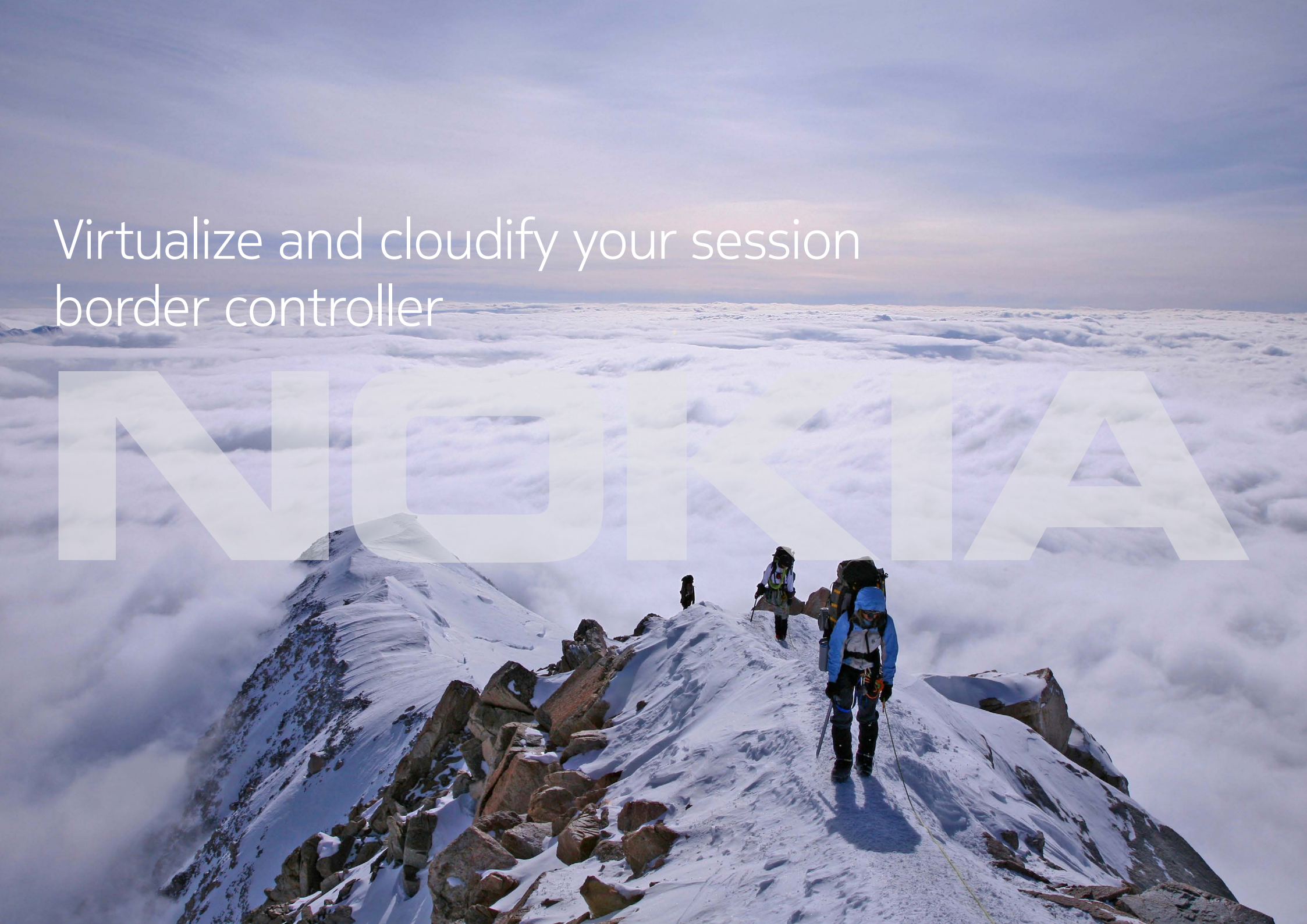


Virtualize and cloudify your session
border controller

NOKIA



The growing importance of SBCs demands evolution

In today's all-IP voice networks, the session border controller (SBC) plays a critical role. With IP networks supporting untrusted, best-effort quality and data-oriented services, it's up to the SBC to protect and sustain quality while securing the media and signaling streams that cross the edges of IP multimedia subsystem (IMS) networks and deliver the end-user services.

