

Oracle Communications WebRTC Session Controller

Web Real-Time Communication (WebRTC) is a W3C API standard that is supported by every major internet browser as well as smart phones applications. A WebRTC client which is either a browser application or a smart phone application, gives the client direct control over real-time video, audio, and data. The Oracle Communications WebRTC Session Controller provides a straightforward, effortless, connection from the WebRTC client to a telephone network or to any Voice over IP (VoIP) network. A few example deployments where connecting a browser to the network include:

- Add a “click-to-call” button to enrich a contact center customer’s experience with multi-media capabilities such as video, voice, screen-share, or chat
- Supporting secure, lightweight, remote agent access to on-prem contact center services
- A web-based healthcare system that seamlessly interconnects, doctors, pharmacies, labs, clinics, hospitals, and insurance companies to conference, chat, and share HIPAA patient data.

Connecting real time voice, video, or data from a browser to a variety of multi-media networks is invaluable to industries such as healthcare, the military, government services, food and beverage, shipping and logistics, hospitality, construction and engineering, or utilities, and many other industries.

The latest release of the Oracle Communications WebRTC Session Controller adds cloud deployment capabilities for real time automatic scaling and upgrades for optimal use of hardware and network resources. It is the industry’s most comprehensive web-communications application server, delivering web-to-network standards-based service creation and execution platform for browser and smart phone applications. It enables businesses to rapidly develop, and cost-effectively deploy, innovative, revenue-enhancing communication and collaboration web interfaces.

The Oracle Communications WebRTC Session Controller bridges the web to the telephone network with secure client-network management, highly reliable fault resilient web to telecommunications processing, and full WebRTC client to voice network interoperability.



WebRTC Session Controller
connects Web to Voice Networks

Key Features

- Built for the Cloud, Virtualized or On-Prem
- State-full session management with Web connection rehydration
- Dynamic media anchoring
- Web to network message and session brokering
- Software Development Kit:
 - Browser mediation
 - Identity/authentication
 - connection management
 - Client-server synchronization
- Secure and Compliant with W3C WebRTC JavaScript, IETF SIP, 3GPP, and Policy/Diameter(Rx)

Key Benefits

- Bridge browsers to voice networks
- Provide client authentication with connection management
- Automatically reestablish dropped browser connections including dropped network signal, browser reset, network handover, or user-initiated swap of devices
- Efficiently handle encryption keys and network authentication
- Lower cost on application development, integration, and deployment
- Faster time to develop and deploy Web communications

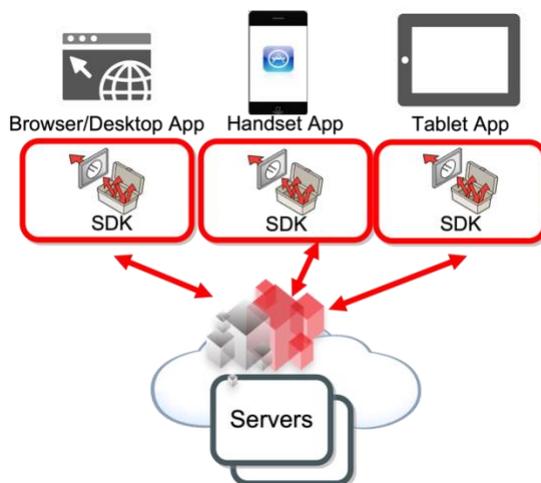
The Browser Phone Call Conundrum

While the WebRTC protocol is designed to enable simple peer-to-peer web communications, for WebRTC to interoperate with a phone network, Web-to-Network enhancements are required:

- Application control and synchronization during network changes and browser page reloads
- Seamless integration with existing networks and systems
- Identity management between multiple devices and across web and telephony domains
- Border and application security to prevent attacks and service abuse
- High-capacity media handling for NAT traversal, encryption, and transcoding
- Robust and dynamic interworking with existing infrastructure

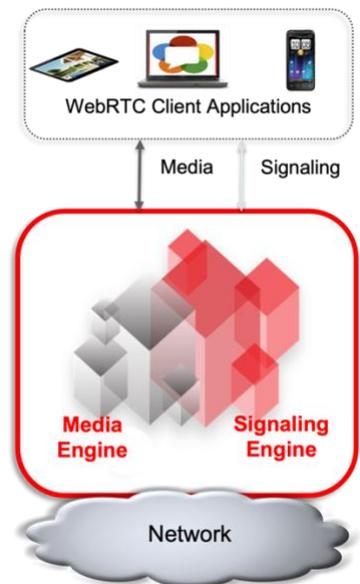
The Oracle Communications WebRTC Session Controller brings high quality network capabilities into the web domain enabling businesses to create a browser-rich communications inside a webpage or on a mobile app. The Oracle Communications WebRTC Session Controller includes:

