



orchid link

Virtual Software Session Border Controller Enterprise Edition

NFV based flexible and scalable VoIP switching platform

Powering your virtual UCaaS solution

Cataleya's virtualized software SBC is tailored to meet today's UCaaS requirements, which are largely run as cloud applications to serve small, medium and large enterprises' communication and collaboration needs.

Security and reliability, coupled with simple and rapid scalability, are key to enabling dynamic growth, without the need for large upfront investments. If an OPEX pricing model is preferred over the traditional purchase model, Cataleya's license subscription option makes your cost base mirror your revenue model. Network licensing, instead of node licensing, drives optimized subscription utilization levels to the utmost, hence reducing the overall operating costs.

Orchid Link's multi-tenancy feature gives you the ability to host several clients on their own individual partition on one virtual instance. Your customers can therefore view their system and its performance, including real-time QoS and fraud analytics, independently. Finally to make it a true SaaS, it comes with security, performance, and service-assurance features to back your SLA commitments to your customers.

KEY FEATURES

Architecture, Performance & Scalability

- Optimized "Fastpath" packet processing
- Distributed control and media plane architecture
- Dynamic scaling
- Service and context aware traffic management ensure high SLAs

Operations & Orchestration

- Cataleya central operations manager
- Multi-tenancy features
- Integration with cloud infrastructure management solutions
- API & Northbound interfaces
- Network wide licensing

Service & Revenue Assurance

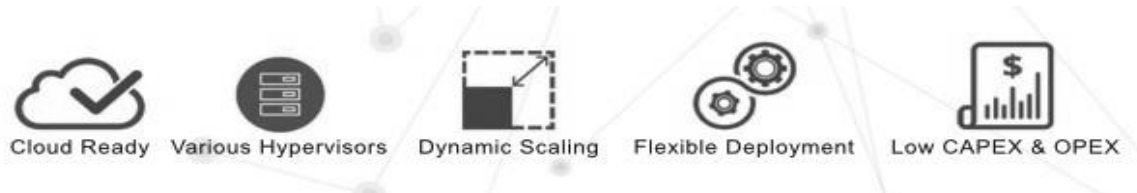
- Real-time analytics/QoS session steering
- Big Data network & service analytics
- SLA management
- Intuitive diagnostic tools
- Fraud & anomalies management
- Integrated Business Intelligence (BI)

Deployment Flexibility

- Commodity hardware 'Bare Metal' SBC platform as a Service (PaaS)
- Virtualized SBC 'Virtual Network Function (VNF)' as a service (VaaS)
- Network Partition as a Service (iNaaS)

What it can do for you

Cataleya succeeded in migrating all the unique features from the hardware-based award-winning Orchid One to its fully NFV based enterprise version, **Orchid Link**. No matter if you run it on dedicated servers or host it in the cloud, carrier grade performance and scalability remain. Offload your operation efforts and allow our Auto-Scaling and Auto-Healing functions to monitor and take the necessary actions to keep your voice and video services running flawlessly.



A multitenant, hosted UCaaS service offering requires to be scalable, feature-rich, and secure. It also involves mixing of small and large enterprise customers. Orchid Link virtualized software SBC meets these requirements perfectly with its multitenancy feature (where enterprises could be assigned appropriately provisioned SBC partitions) and high security voice communication. The key benefits of deploying Orchid Link for this use case include:

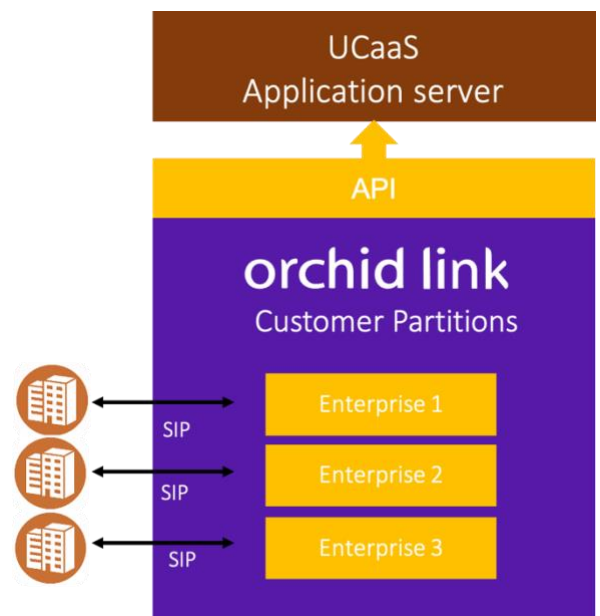
- No CAPEX option
- Pay as you grow business model
- One platform, many tenants
- Scalable and Secure

What's more, all these come with unparalleled service analytics embedded, with the added capability of QoS and Fraud Analytics in a virtualized SBC instance that packs a punch.

Orchid Link performs media transcoding on software. This obviates the need for special hardware, thus allowing deployment flexibility across several virtual infrastructure environments while keeping the core feature set of the SBC platform intact. Use of Data Plane Development Kit (DPDK) libraries ensure that Orchid Link is able to use Fast Path packet processing to achieve high throughput and low latency from virtualized deployments that run on a wide variety of CPU architectures.

Orchid Link is a secure access SBC that supports TLS/SRTP and IPSec for signaling encryption and Mobile authentication (IMS-AKA) and can be deployed as a P-CSCF / AGW in a VoLTE network. Signaling and Media NAPT are supported, including methods to keep NAT pinhole open (using short Registration Expires timer and Dummy packets). Trunks could be proactively monitored for QoS using thresholds based on various QoS parameters including MOS, where alert events are generated when the configured quality threshold is breached. Enterprise oriented features like Fax, DTMF, and SIP call flows involving supplementary services are supported that enables Orchid Link to integrate seamlessly with Class 5 switches and Applications Servers.