These days, there's a lot of that crossing going on.

And it's only going to increase with Voice over LTE (VoLTE), Voice over Wi-Fi (VoWi-Fi), Video over LTE (ViLTE), and multi-device services on the rise — along with more and more interconnection between service providers' IP networks.

To handle this mounting demand, communications service providers (CSPs) know adding costly SBC hardware is not long-term sustainable. Yet many wonder, "What's the alter-

native?" Cloud software design may have brought speed, flexibility and efficiency to other parts of the network, but isn't the SBC too complex and critical to virtualize — or, better yet, cloudify?

Happily, no.

Meet Nokia SBC, the field-proven virtualized and cloud-ready SBC designed specifically to meet the emerging needs of fixed, mobile and converged CSPs and cable operators.

SBCs today and tomorrow

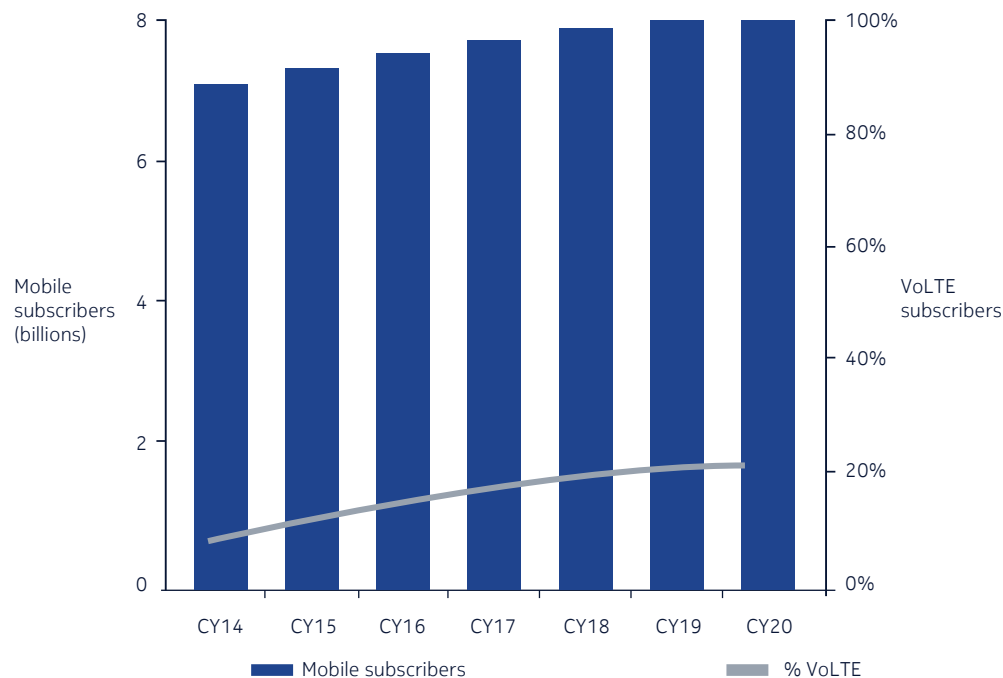


Figure 1: Voice is moving IP (IHS Markit)

Figure 1 outlines the voice network moving to IP : by 2020, more than 20% of mobile subscribers — over 1.6 billion people — will use VoLTE