- Signaling Engine – Interworking between JavaScript based web-clients using signaling over WebSockets and SIP signaling into the core network
- Media Engine - Interworking between WebRTC-associated media and SIP-associated media
- Client SDK – Extensible software development kit (SDK) to assist with rapid RTC application development



Deployed Use Cases

- Unified Communications
- Contact Center Solutions
- Conferencing Servers
- Tele-presence
- Tele-Health/Counseling



RELATED PRODUCTS

- Oracle WebLogic Suite
- Oracle Communications Converged Application Server
- Oracle Communications Session Border Controller
- Oracle Communications Enterprise Communications Broker
- Oracle Java

Delivering Reliable Web Communications

The Oracle Communications WebRTC Session Controller has been developed to address reliability from both a network as well as user perspective. For users connecting through a browser or smart phone, it features rehydration which automatically reestablishes dropped WebRTC calls regardless of cause - a dropped network signal, browser reset, network handover or user-initiated device swap. From a network perspective, it features a distributed, highly available signaling and media architecture delivering carrier-grade scalability with media anchoring for NAT traversal and SRTP termination.

Security

Security is addressed at both the user and network level. To ease the overload in a world filled with too many passwords, the solution supports a range of options for user authentication. These options include web-based user authentication implementing the Oauth standard as well as traditional Telco/enterprise authentication mechanisms. At the network level, the solution prevents overload of the edge and back-end infrastructure and denial of service attacks while prioritizing traffic to maintain normal service to valid users. It efficiently handles encryption keys and network authentication.

Browser to Network Interoperability

At the core of Oracle Communications WebRTC Session Controller is the industry's most advanced SIP Servlet container, natively integrated with the industry's most powerful Java Enterprise Edition containers that insures interoperability for web-to-web and web-to-network communications. The Oracle Communications WebRTC Session Controller includes three important functions:

- Client SDK speeds development with an extensible JavaScript based environment providing automatic browser mediation, client authentication, session management, and connection control.
- The Signaling and Media engines bridge WebRTC to existing networks with WebRTC to voice signaling and WebRTC media to existing VoIP system media.
- The Media Engine also provides scalable network-based media anchoring for NAT traversal, de-encryption and re-encryption to accommodate different standards, codec transcoding and multi-vendor interoperability to normalize implementation differences.

Integrate and Accelerate Multimedia Communications

Web-Telecom interfaces involve the delivery or sharing of one or more types of media, whether it is voice/audio, video, images or other types of data, which requires browsers and mobile apps to interact with media servers. Oracle Communications WebRTC Session Controller simplifies the development of rich-media converged applications by supporting the media server interfaces within the SIP Servlet container. It reduces the time and complexity required of developers to integrate with 3rd party media servers, resulting in reduced costs and faster time-to-market for innovative multimedia converged applications.

Extreme Performance and Predictable Latency

Web interfaces deployed in telecom networks require real-time session set-up and application data access with minimal latency, because these factors have a direct impact on the quality of the end-user's experience. Utilizing Java's real time characteristics, the Oracle Communications WebRTC Session Controller a high-performance computation profile with low latency throughput which are fundamental attributes of communications services.

Taking full advantage of the real-time Java Virtual Machine (JVM), the coherence data grid, and optimization of the WebRTC Session Controller for extremely high throughput, the WebRTC Session Controller can scale to thousands of sessions on a single server depending on traffic and hardware resources, and scales horizontally as needed by adding more servers to a cluster.

Summary

Using WebRTC, businesses may create new web-based communication services or extend existing services to web-based clients such as a company's Unified Communications or their contact center. The distinctive advantages the Oracle Communications WebRTC Session Controller provides are:

- Web and network reliability - the Oracle Communications WebRTC Session Controller reliably maintains an active session through browser anomalies or network failures
- Web to network interoperability - the Oracle Communications WebRTC Session Controller provides signaling, address and media interworking to support large scale, reliable interoperable, universal communications.
- Web and network security – adding to network security, the WebRTC Session Controller incorporates web-based security standards providing network security, authentication, and authorization.

The Oracle Communications WebRTC Session Controller is deployed in a variety of industries including healthcare, financials, cable, telecommunications, emergency services, and government. Based on the WebLogic container architecture, the WebRTC Session Controller may be deployed on standard Linux hardware, a virtualized environment, or in a cloud native container architecture. Built with industry standards for containers, networks, and IT, the Oracle Communications WebRTC Session Controller is ideal for managing network traffic that requires IT/WEB interaction.

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