ORACLE COMMUNICATIONS
WEBRTC SESSION CONTROLLER

The Oracle Communications WebRTC Session Controller enables communications service providers (CSPs) and enterprises to offer WebRTC services – from virtually any device, across virtually any network – with carrier-grade reliability and security.

Voice communications are increasingly shifting to web and IP-based applications that are outside of traditional telephony networks. Enterprise users want to access their unified communications applications with their own Internet-connected mobile devices and consumers increasingly prefer Internet-based communications channels to access contact centers.

To address these challenges, CSPs and enterprises are beginning to deploy innovative new applications based on a protocol known as WebRTC. WebRTC is an emerging Internet standard that equips any device with a supported web browser with real-time communications (RTC) capabilities – such as voice calling, video or screen sharing – via simple application programming interfaces (APIs) without requiring users to download plug-ins.

WebRTC allows users to seamlessly communicate in high definition video and/or voice with shared screen capabilities. While WebRTC promises a heightened communications experience and creates new opportunities for both CSPs and enterprises, there are several network challenges to overcome. Oracle addresses these challenges with a purpose-built WebRTC media/signaling engine and a client-side Software Development Kit (SDK) solution. The Oracle Communications WebRTC Session Controller bridges the web to the SIP/IMS network with secure client-network management, highly reliable fault resilient web to SIP session processing, and full WebRTC device to SIP network interoperability.

Challenges

While the WebRTC protocol is designed to enable simple peer-to-peer web communications, for WebRTC to become a widely used communications technology, sophisticated server-side applications must be developed to address:

- Application control and synchronization during network changes and browser page reloads
- Rapid application integration with existing 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

Solution Overview

Oracle has created the Oracle Communications WebRTC Session Controller to address these challenges and provide a foundation for innovation. The Oracle Communications WebRTC Session Controller is a highly available, carrier grade solution designed to enable rapid development and deployment of powerful and differentiating WebRTC applications. Oracle Communications WebRTC Session Controller is based on proven technologies from the Oracle Communications service delivery platform product family. It brings carrier grade network capabilities into the web domain enabling CSPs and enterprises to create a new form of high quality communications for their users.
Product Components
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

Reliability
The Oracle Communications WebRTC Session Controller has been developed to address reliability from both a network as well as user perspective. For users, it features rehydration which automatically reestablishes dropped WebRTC sessions 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.

Interoperability
The WebRTC Session Controller includes features designed to ensure interoperability for web-to-web and web-to-network communications:

- 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 SIP/IMS signaling and WebRTC media to existing VoIP system media.
- The Media Engine also provides scalable network-based media anchoring for NAT traversal, decryption and re-encryption to accommodate different standards, codec transcoding and multi-vendor interoperability to normalize implementation differences.

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.
Summary

Using WebRTC, CSPs may create new web-based communication services and extend existing services to web-based clients. Enterprises can extend access to their UC and contact center communications infrastructures to mobile users. The distinctive advantages the Oracle Communications WebRTC Session Controller provides are reliability, interoperability, and security. The Oracle Communications WebRTC Session Controller reliably maintains an active session through browser anomalies or network failures. It incorporates web-based security standards providing network security, authentication, and authorization. With a focus on interoperability, the Oracle Communications WebRTC Session Controller provides signaling, address and media interworking to support large scale, reliable interoperable, universal communications.

Contact Us

For more information about the Oracle Communications WebRTC Session Controller, visit oracle.com or call +1.800.ORA1CE1 to speak to an Oracle representative.