Kandy Link — WebRTC Gateway
Using the Web to Extend the Value of Service Provider Networks


The Impact of WebRTC

The adoption of the WebRTC standard by all of the major web browser providers creates an enormous opportunity to change the way people communicate. WebRTC makes it possible to engage in a two-way multi-media conversation (voice, video, screen share) without any extra software or purpose-built devices. Any modern computer with a mic and speakers is now a full communications endpoint supporting voice, video and collaboration tools.

The simplicity of WebRTC-based communication access is in sharp contrast to traditional communication tools that require users to load a special app or a plugin for each website or service they use. This issue has gone from annoying to business impacting as many organizations' heightened security policies preclude users from adding new applications. And since WebRTC leverages HTML5 and HTTPS, its firewall friendly, meaning it works almost everywhere.

Bridging the Digital Divide

Ribbon's Kandy Link Gateway offers service providers a simple and scalable way to connect different generations of communication elements and customer experiences.

- Kandy Link can deliver line or station-side SIP services to existing communication elements (as a service, in network or on-premises) while delivering WebRTC-based services to web pages and mobile devices.
- Organizations can maintain the infrastructure and experiences customers already know, while simultaneously offering the latest web-based voice, video and collaboration tools.
- It's easy to use Kandy Link's mobile APIs to embed real time communications into mobile apps and communication-enable business processes.
- Developers can easily extend their applications to include communications, using familiar web development tools.
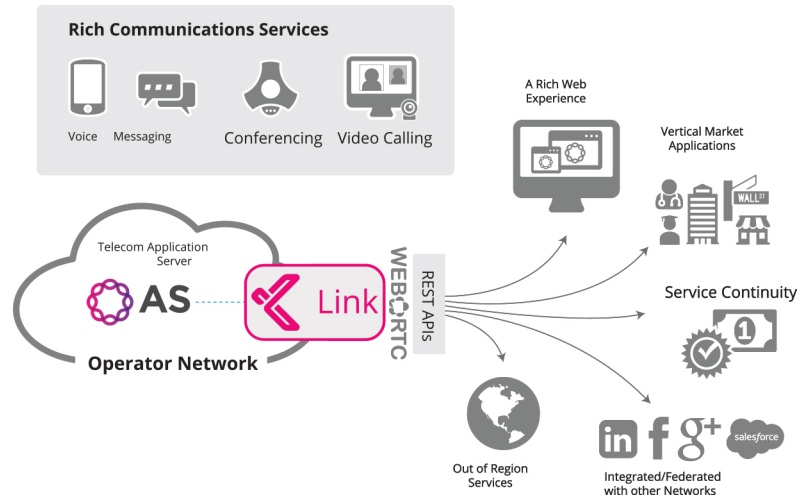
Multiple Deployment Options

Kandy Link is deployed in a subscription based, fully managed model. Users can choose the operational deployment model that best fits their use case:

Public Cloud – as a Service
No hardware or capital investment – WebRTC services are delivered from the public Kandy cloud with access to Kandy's entire apps portfolio.

Private Cloud
In network or in a 3rd party data center. Available as software-only running on virtualized environments (VMWare, KVM). Kandy Cloud delivers access to the Kandy apps portfolio.

On-premise
Kandy Link on-premises for local media and user data (for better privacy and security). Kandy Link connects to Kandy Cloud for services such as Mobile Push Notifications (for Apple, Google).

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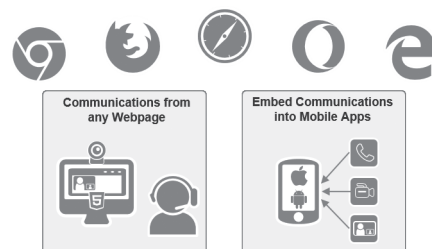
Embedded Communications via RESTful APIs

Ribbon has replicated the approach used by many successful social/web applications, such as Twitter and Facebook, by consciously keeping its REST APIs simple. This removes the need for developers to have telecom domain knowledge. APIs are included to provide:

- User Identity, Association, Authentication/Authorization
- Call set-up and management
- Access to User Data such as Call Logs, Address Book(s)
- Messaging
- Presence (Publish, Subscribe, Fetch, Permit, Deny)
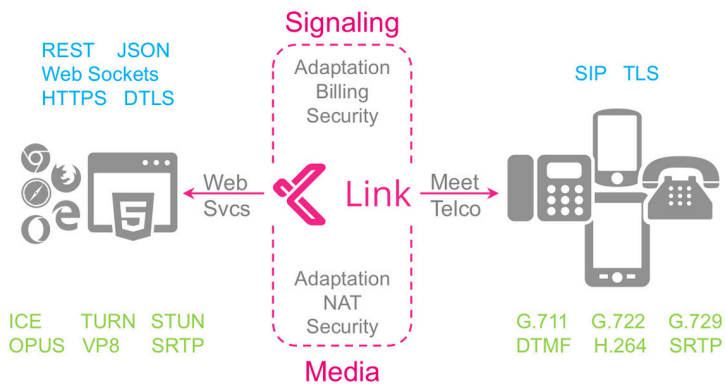
Signaling Adaptation

Kandy Link has an adapter model that enables diverse protocol support, either towards the telecom network (typically SIP) or towards the web environment (for example WebRTC, REST APIs, and related protocols). This adaptation enables the broader web developer community to develop applications that include real-time communications using JavaScript and communicate with other systems using protocols like REST.

Kandy Link uses REST signaling on the web application side of the boundary and maps the REST signaling into compliant SIP signaling on the communications network side. The REST API supports a number of sophisticated functions (in concert with an applicable application server), in addition to basic calling. This enables developers to integrate a provider's rich communication services (e.g. Presence, Messaging, Call Logs, Address Books, Friends Lists, Route Management) with basic calling to create business applications that natively include communications services.

Media Adaptation

Kandy Link provides media adaptation between WebRTC environments and SIP-based communications environments. WebRTC mandates a set of media handling procedures that are not typically implemented in existing VoIP environments. Kandy Link:

- Supports adaptation of transport types
- Provides NAT traversal functions (using ICE and TURN)
- Bridges security models (using DTLS-SRTP)
- Manages media transcoding via Ribbon SBCs or external transcoding resources
- Ensures effective and quality communication of media through networks prone to error and packet loss (using AVP and AVPF)

Kandy Link's WebRTC Broker services ensure that the media stream is converted from one format to the other, allowing the use of the WebRTC standard-based services (via browsers or mobile SDK) on one side, and the use of conventional telephony endpoints on the other.

Kandy Link also supports slow-start functionality on broker-only and transcoder deployments, handling delayed media call flows where the initial invites or mid-call re-invites do not have media details (e.g. invites and call notifications without SDP).

Security & Redundancy

Kandy Link is designed to support the most demanding environments, including contact centers and financial services organizations. Providers that deploy Kandy Link in their own network or on customer premises can deploy with geographic redundancy. In addition, Kandy Link is designed to be FIPS 140-2 compliant and each release includes a number of security enhancements.

Summary

WebRTC makes it possible to apply web tools and the web's expansive developer community to real-time communications. Kandy Link bridges the divide between traditional communications and web services. Most importantly, Kandy link makes it possible to continue to deliver traditional services and add web services without a massive infrastructure upgrade. Service providers can move forward without disrupting existing customer experiences.

KandyLink's multiple deployment models, Public, Private and on-premise provides complete flexibility in terms of meeting capital expenditures, element performance and privacy/regulatory requirements.