The Dialogic® BorderNet™ 3000 Session Border Controller (SBC) is a compact, highly reliable security and session management platform for mobile and fixed VoIP networks. The flexible and standards-based BorderNet 3000 SBC supports both access and interconnect applications in a unique, fully redundant single Rack Unit (1RU) chassis.

By effectively protecting itself and the existing interconnect and access network infrastructure, the BorderNet 3000 SBC helps ensure that VoIP services are continuously available and that performance is unaffected by outside attack. Management is streamlined and operating overhead reduced because the 3000 SBC centralizes management operations in a single interface for policy-based routing and advanced call tracing as well as fault monitoring, configuration, accounting, performance, and security functions.

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>Carrier-ready interconnect (I-BCF) and access (P-CSCF) SBC with five-nines availability in a 1RU</td>
<td>Provides high reliability while reducing capital and operational costs through its small footprint and low power requirements</td>
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<tr>
<td>SIP header and parameter manipulation</td>
<td>Allows rapid addition of new service provider interconnects for streamlined service deployment</td>
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<tr>
<td>Integrated GUI-based local management</td>
<td>Simplifies management and lowers management expense</td>
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<tr>
<td>Integrated local and remote session tracing capability for one or more platforms simultaneously</td>
<td>Provides advanced troubleshooting while reducing capital costs since no special equipment or network configuration is required</td>
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<tr>
<td>RTP multiplexing between units</td>
<td>Reduces IP overhead and bandwidth consumption for VoIP sessions by up to 70% without sacrificing voice quality</td>
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</table>
Unique Redundancy in a Single Unit

The BorderNet 3000 SBC is unparalleled in the industry in providing a fully redundant, highly reliable session control and security platform for both access and interconnect applications in a single Rack Unit (1RU). Hitless failover and hitless software upgrades enable continuous operation with 99.999% (five-nines) availability.

The BorderNet 3000 SBC allows service providers to deploy session control and security solutions for small- and medium-sized sites with outstanding efficiency at a low cost. For larger sites, multiple 3000 SBC units can be managed easily from a single GUI-based management interface.

Built on a standalone Dialogic® platform that is field proven for high reliability, the BorderNet 3000 SBC offers the following functionality:

- IP session control
- IP session security
- SIP interworking
- Bandwidth optimization

IP Session Control

The BorderNet 3000 SBC ensures that adequate resources are always available for legitimate sessions under conditions of high load, attacks, and hardware and network failures. Delay-sensitive traffic, such as voice, receives prioritization dynamically on a call-by-call basis, and bandwidth is limited per call based on codec type. Granular media stream session control enables Service Level Agreement (SLA) requirements to be met for high customer satisfaction.

IP Session Security

The BorderNet 3000 SBC implements a comprehensive and systematic approach to security and service assurance. Every incoming IP packet is processed through a series of checks, classifications, and controls to allow only the processing of valid traffic flows according to SLAs, while malicious traffic is dynamically blocked.

The BorderNet 3000 SBC establishes a security perimeter around the NGN hat identifies and prevents attacks such as Denial-of-Service (DoS) or Distributed Denial-of-Service (DDoS) from wasting network resources and potentially halting services completely. Every SIP message is checked for both syntax and semantics while access control and topology hiding further enhance security on a per user or application level.

SIP Interworking

As SIP networks proliferate and new SIP-oriented business opportunities arise, service providers must be able to rapidly interwork with new SIP application platforms, carrier interconnects, and SIP endpoints. The “Profiler” function of the BorderNet 3000 SBC enables SIP header and parameter manipulation for both incoming and outgoing SIP messages on any 3000 SBC configured with a SIP interface.

The Profiler enables header changes to be made up to three times for each SIP message in each of these situations:

- When a SIP message is received on an interface (incoming)
- As a routing rule treatment for I-BCF routing policies
- Before a SIP message is about to leave from an interface (outgoing)
Any SIP header field may be manipulated, such as a header value, header parameter, and URI parameter. Because the Profiler is very flexible, rapid interworking is enabled between any type of SIP network.

**Bandwidth Optimization**

High bandwidth costs for international and long-distance remote links or leased lines increase operational costs for VoIP service delivery. A payload aggregation feature based on RTP multiplexing minimizes bandwidth requirements between BorderNet 3000 SBCs, reducing recurring operational costs. Payload aggregation also creates higher transmission efficiency by stacking multiple voice call streams in each packet, allowing shared overhead that has almost no impact on end-to-end delay. Because payload aggregation is router-agnostic, any router can handle RTP multiplexed IP packets without special configuration or provisioning.

Figure 1 provides an example of how BorderNet 3000 SBCs can be used in a service provider network.

