/20 Statistics shall always be located on a separate Server to prevent high load on the Contact Center Server)

Please see details in the chapters below.

Extra serial ports for connections to external system

Extra serial ports may be needed. Reserve height for all extra ports you might need.

- 1 for every PBX - hvd-interface (serial) if used.
- 1 for the service modem – if used

QSIG Card slots PCI

Make sure that there are enough free slots to install all the extra cards needed and that the power supply is sufficient to power everything.

- Card slot for extra serial ports – if used
- Card slot PCI-RAID – if used
- Phone cards. - see below.

Digital connections PCI, PCI-X or PCI-express (Sangoma)

1 PCI-X card slot for every 30, 60, 120 or 240-line cards. We support all three variants but we need to know exactly what type of card that will fit the server you have ordered, before we place an order for one.

ACPI (Advanced Configuration and Power Interface)

Shall be deactivated on the server.

IVR PRO (VIP2000), Contact Center (cc-Bridge) – Network

The system communicates via TCP/IP and the communication uses the following ports. Verify that traffic is possible through any firewalls active between the server and client.

- HTTP, port 80
- HTTPS, port 443
- FTP, port 21 and 20
- SSH, port 22
- SMTP, port 25
- MySQL, port 3306
- Vision 80/20, port 2080-2096
- VIP2000/cc-Bridge port 300 1-3022, 4440-4470 and UDP 9832
- RTP, RTP traffic must be allowed, this might differ on different PBXs
- SIP, port 5060 (UDP/TCP) must be available

NB! The default TCP port that the cc-Bridge agent communicates with the server on is 4444.

Contact Center 10 - PBX Support

PBX	Version	Note
Aastra MX-ONE	4.0, 4.1	
Avaya IP Office	7.x and 8	Contact Center only, no attendant functionality
Avaya CM	6.0	
Avaya CS 1000	6.5, 7.0 and 7.5	
Alcatel OXE	9 and 10	
Broadworks	17 spX, 18 sp1	
Cisco Unified Communications Manager	8.0, 8.5, 8.6 and 9.1	
Microsoft Lync	2010 and 2013	SIP, gateway or session border controller is needed for external calls
NEC iS3000		

Contact Center Agent and IVR Pro User – Client PC - Network

The system communicates via TCP/IP and the communication uses the following ports. Verify that traffic is possible through any firewalls active between the server and client.

A complete list of port definitions can be found on <http://www.vision8020.se/wiki/index.php/Portar>

The firewall should have a minimum of 2Mbit capacity. The latency may not exceed 20ms. The quality of the connection between the telephony application and the HVD-server must also be tested. Primarily to ensure that there is no significant packet loss.

Vision 80/20 Spoken Presence & Voicemail

Software requirements – IVR Pro User Client

Browser Requirements	Release 8.x	Release 9 and 10
Microsoft Internet Explorer	7-9	7-9
Mozilla Firefox	3.5-4	3.5-16
Google Chrome	N/A	21

Voicemail data dimensioning.

The size of the disk is dependent on the number of mailboxes that are going to be installed. Up to 1000 mailboxes require approximately 5 GB additional hard drive space.

Voicemail data dimensioning					
Number of VoiceMail Users	500	1000	5000	10000	20000
Required available HD for VoiceMail Data (GB)	2,5	5	25	50	100

Vision 80/20 Contact Center

Contact Center Modules

- **E-mail:** Contact Center E-mail the messages are stored for 30 days as default, for e-mail storage add at least 10 GB per mailqueue
- **Outbound SMS:** SMS are managed by Enghouse Interactive's operator service or direct connection via the internet. Direct connections exist to Telenor, Telia (They require an account with the provider). Tele2 customers may use the "IQ E-mail" service, an extra service connected to the account.
- **Inbound SMS:** Inbound SMS requires e-mail and a SMS to SMTP gateway, for example Generic Mobile Messit functionality.
- **Chat:** Chat requires that traffic on port 80 is redirected from the external users, when chat is deployed on external server port 5222 need to be opened between the Contact Center server and the Chat server in DMZ.

Contact Center Agent types

IVR Pro User and Contact Center Agent – Client PC

Server	Minimum	Recommended
CPU	Dual Core Intel processor, 2GHz	Dual Core Intel processor, 2GHz
RAM Memory	2 GB	4 GB
Network card	100 Mbit	1000 Mbit
Operating system	Windows XP (rec. Windows 7 (x86) 32-bit)	Windows 7 (x86) 32-bit
Screen resolution	1280x1024	1280x1024
Keyboard	Separate or built in numpad is required for the agent	Separate or built in numpad is required for the agent

* 64-bit support requires special handling of the access granting script.

