

## Dialogic® BorderNet™ Virtualized Session Border Controller

BorderNet™ Session Border Controllers supercharge connections between networks, services and subscribers with ease and scale

The Dialogic® BorderNet™ Virtualized Session Border Controller (SBC) brings carrier class SBC functionality to the cloud and enables service providers and enterprises to take advantage of flexibility and cost savings opportunities from virtualization. The BorderNet Virtualized SBC can interconnect IP networks securely and seamlessly, with unmatched ease of use and low total cost of ownership (TCO) to help secure mission critical infrastructure and reduce the cost of delivering services.



The BorderNet Virtualized SBC is designed to operate in virtualized public and private cloud environments to address complex service delivery challenges involving security, network interoperability, media handling, and reliability encountered in today's demanding service provider and enterprise networks.

Features	Benefits
<b>Carrier Class in the Cloud SBC features</b>	<ul style="list-style-type: none"> <li>• High performance full featured software SBC with VMware hypervisor support</li> <li>• Virtualized High Availability (HA) mode</li> <li>• SBC security includes DoS protection, encryption, overload protection, and threat mitigation to protect "mission critical" infrastructure and services</li> </ul>
<b>Rapid deployment and low TCO</b>	<ul style="list-style-type: none"> <li>• Modern Web 2.0 UI with real time dashboard, alarming and analytics for fast and intuitive configuration and system management</li> <li>• Operational consistency with the BorderNet™ 4000 SBC and interoperable with the Dialogic® ControlSwitch™ System to help reduce OPEX</li> <li>• Flexible licensing options for cost effective scalability</li> <li>• Open Virtualization Format (OVF) compliant for fast deployment and implementation</li> </ul>

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## Examples of Applications

The BorderNet Virtualized SBC leverages virtualized computing environments to help make networks easier to connect. Example applications for the BorderNet Virtualized SBC include:

- Interconnecting IP Multimedia Subsystem (IMS), Voice over LTE (VoLTE), and IPX networks
- Interconnecting diverse SIP and H.323 mobile and fixed networks
- Detecting and reducing fraud
- IPv4 to IPv6 migration initiatives
- Managing multiple peering partners
- Traffic cost optimization and improved service quality
- Data center provider Infrastructure as a Service (IaaS) opportunities

## Carrier Class in the Cloud Features

### Feature Rich, High Performance Software SBC Solution

The BorderNet Virtualized SBC brings carrier class functionality to virtualized environments and can be deployed in a standalone or redundant (High Availability) configuration. Each instance of the BorderNet Virtualized SBC can support up to 8,000 simultaneous sessions at a rate of 30 sessions per second.

### Advanced Security Features

SBCs provide a first line of defense against fraud and malicious attacks in service provider networks. The BorderNet Virtualized SBC helps protect network integrity and service quality from being compromised by providing a set of layered security capabilities that include the following:

- Customizable signaling and media topology hiding
- Built-in firewall capabilities
- Dynamic access control lists
- Automated rate limiting to protect against DoS attacks and DDoS
- Real-time inspection of message syntax and semantics
- Protection against malformed messages
- Encryption, including TLS, IPsec, SRTP pass-through and HTTPS
- Message flood protection
- Dynamic Black Listing
- Media-related security, including pin-hole management, rogue RTP detection and bandwidth control
- Adaptive overload controls for the delivery of high priority and emergency traffic

### Real-time Dashboard, User Management and Reporting Capabilities

The BorderNet Virtualized SBC features WebUI technology that is also available with the BorderNet 4000 SBC. This WebUI provides a real-time view into the activities on the BorderNet Virtualized SBC in the form of an operator dashboard to monitor key aspects of the SBC. The configuration and provisioning tasks related to the Virtualized SBC are performed through the highly intuitive WebUI.

In addition to typical OAM&P functions, the WebUI also provides feature-rich analytics and reporting. The analytics available from the WebUI include traffic statistics, usage summary, and a comprehensive set of performance and traffic reports to help manage network and service activity. The BorderNet Virtualized SBC's WebUI includes a role-based user administration function to secure and control access to various system views involving configuration and provisioning of the SBC. Additional tools are included in the WebUI to make license management, data archiving, historical reporting, regulatory compliance and network troubleshooting easy and streamlined.

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## Powerful and Easy-to-Use Management, Interworking and Configuration Tools for Low TCO

Service providers need to securely connect their networks with other operators to deliver business and consumer services to their customers; however, not all SIP implementations are the same. Dialogic has developed the SIP Profiler for the BorderNet SBCs - including the Virtualized SBC - to help reduce the complexity of this process. The SIP Profiler is a powerful configuration tool that can help reduce the time and effort to implement interconnection in multi-vendor, multi-application environments across networks and enterprise end points with different SIP behaviors.

