

Avaya Communication Server 2100

An integrated unified communications solution built to meet the demands of the large enterprise

Avaya Communication Server 2100 is an enterprise converged solution designed specifically to address the demanding business and operational requirements of today's large enterprises. The Communication Server 2100 platform is a "best of all worlds" integrated unified communications solution that combines Avaya's leading enterprise features and applications with the exceptional scalability, reliability and networking usually only found in carrier solutions. Combining these strengths with the capabilities of Avaya Aura™ architecture provides customers an unmatched solution for consolidating dial plans, network access and applications into single data center reducing network and operational cost.

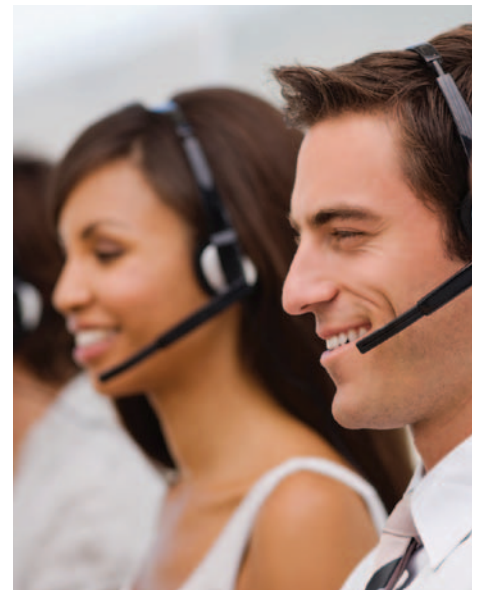
Overview

A SIP Session Server is native within Communication Server 2100 architecture to provide fully integrated unified communications, including SIP Lines, Presence and Instant Messaging. These capabilities are expanded through Avaya multimedia and collaborative applications to business optimize communications, in addition to integration with Microsoft Office Communications Server (OCS). The Communication Server 2100's SIP core provides a natural integration point into the award-winning Avaya Aura™ architecture which will expand the overall capabilities to the Communication Server 2100 solution set.

A unique offering in the industry, the Communication Server 2100 delivers value to enterprises in a number of ways:

- Data center consolidation — With its scalability and carrier-grade attributes, Communication Server 2100 can support up to 500,000 SIP end points, and offer capabilities to meet the needs of large campus environments.
- Call center consolidation — Communication Server 2100 is designed to address the trend towards larger consolidated call centers with capabilities such as 99,999 agent positions, 120,000 simultaneous calls and 2.4 Million Busy Hour Call Completions.
- Business continuity — Communication Server 2100's approach to business continuity applies to all the elements it supports, helping ensure continuous service for mission-critical users and applications in the event of a disaster or unforeseen circumstances.
- Centrex migration — Analog and digital Centrex stations can seamlessly migrate to a Communication Server 2100 platform with feature transparency and retention of telephone sets, resulting in reduced operational expenses in reoccurring charges.
- Application/business process integration — The solution continues to evolve with specific emphasis on communication enabling of business processes for improved employee productivity and reduced business costs.

By implementing a data center model centered around the Communication Server 2100, enterprises can realize the many benefits of unified communications from Avaya, including enhanced employee productivity, simplified management and lower Total Cost of Ownership.



Feature Summary

Telephony Features

Over 750 features delivered via analog, TDM, Unistim (IP) or SIP devices. The Communication Server 2100 utilizes a centralized call server to provide voice services to stations across a wide area network. This distributed model pushes consistent feature and functionality from the core to the edge of the enterprise voice network.

Unified Messaging

The Communication Server 2100 supports multiple unified messaging solutions including Avaya CallPilot, Avaya Modular Messaging and other third party solutions. Both Avaya solutions provide customers enhanced productivity through a single mailbox supporting voice messages, faxes and even speech-to-text capabilities.

Contact Center

The Communication Server 2100's scalability is unmatched in the industry providing a unique solution for consolidating numerous call centers on a single Communication Server 2100. Communication Server 2100 call center capacities:

- Agents per system: 99,999
- ACD groups per system: 5,000
- ACD subgroups per ACD group: 2,500
- ACD Supervisors per ACD group: 2,500
- ACD agents per ACD group: 10,000
- Simultaneous queued calls per ACD group: 8,192

The Communication Server 2100 can support multiple contact center solutions through its standards based open interfaces.