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*Figure 1. Dialogic® BorderNet™ 3000 Session Border Controllers in a Service Provider Network*
**Technical Specifications**

**SIP Protocols**
- SIP Proxy operational mode
- RFC3261 Session Initiation Protocol
- RFC3262 Reliability of Provisional Responses in SIP
- RFC3264 An Offer/Answer Method with SDP
- RFC2976 SIP INFO Method
- RFC2327 Session Description Protocol (SDP)
- RFC2112 Multipart MIME
- RFC2617 HTTP Digest Access Authentication
- RFC3311 Update
- RFC3326 Reason
- RFC4244 Diversion
- RFC3323 Privacy
- RFC3324 Privacy
- RFC3325 Privacy
- RFC3725 3pcc
- RFC3966 tel URI
- RFC4694 Number Portability
- RFC3515 Refer
- RFC4028 Session Timer
- RFC2046 Mime handling
- RFC3455 P-Headers

**Other Protocols**
- IPv4
- RFC768 User Datagram Protocol (UDP)
- RFC1889 Real-time Transport Protocol
- RFC1890 RTP Profile for Audio and Video Conferences

**Security**
- Access control: Signaled pinhole firewall for media
- Network topology hiding via double NAPT for both media flows (Layer 3) and signaling messages (Layer 5)
- Network-based NAT traversal
- DoS and overload protection for service infrastructure: Rate limiting of signaling messages and media flows
- White/black/gray IP address lists
### Technical Specifications (continued)

**Session Admission Control**
Based upon maximum number of calls configured per public interface

**VLAN Bridging**
802.1q (VLAN)
Up to 16 configurable VLANs

**Bandwidth Policing**
Intelligent dynamic rate limiting per media flow
Media flow rate limiting for authorized sessions based upon the “b” session descriptor

**Law Enforcement**
Media forking for lawful intercept requirements such as CALEA

**SIP Routing**
SIP message routing
Interface-to-interface routing
Enhanced routing based on SIP headers (Contact, From, To), time-based conditions, transport addresses
Load balancing and priority-based rerouting
Routing decision-based keep-alive to remote peers

**Media Routing**
Disable or enable media routing through Dialogic® BorderNet™ 3000 Session Border Controller (SBC)
Separate VLANs supported for signaling and media
Media NAT traversal

**Accounting**
FTP text-based CDR: Creates text files with comma-separated CDR and transfer them to external FTP servers
CDR session attributes: Includes general session attributes and signaling and media session information

**QoS Reporting**
QoS statistics: Delay, jitter, and packet loss
Traffic statistics: Total packets and octets transferred
Used for SLA reporting via RADIUS CDR, problem alerting and isolation via SNMP
Dialogic® BorderNet™ 3000 Session Border Controller
Easy-to-Manage Robust Security and Session Control for VoIP Networks

Technical Specifications (continued)

Performance and Capacity
- 2 Gbps chassis throughput
- Signaling latency 1-5 msec
- Media latency 2 msec
- Maximum INVITE sessions = 8,000 (licensed sessions)
- Maximum SUBSCRIBE sessions = 24,000
- Maximum SBC sessions = 32,000 (INVITE + SUBSCRIBE)
- Maximum registered users (private and public): 50,000

Configuration
- Integrated browser-based GUI (HTTP)
- xMS centralized management system (optional)

Management
- SNMP v2.0 (get/set/trap commands)
- Northbound interface to xMS centralized management system
- Traffic Reports: Backup to xMS database
- Configuration Parameters: Can be uploaded to xMS disk
- Various Utilities (Audit logs): SBC local disk backup via xMS

Power Specifications
- Power supplies: Redundant power supplies (active/standby) and power feeds
- AC power option:
  - Nominal Voltage Input: 100/240 VAC
  - Maximum and Minimum Voltage Input: 90/254 VAC
  - Maximum Power Consumption: 95 Watts
  - Frequency: 50/60 Hz
  - Current: 1.5 amps maximum
- DC power option:
  - Nominal Voltage Input: -48/-60 VDC
  - Maximum and Minimum Voltage Input: -40.5/-72 VDC
  - Maximum Power Consumption: 73 Watts
  - Current: 2.7 amps maximum
## Physical Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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</table>
| Dimensions             | 1.75 in. H x 17.13 in. W x 13.78 in. D  
                          | 44.45 mm H x 435 mm W x 350 mm D |
| Weight                 | 8.8 lbs                          
                          | 3.98 kg                          |
| Cabinet                | 19 or 23 in.                     |
| Network Interfaces     | Media/Signaling:                 |
|                        | 2 Gigabit Ethernet (copper) — active |
|                        | 4 Gigabit Ethernet total — HA    |
|                        | IEEE 802.3u                      |
|                        | Full Duplex                      |
|                        | Management: 1 x 100Base-T        |

## Approvals, Compliance, and Warranty

- **Hazardous substances**: RoHS compliance information at [www.dialogic.com/rohs](http://www.dialogic.com/rohs)
- **Country-specific approvals**: Contact your local Dialogic sales representative
- **Warranty**: Contact your local Dialogic sales representative