A sophisticated Policy Engine powers the flexible and efficient Registration and Service policies on Orchid Link. There are several Service-Independent Building Blocks that allow for creation of multiple services on the fly, for mid-call service dips like Number Portability Lookup, etc., using several protocols like ENUM, HTTP, Diameter, and RADIUS (to name a few). Service Policies could be built to trigger these services based on complex criteria, but with minimal effort.



PRODUCT SPECIFICATIONS

Media Support	<ul style="list-style-type: none"> • G.711, G.723.1, G.726, G.729.1, G.722, G.722.1, G.729 AB, AMR, SILK, Opus • H.264, H.265, VP9 • T.38 • Narrowband and Wideband codecs • Transcoding & Transrating • Tonal conversion from in-band in the input to RTC2833 in the output • RTP inactivity detection, RTCP report • Media NAT 	Interworking capabilities	<ul style="list-style-type: none"> • IPv4, IPv6 interworking • UDP to TCP/TLS interworking • TLS/SRTP – SIP/RTP interworking • Exhaustive, and powerful Signaling Adaptation Framework for SIP Header / Message repair & Call Flow repair • Transcoding • SIP-I, SIP-T interworking • DTMF modes interworking and transcoding • IMS to non-IMS / NGN interworking
Total Visibility Package	<ul style="list-style-type: none"> • Near real-time and trending visibility into Media QoE • R-factor, MOS scores – one way and two-way paths • Periodic and on-demand MOS score calculations • Security threats and mitigation reports – near real-time and trending • System and application performance • Network traffic in and out – packet types, rates, counts • Session KPIs – ITU and I3 • SLA monitoring – near real-time and trending, accepted • SLAs and current SLA adherence levels • Big Data based analytics for prediction models • Business intelligence tools built-in for business/operational insights 	Policy, Routing and Service Core	<ul style="list-style-type: none"> • Call Admission Control at Node, Partition, & Trunk level • Policy -based rules engine – intelligent decision tree • Exhaustive parameters analysis and manipulations – Digits, URI, SIP IEs • Protocol parameter-based call routing • Custom and derived parameter-based routing • Support for directories/route lists • Real-time QoS based routing • LCR based routing • Interface with external SIP 3xx redirection servers • Pre-paid billing systems integration either through Diameter, JSON or REST API
Security and Privacy	<ul style="list-style-type: none"> • Service aware firewall with ACLs and L3, L4 protection measures • Packet rate policing to mitigate DoS attacks • Dynamic pinholes for RTP flows • Malicious/ malformed SIP message handling • SIP message flood handling • TLS for SIP signaling • Media delay detection • Media inactivity detection • Secure RTP (SRTP) for media encryption • Dynamic blacklisting • B2BUA provides topology hiding • Allow sessions only from configured IP address / subnets • Management access secured using TLS (HTTPS) with self-signed certificates • Advanced role-based user management and authentication • User action audit 	Cloud / Virtual Environments	<ul style="list-style-type: none"> • KVM - Red Hat 7.2 with virtualization packages • VMware - ESXi 6.X (vSphere 6.X) • AWS • Openstack for KVM • vCenter for VMware • Cloudify (TOSCA) • Minimum 4 CPUs, 16 GB RAM, 200 GB Storage
		Capacity	<ul style="list-style-type: none"> • Up to 10,000 concurrent SIP sessions per instance • Up to 200 SIP sessions / Calls per second (CPS) per instance • Up to 10,000 RTP/RTCP media flows • Up to 10,000 TLS SIP sessions per instance • Up to 3,000 SRTP sessions per instance • Up to 64,000 registrations per instance • Up to 2,000 registrations per second per instance
		Protocols supported	<ul style="list-style-type: none"> • IPv4, IPv6, IPSEC • TCP, UDP, TLS, RTP, RTCP, SRTP • SIP, SIP-I, SIP-T • DNS, ENUM • SNMP, NTP • SSH, sFTP • Diameter, RADIUS • HTTP / REST, JSON, SOAP, XML, RPC

PRODUCT SPECIFICATIONS – CONTINUED...

Access SBC Capabilities	<ul style="list-style-type: none"> • SIP signaling and media NAPT – topology hiding and Media anti-tromboning • Software-based transcoding • Registration Caching, with prevention of Registration storms and Call Admission Control • Proactive QoS monitoring and alerting for SIP trunks • WebRTC gateway with SIP over WebSocks & DTLS • IETF SIPREC SIP recording interface to call recording systems • SIP Connect 1.0 support: Forking & other services-related SIP message handling to facilitate IPPBX features • Extendable service framework to support authentication-based interop using XML/RPC, RADIUS, Diameter, etc. • DTMF, Fax • IPSEC for signaling encryption and Mobile authentication, IMS-AKA support • IMS P-CSCF, AGW • Multi-tenancy: Ability to create logical SBC partitions as virtual SBCs (Independent SBC partition per enterprise)
Billing	<ul style="list-style-type: none"> • CDR/MDR generation with standard and custom – fields for calls and media related information • XML based CDR field selection, ordering and format • Selection to comply with the back end – billing mediation system • Over 300 columns of call and network quality evaluation for each call – highly customizable
Management System	<ul style="list-style-type: none"> • Alarms – standard and user defined • SNMP based trap generation • Intuitive configuration management • Web-based near real-time analytics and reports • Real-time call tracing (signaling and media) and monitoring • Role-based user access • Software upgrades and version management • NTP support • Backup and restore

For more information, contact us at info@cataleya.com



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Redefining flexibility