Unified Communications

SIP Core: Premier carrier-class IP Telephony solution has evolved to a fully-integrated SIP unified communications solution. The Communication Server 2100, through an integrated SIP Session Server, supports SIP connectivity to endpoints within the skins of this ultra-reliable and scalable solution.

- Provide the basis for a more productive work environment
- Enables integration into business applications
- Open nature of SIP allows for integration into the communications experience such as Presence, Instant Messaging, find me/follow me services and video calling

Multimedia collaboration: Via the Media Application Server, provides multimedia capabilities from the desktop that provide a significant cost savings in travel and external conference services while allowing employees to be more productive and efficient:

- On-demand, Meet-me Conferencing
- Web Collaboration
- Video Conferencing
- Application Sharing

Microsoft Office Communications Server:

Communication Server 2100 fully integrates with Office Communications Server (OCS) as a complement to the carrier-grade and robust capabilities of the Communication Server 2100. Avaya is able to provide customers integration into key Microsoft business applications.

- Provides a choice for customers
- Enables a common desktop client across the enterprise
- Allows for common user interface and business application integration
- Provides a simplified and consistent user experience, optimized for productivity

Mobility Features

Fixed Mobile Convergence: The Communication Server 2100 portfolio supports two different Fixed Mobile Convergence (FMC) solutions. The MC 3100 solution can be implemented on any smart phone via the soft client or web client on either a single or dual mode device. The MC 3100 solution can also support UC functionality in the appropriate deployment model. The Mobile Extension solution can turn any mobile phone into your desk phone, allowing mobility anywhere your cell phone works. With the addition of the Call Grabber functionality, customers can transfer calls with the touch of a button from their cell phone back to their desk phone when they return to the office.

Wireless LAN: The WLAN product suite within the Communication Server 2100 portfolio allows customers to be more productive in the work environment, taking their desktop phone with them throughout the office or campus environment, which in turn lends to increased customer satisfaction.

- 6100 Series Wireless LAN Handset
- WLAN IP Telephony Manager 2245

Learn More

To learn more about Avaya solutions and products contact your Avaya Account Manager or Avaya Authorized Partner or visit us at: www.avaya.com.

Technical Specifications

Call Server	Compact	XA-Core
Operating System	Linux	VxWorks
CPU	1Ghz PowerPC 7457 & 800Mhz PowerPC 750FX	500Mhz PowerPC 7410 (up to 7 processors)
Percent availability (based on total downtime)	99.999% (5 nines)	
Memory	2 GB ECC RAM	768MB - 1.7GB RAM
Switching matrix	SIP/IP, TDM or hybrid	
Busy Hour Call Completions (BHCC)	2.4 Million BHCA	2.0 Million BHCA
Simultaneous calls	120,000	
Capacities		
Maximum number of ports: 580,000	Maximum number of analog trunks: 32,000	
Maximum number of IP phones: 125,000	Maximum number of digital trunks: 50,025	
Maximum number of SIP phones: 500,000	Maximum number of IP trunks: 200,000	
Maximum number of digital phones: 125,000	Maximum number of SIP trunks: 200,000	
Maximum number of analog phones: 500,000	Maximum number of SS7 trunks: 200,000	
Networking		
Supported trunks:	Analog, Digital, IP and SIP-DID, TIE, FX, WATS, RAN, PAGING, Ground Start, Loop Start	
Network singnaling protocols:	SIP, SS7, H.323, H.248, E&M, Q.931, MCDN, In-band, ISDN (BRI/PRI), T1, proprietary	
Trunk groups:	8,091	
Maximum number of nodes:	112,000	
Maximum number of H.323 gateways:	4,093	
Phones and clients		
SIP phones:	Avaya 1100 Series IP Deskphones (1120E & 1140E) and numerous third party standards based sets	
IP phones:	Avaya 1100 Series IP Deskphones (1110, 1120E & 1140E); Avaya 1200 Series IP Deskphones (1220 & 1230); Avaya 2007 IP Deskphone	
Specialty IP phones:	1150E IP Deskphone, 1165E IP Deskphone & Avaya 2033 IP Conference Phone	
Soft clients:	Multimedia PC Client, Multimedia Web Client, 3100 Mobile Communicator, 3456 IP Softphone & other third party standards based soft clients	
Wireless phones:	6100 Series WLAN Handsets (6120 & 6140)	
Digital phones:	3900 Series Digital Deskphones (3901, 3902, 3903, 3904 & 3905)	
Centrex phones:	Variety supported including: M5008, M5208, M5216, M5316, M8009, M9216, M9316CW, M9417CW, PowerTouch 225, PowerTouch 250 & PowerTouch 350	

