AVAYA

Avaya Converged Communications Server

Avaya Converged Communications is your key to a rapidly expanding portfolio of exciting capabilities. A crucial software component of this offering is the Converged Communications Server (CCS). Thanks to CCS, you can integrate Instant Messaging with voice. You can deploy powerful "presence" technology to every user in the enterprise. And you can bring standards-based Session Initiation Protocol (SIP) telephony to existing voice networks. Avaya Converged Communications is a breakthrough, creating nothing less than real-time multi-modal communication. And Avaya CCS helps make it happen.

CCS can be easily integrated with today's telephony networks to deliver services to an incredible range of standards-based user agents and devices. What's more, CCS lets you integrate communication into critical business and web applications—creating new opportunities for communications-enabled business processes.

Key Benefits

Enterprise-class Instant Messaging is fully integrated with telephony and conferencing and accessed through a single user identity.

Enterprise-class presence eliminates telephone and email tag and represents a virtual "peek over the cubicle" for far-flung branch offices and telecommuters.

Unleashes Avaya MultiVantage™ Communication Applications as modular components providing services that can be readily integrated into critical business applications to streamline communication.

Implements an open, standards-compliant architecture for telephony, instant messaging, and other communication services. The Converged Communications Server software set is designed to interoperate in a multi-vendor environment.

Supports next-generation mobility solutions that will use SIP to offer seamless hand-off from enterprise wireless LANs to the public cellular networks.

Maximizes economic gain with minimum service and business interruption.

Easy migration. Integrates with existing telephony systems, enabling analog, Time Division Multiplex (TDM) and H.323 telephones to be bound to a SIP address.

No forklift upgrades for many existing Avaya customers. The migration protects existing investments.

| IP Telephony | Contact Centers | Unified Communication | Services |
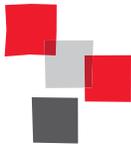
Enterprise-class Instant Messaging integrated with voice

CCS supports instant messaging services through the latest release of the Avaya IP Softphone application. Specifically, it combines a SIP-based instant messaging client with a presence-enabled "Buddy" (contact) list that is integrated to support both voice and IM communications. While Instant Messaging (IM) by itself is an undeniably powerful tool for effective communications, Avaya offers an even more powerful solution—multimodal real-time voice and IM communications with integrated presence. Through integrated presence, users can now quickly identify whether peers are available, away, or on the phone, and instantly choose the best communication method for their needs. And unlike other attempts to offer Instant Messaging to the enterprise, Avaya Converged Communication is fully integrated with telephony, fully manageable, and fully scaleable. We call this "Enterprise-class" IM and it has eight distinguishing features:

Integrated. Switch from voice to IM and back with a click of the mouse.

Secure. Encrypted communication protected from hackers and snoops.

Open. Unlike proprietary IM applications, Avaya Converged Communication is based on the industry-standard SIP protocol.

Safe. Behind the corporate firewall.

Controlled. Registration and identity can be centrally managed.

Archival. You can retain transcripts of IM sessions for internal reviews and government mandates.

Easy to administer. CCS enables you to assign a single user contact address for both voice and IM, increasing efficiency and reducing IT expenses. No more provisioning different name spaces and maintaining solutions in different silos.

Scaleable. Supports thousands of users.

Employees can also now choose the best communication method for their needs. They can click into Instant Messaging for quick questions and information exchange. They can choose telephony for more involved communication. And they can retain the ability to switch from one to the other during the same session with a simple click of the mouse!

Enterprise-class presence awareness

An essential element of Instant Messaging is presence awareness, which is automatically updated as conditions change. The Avaya Converged Communications Server enables your users to automatically announce:

- Their current status (online or offline),

- Their availability (on the phone, away at lunch, in a meeting, etc.),

- And how they wish to be contacted (Instant Messaging, cell phone, office phone, etc.).

For the caller, Enterprise-grade presence means fewer wasted calls, reduced frustration and greater productivity. And for the party called, it means shorter queues of email and voice mail messages, greater accessibility—and again, greater productivity.

An evolution towards Converged Communications

Critically important for the future, the Converged Communications Server is based on Session Initiation Protocol (SIP). Why SIP? Because SIP is an industry standard for establishing, modifying, and terminating communication sessions. Because SIP is media agnostic, perfect for video, chat, and Instant Messaging, in addition to voice. Because SIP is modular and extensible, accommodating existing legacy protocols. For all these reasons, SIP is perfect for the next-generation Converged Communication network.

CCS provides SIP-based services within the Communication Services layer of the Avaya Communication Architecture. CCS integrates SIP-enabled applications as modular feature servers that can be accessed by a wide range of standards-based user agents, IP phones, web-based applications as well as legacy telephony.

The results can be amazing. Here's a highly extensible infrastructure. Here's rapid deployment of communication applications as web-based components of critical business processes. Imagine integrating Instant Messaging and Telephony with Enterprise Resource Planning, so that planning emergencies trigger automatic Instant Messages to critical decision-makers, with an emergency voice conference automatically set-up and communicated to each member via instant messaging or natural speech. Imagine integrating presence technology with Customer Relationship Management, so that key customer calls reach your sales representatives wherever they happen to be. Avaya Converged Communication is your best path toward achieving these feats of real-time business response.