The SIP Profiler can be used to define behavior at the ingress and egress ports of the BorderNet Virtualized SBC and enable customized routing to help optimize and control SIP message flows. The SIP Profiler is accessed through the Virtualized SBC's WebUI, or through the use of XML scripts. Types of operations that can be performed using the SIP Profiler include:

- Add, modify or delete SIP headers, SIP bodies and SDP parameters and adaptively impact message sequence and flows
- Store information from header fields for later access
- Inspect SIP messages for specific content
- Use customized response codes when, for example, rejecting messages

A Media Profiler extends the core features of the powerful SIP Profiler framework to the SDP, media attributes, and the codecs used in the bearer plane. The Media Profiler provides the ability to:

- Control and reorder the offered codec list
- Control media attributes
- Manage and manipulate contents of ISUP, QSIG and other non-SDP message bodies

The BorderNet Virtualized SBC's WebUI can simplify operational tasks associated with configuring and maintaining the integrity of a peering and access environment. The profile-based provisioning capabilities through the BorderNet Virtualized SBC WebUI allow users to define common sets of service, security, VoIP parameter, and media attributes that describe the behavior of a connected endpoint through the use of templates. The template-based provisioning approach can significantly reduce the time needed to turn up service and also the system knowledge required to do so. These powerful configuration features can also help lessen TCO and accelerate service delivery by reducing the complexity traditionally involved in establishing interworking and access connectivity.

The BorderNet Virtualized SBC includes both IP level and session level tracing, media capture and recording. It also includes SOAP/XML and bulk loading of interface configurations along with a northbound API for integration with existing BSS/OSS applications. System software upgrades can be easily accomplished through the WebUI, with the ability to roll back to an earlier software release version if needed.

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## Technical Specifications

### Protocol Interworking

Signaling	SIP, SIP-I, SIP-T, H.323
Other	VLAN, IPv4, IPv6, UDP, TCP, RTP, RTCP
Network	IPv4, IPv6, overlapped IP networks

### Security Features

Access Control List  
Signaled pinhole media firewall  
Network topology hiding for both signaling and media  
Encryption support: TLS, IPsec, HTTPS, SSH, SRTP pass-through  
NAT traversal  
DoS and overload protection  
Rate limiting  
Dynamic black listing

### Media Security Features

Media profiling  
Rogue RTP detection  
Packet rate monitoring, and limiting  
Bandwidth determination and enforcement

### IMS, IPX and VoLTE

Interconnect Border Control Function (I-BCF)  
Transition Gateway (TrGW) (RFC 4117), e.g., with Dialogic® I-Gate® 4000 PRO Media Gateway  
Integrated Border Function (I-SBC)  
Interworking Function (IWF)  
– SIP and SIP-I/SIP-T Interworking

### Session Admission Control

License control  
Inbound, outbound and aggregate call control  
Session rate limit on per Peer and Interface level

### Routing

Signaling	Static Routing: Interface-Interface and Peer/Interface SIP Invite/3xx SIP redirect server routing Integration with other routing engines through SOAP and bulk routing Policy-based routing SIP Message-based routing Local DNS for URI to IP Address and Port mapping Routing resolution through external DNS (SRV, A, NAPTR) Load-balancing and priority-based routing RFC 4904 Trunk Group Routing support Emergency services call routing and call prioritization SIP URN routing Dynamic SIP REFER processing
Media	Optional Media Termination Separation of signaling and media over VLANs Media NAT traversal Media tromboning

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## QoS

QoS metrics	Packets lost, jitter inter-arrival, and latency
Policy enforcement	DSCP and ToS marking
Traffic statistics	Total packets and octets transferred

## Media Support

Audio	G.711, G.722, G.723.1, G.726, G.729a, G.729b, AMR-NB, AMR-WB, iLBC
Fax	G.711 fax, T.38
Tones	G.711 tones, SIP INFO, RFC 2833

## Scalability

### Base Configuration – per instance

Maximum Session Attempts Capacity	30 sessions per second (signaling and media)
Maximum Sessions	8,000 sessions
VLANs	128
IP Addresses	128 (signaling and media)
SIP Interfaces	64

## Management

Integrated web-based management (https) dashboard and analytics	
SNMP traps	
Historical and real time statistics and reports	
Business and engineering reports including report filtering and multi-format data export	
Session Detail Records	
Role based User Management	
Integrated Wireshark packet and session tracing	
Northbound API interface based on web technology (SOAP/XML)	
Bulk provisioning interface	
Dialogic® ControlSwitch™ System integration	<ul style="list-style-type: none"><li>• Integrated configuration and provisioning</li><li>• Integrated alarms and reporting</li><li>• Unified Call Detail Record (CDR)</li><li>• End-to-end session tracing</li><li>• EMS platform manages both BorderNet Virtualized SBC and ControlSwitch System</li></ul>

## Interfaces (Virtual)

Signaling and Media	Two (2) 1 Gigabit Ethernet Interfaces
Management	One (1) Gigabit Ethernet
High Availability	One (1) Gigabit Ethernet

## Hypervisor

VMWare vSphere 5.0 or higher

## Minimum Hardware Specification for Virtual Machines

### Base Configuration

Server CPU: 2.4 GHz x86 64-bit Processor, 300 GB storage	
Per instance – up to 2 instances	<ul style="list-style-type: none"><li>• Cores: 2</li><li>• 4GB RAM</li><li>• 80GB Storage</li><li>• Four (4) 1 Gigabit Ethernet Interfaces</li></ul>



[www.dialogic.com](http://www.dialogic.com)

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