Technical Specifications

Media Gateways

Multiservice:	Avaya Media Gateway 9000 • Protects investment in existing equipment — IP-enable TDM components • Native multi-service gateway supporting: — 3,808 simultaneous calls — 5,920 lines — Analog — M2000 — DSL			
Trunk:	Avaya Media Gateway 3200 • Flexible scalability • 1 to 16 T1s Avaya Media Gateway 3500/3600 • Flexible scalability • 16 to 96 T1s (2,304 DS0s) • N:1 failover on DSP boards		Avaya Media Gateway 15000 • Large-sized PSTN Gateway • Interface: OC3, DS3 • Protocol: H.248 • Capacity: 24,192 DS0s/frame • Signaling: NI1, NI2, CAS Trunk	
Analog:	Third-party Analog Gateways (Mediatrix)			
Survivable:	Avaya Survivable SIP Proxy • 50 to 1,000 SIP end points • Survivable SIP user support • Basic telephony feature set in survivable mode • Local trunk services • 911 Support • Centrally managed via CS 2100 Secure Router 2330/4134 Converged Branch • 25 to 100/300 SIP end points • Survivable SIP user support • Basic telephony feature set in survivable mode • 911 support • Local trunk services Avaya Survivable Remote Gateway 50 • 5 to 80 IP users • Survivable IP user support		• Basic survivable feature set for IP terminals in LOCAL Mode • 911 support • Local trunks services Avaya Media Gateway 1000M • 80 to 1,000 IP users • 911 support • Survivability with local applications support • Local trunk services • Distribute contact center agents • Optional digital phone support Avaya Media Gateway 9000 • Emergency Stand-alone (ESA) Avaya Remote Gateway 9150 • Supports up to 32 survivable digital telephones	
System Capabilities				
Standards protocols supported:	• G.711 • G729 • G729a • H.323 v4 • T.120 • Q.931 • 802.1d • 802.1p	• 802.1Q • 802.3 • SNMP • FAX – Group 3 • FAX – Group 4 • T.38 • IP Precedence • Differentiated Services	• RTP • RTCP • Committed Access Rate • MGCP • H.225 • H.245 • TCP/IP • UDP/IP	• DHCP • DCL • DNS • LDAP • 802.3af • NAT

Technical Specifications

System Capabilities

Standards compliances:	NEBS • IETF draft-ietf-sip-rfc2543bis-09: SIP: Session Initiation Protocol • IETF draft-ietf-sip-refer-02 • IETF draft-ietf-sip-cc-transfer-05 • IETF draft-ietf-sip-privacy-04 • IETF draft-ietf-mmusic-sdp-offer-answer-02 • IETF draft-ietf-sip-events-04 • IETF draft-ietf-sip-replaces-02.txt • RFC 2976: The SIP INFO Method • IETF draft-ietf-sip-100rel-04 • RFC 2617: HTTP Authentication: Basic and Digest Access Authentication • IETF expired draft draft-choudhuri-sip-info-digit-00.html • IETF draft-antti-rfc2806bis-05 • IETF draft-sen-midcom-fw-nat-01 • IETF draft-ietf-impp-cpim-pidf-01 • IETF draft-ietf-simple-presence-04 • IETF draft-ietf-sipping-conferencing-models-01 • RFC 3261 – SIP: Session Initiation Protocol • RFC 3262 – Reliability of Provisional Responses in the Session Initiation Protocol (SIP) • RFC 3326 -The Reason Header Field for the Session Initiation Protocol (SIP) • RFC 3515–The Session Initiation Protocol (SIP) Refer Method • RFC 3263–Session Initiation Protocol (SIP): Locating SIP Servers • RFC 3264 – An Offer/Answer Model with the Session Description Protocol (SDP) • RFC 3265–Session Initiation Protocol (SIP)-Specific Event Notification • RFC 3311 -The Session Initiation Protocol (SIP) UPDATE Method • RFC 3323 -A Privacy Mechanism for the Session Initiation Protocol (SIP) • RFC 3325–Private Extensions to the Session Initiation Protocol (SIP) for Asserted Identity within Trusted Networks
Certifications:	Joint Interoperability Test Command (JITC) – The only multi-function VoIP switch certified by the U.S. Department of Defense.
Management (OAM&P):	Features point-and-click GUIs using industry-leading hardware with mission-critical applications running on fault tolerant hardware. This suite of element management solutions through the Integrated Element Management System provides full fault, configuration, accounting, performance and security (FCAPS) functionality.
Redundancy and survivability	
Standard:	CPU, inter-cabinet processor links, main memory, line controllers
Optional:	Geographic survivability of call servers up to 75 miles (Compact) – via direct Optical interface or Gigabit Ethernet, up to 7+1 CPU load sharing (XA-Core), Emergency Stand-Alone and survivable gateways.
IP Phone (Unistim):	Driven by the Centrex IP Client Manager application. Provides a floating IP address approach to failover. If the primary processor fails, the floating IP address will be taken over by the secondary processor. All call states are synchronized between primary and secondary processors to ensure that active calls are protected during any failure. This implementation can also be supported in geographically survivable networks
SIP:	Driven by the Session Server Line or Application Server 5300 application. Provides a floating IP address approach to failover. If the primary processor fails, the floating IP address will be taken over by the secondary processor. All call states are synchronized between primary and secondary processors to ensure that active calls are protected during any failure. This implementation can also be supported in geographically survivable networks.