Software requirements – Agent Client PC

Browser must support Java Web Start (javaws) to launch the Agent Client

Software Requirements	Release 8.x	Release 9 and 10
Java Runtime Environment (JRE)	Oracle JRE 6	Oracle JRE 6 and 7

		Oracle JRE 7 Update 40*
Microsoft Internet Explorer	7-9	7-9
Mozilla Firefox	3.5-4	3.5-16
Google Chrome	N/A	21

* Requires CC 9.0.3 Hotfix_2013-10-03:_Improved_UpdateJavaPolicy.wsf_script

Contact Center Agent options

Vision 80/20 Agent Attendant (Windows)

For technical requirements of Windows based Agent Attendant, please see chapter *Vision 80/20 Attendant – Client PC* in this document.

Vision 80/20 Agent Attendant (Java)

For technical requirements of Java based Agent Attendant, please see chapter *Contact Center Agent types* in this document.

Recording for Contact Center and Generic operator

Automatic recording of all calls requires external data storage for storing the recordings.

Recording				
Calls to ContactCenter per Day	200	1000	5000	10000
Required available External HD for Call recording Data (GB)	7	40	200	400

* Estimation is based on average recorded call length 60 seconds, storage of call recording for 3 months, average number of days the contact center is open during month is 25 days.

Vision 80/20 Auto Attendant 4.0

When used in an installation with Vision 80/20, add more HD-space.

Server	Minimum (1-1000)	Mimum (1001-10000)
CPU	2 GHz and up with minimum of 4 cores (Intel)	2 GHz and up with minimum of 8 cores (Intel)
RAM Memory	4 GB	4 GB
HD	292 GB Hard Drive. (3x146GB 10k RPM SATA or SAS, RAID level 5 with BBU)	438 GB Hard Drive. (4x146 GB 15k RPM SAS, RAID level 5 with BBU)
Network card	1 Gbps	1 Gbps
Operating system	Windows server 2008 (32-bit)	Windows server 2008 (32-bit)
RAID-controller with cache and dedicated BBU	Yes	Yes
USB Ports	Minimum 2 where one is free	Minimum 2 where one is free
Media	DVD-ROM	DVD-ROM
Remote access	Terminal Services must be installed	Terminal Services must be installed
Backup	Backup of the System should be made according to operation protocols	Backup of the System should be made according to operation protocols
Disk partitioning	C: Which is used by the system only, should have a partition of approximately 10 GB D: Size should be the remaining of the disk array. All of the software including the DB is installed here.	C: Which is used by the system only, should have a partition of approximately 10 GB D: Size should be the remaining of the disk array. All of the software including the DB is installed here.
PCI slots (not relevant for SIP-based deployments)	1 PCI or PCI-X slots, full length and full height (312mm*107mm). PCIe not supported.	2 PCI or PCI-X card slots, full length and full height (312mm*107mm). Cards are mounted on top of each other (i.e. 2U server). PCIe not supported.
Comments	Microsoft IIS shall be disabled	Microsoft IIS shall be disabled
Virtualization	Not Supported	Not Supported

- During the installation of the system the customer must provide a monitor, keyboard and mouse either directly connected to the server or via KVM-switch.
- For business systems that are critical Enghouse Interactive recommends redundant systems and a slight over dimensioning so that it is running at 70% of the capacity at a maximum.
- Vision 80/20 Auto Attendant requires a 32-bit operating system and does not at this point support 64-bit operating systems!
- Vision 80/20 Auto Attendant server scales to support maximum 30 concurrent Nuance Recognizer channels.

Note: The older Aculab Prosody PCI boards are not supported from version 4.0 of AA. The only QSIG board that is supported is Aculab Prosody X PCI board.

Software requirements – User PC

The Dialogue Editor and administrative interface for Auto Attendant has the following software requirements:

Software Requirements	Version
Microsoft Internet Explorer	8-9
Nuance Recognizer	9 (provided by Enghouse Interactive)
Nuance Vocalizer	5 (provided by Enghouse Interactive)

Vision 80/20 Auto Attendant 4.1

When used in an installation with Vision 80/20, add more HD-space.