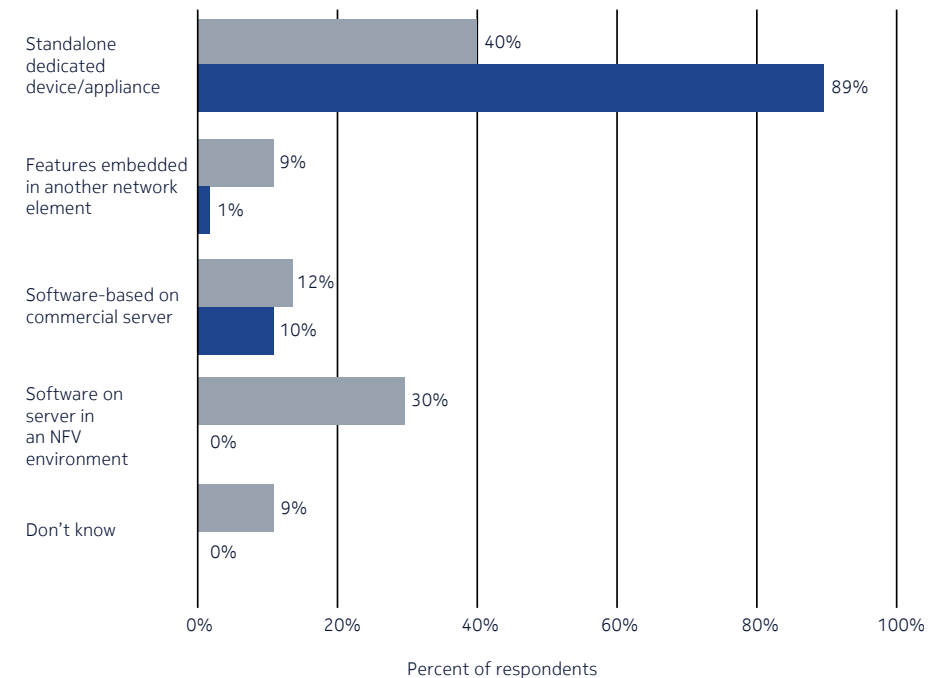


Figure 2: SBC is moving to cloud (IHS Markit)

Figure 2 shows network operators are adapting. Many plan to virtualize their SBCs: between 2016 and 2018, the number using dedicated SBC appliances is expected to drop from 89% to 40% in 2018.

Renewing SBCs the Nokia way

The Nokia virtualized SBC solution delivers the performance, resilience and efficiency you need



1. **Cut down costs.** With access and peering functions running on a single software load, you can lower operating and capital expenditures and get new services to market faster.
2. **Optimize media performance.** Accelerate the media plane with support for software-based transcoding and advanced technologies such as single-root input/output virtualization (SRIOV) and data plane development kit (DPDK).
3. **Simplify day-to-day operations.** Streamline your SBC with a unified operation, administration and management (OA&M) interface to simplify operations and cut management costs.
4. **Protect your network from cyber attacks.** Maintain high call processing rates with no system degradation — even in the face of distributed denial-of-service (DDoS) attacks — with an integrated best-in-class firewall defense system.
5. **Boost innovation and unlock new revenue streams.** Bring telecoms and web services together with the support of WebRTC. Easy-to-use application programming interfaces (APIs) help developers push and pull in mobile communications directly into browsers and web applications that can be monetized.



Flexible deployment options

With the option to deploy Nokia SBC either on-site on COTS-IT servers or fully in the cloud, you can benefit by virtualizing your SBC no matter the size of your subscriber base or to what extent your network is in the cloud.

If you start with our integrated solution, you can transition to our cloud variant once you are prepared for the technology shift.

Integrated vSBC

The integrated variant is designed for small, medium and large deployments and can be installed for access, peering or both. In scaled-down 2 x 2U form, the integrated vSBC increases capital and operational savings and optimizes power with a smaller physical footprint.

Decomposed vSBC

The decomposed variant is designed for large to extra-large access or peering deployment. Deployable on-site in 10U form, the decomposed vSBC allows

independent scaling of the signaling and media planes for even greater capital expenditure savings.

Cloud SBC

Running in an OpenStack and VMware cloud environments, the cloud variant is designed for deployment on any scale. It reduces total cost of ownership by sharing computing resources between virtualized network functions (VNF) and allows SBC VNF components to scale up and down independently to meet fluctuating service demands, enabling unmatched operational efficiency.

End-to-end

Deployed as part of the integrated Nokia cloud native core, the solution minimizes the costs of interoperability testing from launch to future releases and enables endless scalability, better reliability and guarantees an even better service experience for subscribers.