Environmental

Operating environment

Condition	Value
Ambient temperature:	In the range of 10°C to 30°C (with short-term variations in the range of 5°C to 49°C)
Relative humidity:	In the range of 22% to 55% (with short-term variations in the range of 20% to 80%)
Atmospheric pressure:	423mmHg (69.2KPa), corresponding to 3,048m (10,000 feet) of altitude
Ambient air:	With cleanliness < class 100,000 (number of particles > 0.5 microns per cubic foot)

Input voltage

For the Call Control Frame and Extension Frame, external power requirements are 2 feeds — A and B, -36 to -72 VDC, rated to a minimum of 120A and a maximum of 150A. This feed must be supplied from the customer power plant, not from the CPDC. The power dissipation for the CCF is 4600 Watts max @ -48 VDC and for the SAMF is 3800 Watts max @ -48 VDC.

Power consumption

Component	Voltage range	Typical current (Amps)	Comments
Call Control Frame:			
Mass storage shelf	-36 to -72 VDC	11 A @ -48 VDC (800 max watts)	30A breaker
SAM21 shelf	-36 to -72 VDC	16.7 A @ -48 VDC (800 watts)	With call agent. 30A breaker
COAM Equipment Frame			
SUN Netra™ t 240	-36 to -72 VDC	14 A @ -48 VDC (672 watts)	20A breaker
Inverter	-48 VDC	6 A @ -48 VDC	20A breaker
Extension Frame			
SAM21 shelf (optional – up to 3)	-36 to -72 VDC	16.7 @ -48 VDC (800 watts)	30A breaker

Dimensions

Cabinet	Dimensions	Use
C42 equipment cabinet	107 cm wide x 183 cm high x 71 cm deep (42 inches x 72 inches x 28 inches)	• XA-Core • Message Switch • ENET
PTE2000 equipment cabinet	61 cm wide x 213 cm high x 61 cm deep (24 inches x 84 inches x 24 inches)	• SAM21 shelves with Call Agent, Network File System and Gateway Controllers • Sun Netra servers for Device Managers and OAM&P applications

Note: In Communication Server 2100 Compact configurations, the main PTE cabinet houses two SAM21 shelves. A second PTE2000 frame is required to house Element Managers for Communication Server 2100 Compact components

Earthquake protection

Communication Server 2100 equipment is compliant with the following North American softswitch standards for telecommunication equipment:

- FCC part 15, Class A
- UL 1950/CSA 950
- Telcordia NEBS Level 3 criteria (GR-63-CORE, GR-1089-CORE)

About Avaya

Avaya is a global leader in enterprise communications systems. The company provides unified communications, contact centers, and related services directly and through its channel partners to leading businesses and organizations around the world. Enterprises of all sizes depend on Avaya for state-of-the-art communications that improve efficiency, collaboration, customer service and competitiveness. For more information please visit www.avaya.com.

© 2010 Avaya Inc. All Rights Reserved.

Avaya and the Avaya Logo are trademarks of Avaya Inc. and are registered in the United States and other countries.

All trademarks identified by ®, TM or SM are registered marks, trademarks, and service marks, respectively, of Avaya Inc.

All other trademarks are the property of their respective owners. Avaya may also have trademark rights in other terms used herein.

References to Avaya include the Nortel Enterprise business, which was acquired as of December 18, 2009.

03/10 • UC5166



INTELLIGENT COMMUNICATIONS

avaya.com