An open architecture for telephony and real-time communications

The Avaya CCS provides the fundamental services required to establish SIP in the enterprise:

- Proxy Server
- Registrar Server
- Redirect Server
- Presence Server[1]

These SIP elements are modular software components that can be distributed for scalability and easily incorporated within existing networks. The CCS runs over Linux on one or more Avaya S8500 media server platforms[2] , enabling you to integrate SIP-based and conventional telephony.

SIP Telephony

When the Avaya CCS software set is set up to communicate with one or more Avaya media servers running the latest release of Communication Manager, it will support the deployment of SIP telephony devices. In this configuration, Avaya
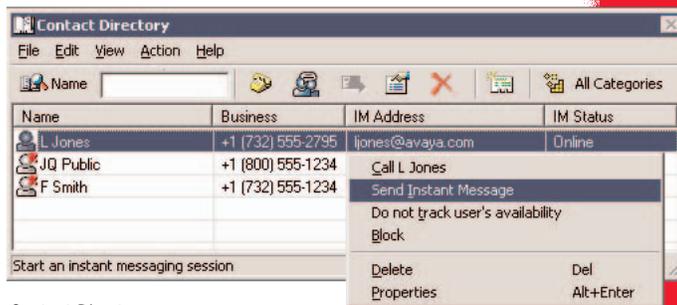
Contact Directory

The contact directory incorporates the IM address of a user and the user's IM status.
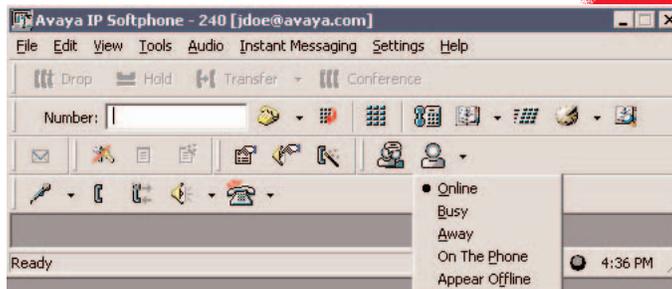
Presence Status Management

User's presence status is controlled from Softphone's main screen, through the toolbar shown above or through a menu option under 'Instant messaging' menu header

Communication Manager logically connects to CCS to become a telephony server that can be accessed not only by an Avaya SIP telephone, but by any SIP-compliant device. In this way, SIP users can register a legacy telephone against their SIP address (e.g. sip:gwbush@whitehouse.gov) and can be reached by anyone who attempts to communicate with that address. Furthermore, users with analog, DCP, or IP phones on the existing telephony network can communicate with any SIP endpoint. Any SIP phone, whether from Avaya or not, now becomes a normal extension in the telephony network. Not only will the phone be able to dial and be dialed as an extension in the enterprise dial plan, the phone will also use a significant number of Communication Manager features that are normally not available on standards-based SIP telephones.

For enterprises, this means a migration path to open, standards-based telephony that protects existing investments while providing the capabilities of converged communications.

---

[1] Supported in an upcoming release. In the initial release, SIP presence will be managed within the IP Softphone client.

[2] Ships with an additional 51 2MG of memory.

a higher plane
of communication
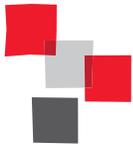
It means feature transparency between legacy and next-generation communications. You get the ability to create an interoperable multi-vendor environment via the implementation of open standards. And you experience maximum economic gain with minimum service interruption.

CCS software also helps reduce costs by enabling SIP telephony "trunking" either from one Avaya Communication Manager server to another (via Virtual Private Network) or via IP network service providers. What's more, SIP network service providers let you leverage new SIP-based networks that offer very competitive prices for origination/ termination services.

Enterprise-Class Scalability

CCS software is designed to be extensible and scalable. SIP services within CCS are modular and can be easily distributed to multiple server platforms to increase capacity. Typically, CCS will be deployed on one or more platforms within the enterprise network in a hierarchical topology.

Each platform using CCS can be licensed to operate in one of three proxy server modes:

Edge Server: The Edge Server represents the entire enterprise domain, incorporating SIP services that redirect user requests from home servers to other home servers, as well as to or from outside domains. One Edge Server is provisioned within the enterprise, and it does not directly support users. The Edge Server also presents the master administrative interface for updating all CCS powered servers and databases in the network.

Home Server: Home Servers provide call routing as well as end-point registration services and are provisioned for users. The Home Server accepts registration requests for SIP endpoints and routes communication session requests to users within its domain. Communication requests to users outside of its domain are sent to the Edge Server for routing. The Home Proxy also interfaces to Avaya Communication Manager running on a media server via a SIP connection.