Server	Minimum (1-1000 Names)	Minimum (1001-20000 Names) (collocated with Vision 80/20 PAM)
CPU	2,33 GHz and up with minimum of 4 cores (Intel)	2,33 GHz and up with minimum of 8 cores (Intel)
RAM Memory	8 GB	16 GB
HD	292 GB Hard Drive. (3x146GB 10k RPM SATA or SAS, RAID level 5 with BBU)	438 GB Hard Drive. (4x146 GB 15k RPM SAS, RAID level 5 with BBU)
Network card	1 Gbps	1 Gbps
Operating system	Windows server 2008 R2	Windows server 2008 R2
RAID-controller with cache and dedicated BBU	Yes	Yes
USB Ports	Minimum 2 where one is free	Minimum 2 where one is free
Media	DVD-ROM	DVD-ROM
Remote access	Terminal Services must be installed	Terminal Services must be installed
Backup	Backup of the System should be made according to operation protocols	Backup of the System should be made according to operation protocols
Disk partitioning	C: Which is used by the system only, should have a partition of approximately 10 GB D: Size should be the remaining of the disk array. All of the software including the DB is installed here.	C: Which is used by the system only, should have a partition of approximately 10 GB D: Size should be the remaining of the disk array. All of the software including the DB is installed here.
PCI slots (not relevant for SIP-based deployments)	1 PCI or PCI-X slots, full length and full height (312mm*107mm). 1 PCie	2 PCI or PCI-X card slots, full length and full height (312mm*107mm). Cards are mounted on top of each other (i.e. 2U server). PCIe not supported.
Comments	Microsoft IIS shall be disabled	Microsoft IIS shall be disabled
Virtualization	Supported	Supported

- During the installation of the system the customer must provide a monitor, keyboard and mouse either directly connected to the server or via KVM-switch.
- For business systems that are critical Enghouse Interactive recommends redundant systems and a slight over dimensioning so that it is running at 70% of the capacity at a maximum.
- Vision 80/20 Auto Attendant must be installed on Windows 2008 R2, Windows 2008 R1(32-bit) is no longer supported,
- Vision 80/20 Auto Attendant server scales to support maximum 30 concurrent Nuance Recognizer channels.

Note: The older Aculab Prosody PCI boards are not supported from version 4.x of AA. The only QSIG board that is supported is Aculab Prosody X PCI board.

Software requirements – User PC

The Dialogue Editor and administrative interface for Auto Attendant has the following software requirements:

Software Requirements	Version
Microsoft Internet Explorer	8-9
Nuance Recognizer	10 (provided by Enghouse Interactive)
Nuance Vocalizer	5 (provided by Enghouse Interactive)

Vision 80/20 Virtualization support

The following products can be run in a Virtual environment,
 In certain scenarios the Guest must be configured with specific device types.

Product	Virtualization support	Requirements	Comment
Vision 80/20 Server 3.0	Supported with VMware ESXi 5.0 and 5.1	Requires IP based PBX communication For dimensioning see general technical requirements for the server	No Spoken Presence Support(Tala) in virtual environments
Calendar Links (Exchange, Notes, FirstClass etc)	Supported with VMware ESXi 5.0 and 5.1	For dimensioning see general technical requirements	
LDAP Integration with Active Directory	Supported with VMware ESXi 5.0 and 5.1	For dimensioning see general technical requirements	
Presence link for Lync and CUPS	Supported with VMware ESXi 5.0 and 5.1	For details see general technical requirements	
PBX support –(PBX Link)	Supported with VMware ESXi 5.0 and 5.1	Requires IP based communication	
IVR-Pro and Contact Center 10	Supported with VMware ESXi 5.0 and 5.1 NOTE! <ul style="list-style-type: none"> Guest OS shall be Other 2.6.x Linux (64-bit) Network Adapter type must be “E1000” SCSII Controller “LSI Logic Parallel” 	<ul style="list-style-type: none"> 2 VCPU per Virtual machine, core speed 2.33 GHz 4 GB ram At least 100 Mbit Network available 3 MB/s Disk write available. 	<ul style="list-style-type: none"> Max number of lines 100 per server. Vision 80/20 Statistics 3.0 is to be handled on a separate server
Vision 80/20 Statistics 3.0	Supported with VMware ESXi 5.0 and 5.1	Version 3.0 For dimensioning see general technical requirements The Database server can be run in Virtual environment	
Vision 80/20 Auto Attendant 4.1	Supported with VMware ESXi 5.0 and 5.1	0-1000 names and 4 ports <ul style="list-style-type: none"> Min 4 VCPU per Virtual machine, core speed 2.33 GHz Min 8 GB ram At least 100 Mbit Network available 1000-20000 names and 8 ports <ul style="list-style-type: none"> Min 8 VCPU per Virtual machine, core speed 2.33 GHz Min 16 GB ram At least 100 Mbit Network available 	