Standalone

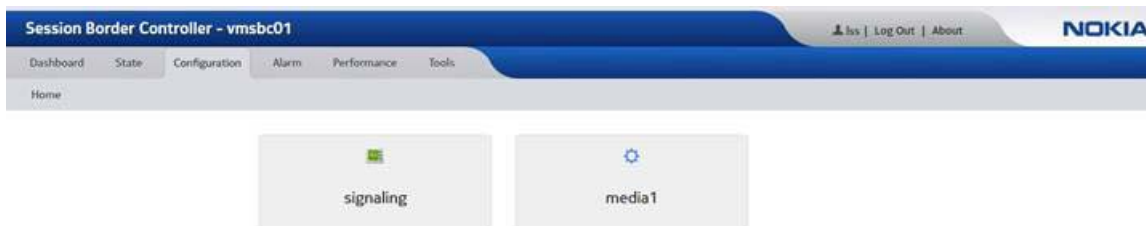
Nokia SBC offers standard SIP diameter and lawful-intercept interfaces, local call detail record generation, storage and retrieval plus powerful SIP screening capability for least-cost interoperability in a multivendor IMS environment.

Unified SBC management and operations

Nokia SBC enables superior management flexibility on three levels:

SBC

Our SBC web user interface lets you configure signaling and media planes for individual SBCs, perform fault management and performance management activities, troubleshoot with SIP call tracing and set multi-level or role-based access control profiles all in one place.



Network

Integration with the Nokia NetAct element management system (EMS) enables a single, consolidated view of the network and centralized operations across SBCs and other network elements. It also supports the open and non-proprietary NETCONF protocol to allow interfacing with any third-party EMS.

Cloud

Support for Mistral workflow and ansible playbooks offers a simplified approach to lifecycle management and makes it easy to deploy, grow and update SBC VNFs. Nokia SBC integrates with Nokia CloudBand and supports on-demand integration with any network functions virtualization management and orchestration solution.



"Nokia is taking an early lead in vSBC deployments, supporting media plane processing at scale and including NFV MANO support. The Nokia SBC is one of few to support embedded load balancing functionality increasing single node performance and easing operations. The company's SBC was also early to support commercial WebRTC capability and includes a leading portfolio of APIs capable of exposure to third-party developers."

David Snow, GlobalData October, 2016





Why Nokia?

When it comes to trusting a vendor with your investments, experience is important. Thanks to Nokia's proven reliability and the integrity and strength of our solution, we offer a safe way to evolve your network away from purpose-built or ATCA-based SBCs to fully virtualized SBCs deployed on-site or in the cloud.

Our IMS portfolio and IMS communications APIs are both ranked as leaders in the market by market research firm GlobalData. We have proven on-field experience with initial cloud deployments and large-scale VoLTE rollouts involving more than 100-million subscribers, so you can be assured your investments are in qualified hands.

Winner of Technology Marketing Corporation's 2016 communications solutions product of the year award, Nokia SBC is recognized for its outstanding achievement in communications. It is uniquely suited to help CSPs cost-effectively bolster their IMS deployments in the face of ramping VoLTE and other taxing peering activity in a virtualized or full telco-cloud environment, offering:

- Flexible deployment options
- Proven resiliency against attacks
- Optimized performance of the virtualized media plane
- Unified OA&M
- Built-in WebRTC gateway and APIs





Nokia Oyj
Karaportti 3
02610 Espoo
Finland

<https://networks.nokia.com/products/session-border-controller>

About Nokia

Nokia is a global leader in the technologies that connect people and things. Powered by the innovation of Bell Labs and Nokia Technologies, the company is at the forefront of creating and licensing the technologies that are increasingly at the heart of our connected lives.

With state-of-the-art software, hardware and services for any type of network, Nokia is uniquely positioned to help communication service providers, governments, and large enterprises deliver on the promise of 5G, the Cloud and the Internet of Things. [**http://nokia.com**](http://nokia.com)

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Product code: SR1712019640EN (December)

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