Home/Edge Server: This mode, which is used for small to mid-sized enterprises, combines the Home and Edge functions within the same server. In this mode, only one CCS powered server needs to be provisioned within the network.
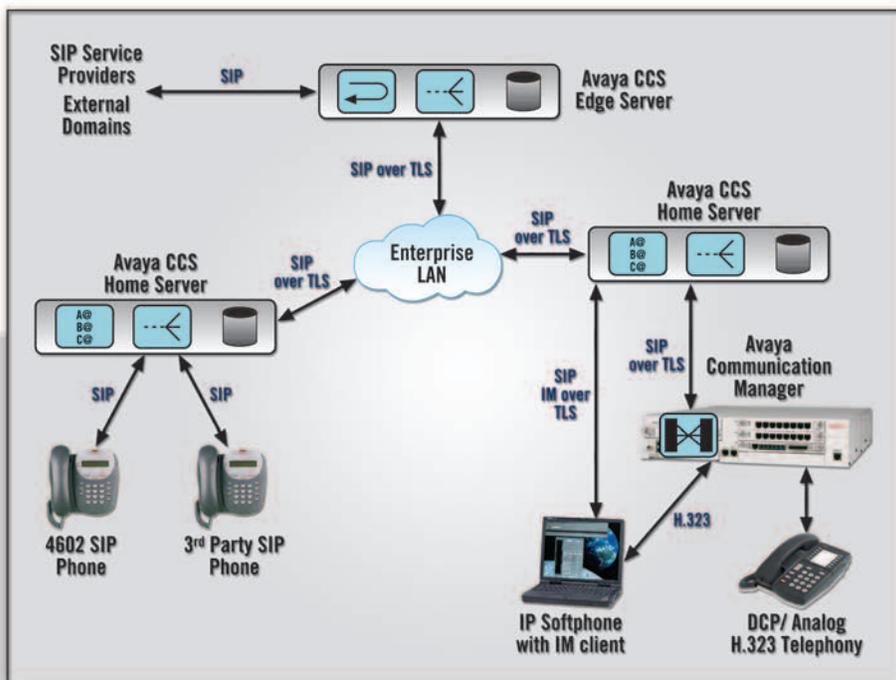
Avaya Converged Communications Server Deployments

With its modular services design and hierarchical networking approach, CCS easily scales to provide support for SIP-based telephony and Instant Messaging services, from hundreds to tens of thousands of users on distributed server platforms.

Enterprise-Class Security

To help ensure security of sensitive communications, Converged Communications Server software lets you use Transport Layer Security (TLS) with signed certificates. This provides authentication and encryption protection for all SIP signaling and Instant Messaging traffic between CCS powered servers and Communication Manager media servers. CCS also provides user authentication, using MD5 Digest Authentication to prevent passwords from being sent across the network in clear text.

Commitment to Interoperability

Behind the scenes, Avaya has been working intently, preparing the way for Converged Communication. From the outset, they have been an active partner and contributor to the Internet Engineering Task Force's SIP, SIPPING and SIMPLE Work Groups. Avaya has led and sponsored the major SIP events, is a key member of the SIP Forum and a regular participant in interoperability events such as SIPiT.

Avaya Converged Communications Server Functions

SIP Services

SIP Proxy: Transaction Stateful, Session Stateless

SIP Redirect: Transaction Stateful, Session Stateless

SIP Registrar

SIP Presence[3]

SIP IETF RFC 3261 compliant

SDP IETF RFC 2327 compliant

Link protocol support: UDP/TCP/TLS

Security

MD5 digest authentication

TLS supported authentication and encryption (RFC 2246; RFC 3261 for SIP)

Management

Web Interface with master administrative console provides central management of CCS servers and databases. Remote management is possible through the Remote Supervisor Adapter on S8500.

Server Platform	
Platform	**Avaya S8500 Media Server**
Central Processing Unit	2.8 GHz Pentium 4 processor
Memory	1 GB (includes an additional 512 MB DIMM)
Hard Drive	40 GB
Operating System	Linux

[3] Supported in an upcoming release. In the initial release, SIP presence will be managed within the IP Softphone client.

a higher plane
of communication

Learn More

To learn more, talk to an Avaya Client Executive or Authorized BusinessPartner. Also, visit avaya.com/learnmore/ip. For more information about Avaya and other award-winning Avaya solutions, visit avaya.com.

About Avaya

Avaya enables businesses to achieve superior results by designing, building and managing their communications networks. Over one million businesses worldwide, including more than 90 percent of the FORTUNE 500®, rely on Avaya solutions and services to enhance value, improve productivity and gain competitive advantage.

Focused on enterprises large to small, Avaya is a world leader in secure and reliable IP telephony systems, communications software applications and full life-cycle services. Driving the convergence of voice and data communications with business applications — and distinguished by comprehensive worldwide services — Avaya helps customers leverage existing and new networks to unlock value and enhance business performance.

reach

AVAYA

a higher plane
of communication

| IP Telephony | Contact Centers | Unified Communication | Services |

avaya.com