Dialogic’s BorderNet™ Diameter Services Helix is a high performance, highly scalable and versatile next generation Diameter Signaling Controller, enabling seamless management and delivery of services across 3G, 4G mobile and fixed networks.

The BorderNet Helix seamlessly combines multiprotocol Interworking Functionality (IWF), Diameter Edge Agent (DEA) and Diameter Routing Agent (DRA) features in an integrated, easy-to-use platform for rapid service innovation and orchestration. Helix can reduce the time to bring new services to market via the innovative web GUI; this gives exceptional flexibility for the rapid creation and validation of services across multi-vendor environments, independent of network technologies or protocols (3G, 4G/LTE, IMS/VoLTE, Fixed and Wi-Fi networks).

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated Solution for Diameter Routing Agent, Diameter Edge Agent and Diameter Interworking Function capabilities</td>
<td>Provides centralized management, security, load balancing and multi-protocol, multi-domain interworking and orchestration for faster network and service deployment.</td>
</tr>
<tr>
<td>Protocol interworking and service design via integrated Web 2.0 GUI</td>
<td>Provides the ability to apply advanced logic to protocol message flows. Diameter and non-Diameter applications can be intelligently routed based on protocol, message parameter, or message context, resulting in rapid development of new services for fast time to market.</td>
</tr>
<tr>
<td>Multi-protocol support with extensibility to add additional Diameter applications, protocols and variants</td>
<td>Removes the need for expensive and time consuming development projects to support new protocol variants or complex interworking use cases.</td>
</tr>
<tr>
<td>Dashboard and extensive reporting capabilities</td>
<td>Enables detailed recording of protocol events, configuration auditing, logging and tracing.</td>
</tr>
</tbody>
</table>
Powerful Service Creation

Helix gives users access to a rich set of functions such as intelligent routing, load balancing, interworking, protocol conversion and mediation. These functions can be combined and applied to both Diameter and non-Diameter applications and provide for easy extensibility to other protocols and protocol variants through user modifiable, template driven configuration capabilities.

Versatility for Service Enabling Applications

Service Providers can deploy Helix, due to its versatility, to handle a variety of mission critical network functions including; highly granular and dynamic Diameter routing, AVP mediation and manipulation between diverse Diameter based nodes, admission and congestion control, network topology hiding, load balancing and PCRF binding.

The flexible Interworking Function capabilities of Helix facilitate key use cases such as;

- Diameter-to-MAP interworking to support 3G – 4G roaming as per specification 3GPP TS 29.305.
- Diameter-to-RADIUS interworking to facilitate seamless Wi-Fi offload for mobile subscribers.
- Diameter-to-IT protocol (such as LDAP, HTTP or SOAP) interworking to support tasks such as subscriber database queries during dynamic service flows.

![Diagram of BorderNet™ Diameter Services Helix](image-url)
BorderNet™ Diameter Services Helix

Datasheet

Technical Specifications

Networking
IPv4, IPv6

Transport Protocol
TCP, UDP, SCTP, SIGTRAN, TLS/TCP

Diameter base conformance
RFC6733, RFC 3588

IETF Diameter agent support
Relay, proxy, translation

3GPP Diameter agent support
DRA, IWF

GSMA Diameter agent support
DEA

Protocol Support
Diameter, RADIUS, SS7, HTTP, SOAP, REST, XML, LDAP

Diameter Reference Interfaces
Template-based support enables user implementation of Diameter interfaces including proprietary AVPs

Preconfigured templates
Diameter: Cx, Dx, Gx, Gy, Gz, Ro, Rx, S13/S13’, S6a/S6d, S9, Sh, Sy, Wx
SS7: Gr, Gf

Management
 CLI, GUI, SNMP, XML, CSV, Dashboard

On-board Functions
Interworking, any-to-any protocol conversion, mediation, aggregation, intelligent routing, enrichment, shaping, configurable service logic

Form factor
1U Rack Mount Server

SS7 T1/E1 interface boards
Up to two (2) boards per unit; either one or two Dialogic® DSI SS7LDH4 Network Interface Boards or one or two Dialogic® DSI SS7MDL4 Network Interface Boards can be used

<table>
<thead>
<tr>
<th>SS7LD</th>
<th>SS7MD</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1/E1 ports per board</td>
<td>4 T1 or 4 E1</td>
</tr>
<tr>
<td>SS7 Low Speed Links per board</td>
<td>Up to 16</td>
</tr>
<tr>
<td>SS7 High Speed Links (G.703 Annex A) per board.</td>
<td>N/A</td>
</tr>
<tr>
<td>ATM High Speed Links per board.</td>
<td>N/A</td>
</tr>
<tr>
<td>Maximum SS7 links per unit</td>
<td>248</td>
</tr>
<tr>
<td>Maximum SS7 link sets per unit</td>
<td>120</td>
</tr>
<tr>
<td>Maximum M2PA links per unit</td>
<td>256</td>
</tr>
<tr>
<td>Maximum number of SS7 routes</td>
<td>4,096</td>
</tr>
<tr>
<td>Number of separate network contexts</td>
<td>4</td>
</tr>
<tr>
<td>Maximum number of SIGTRAN associations</td>
<td>256</td>
</tr>
<tr>
<td>10/100/1000Mbit/sec Ethernet interfaces</td>
<td>8</td>
</tr>
<tr>
<td>Power</td>
<td>AC or DC</td>
</tr>
</tbody>
</table>

T1/E1 Interfaces

Pulse mask
T1: ANSI T1.403
E1: ITU-T G.703

Data rate
T1: 1544 kbps ± 50 ppm
E1: 2048 kbps ± 50 ppm

Frame format
T1: D4, ESF, and ESF-CRC6
E1: E1 and E1-CRC4

Line codes
HDB3, AMI, B8ZS

Connector type
RJ-48C
Power

DC-powered products

Supply voltage (range nominal) –40 VDC to –60 VDC
Input power (fully equipped) 200 W

AC-powered products

Input voltage 100 VAC to 240 VAC
Input power (fully equipped) 200 W
Frequency range 50 Hz - 60 Hz

Physical Dimensions

Height 1.74 in. (4.4 cm)
Width 16.93 in. (43.0 cm)
Depth 20.4 in. (51.9 cm)
Weight – fully equipped 26.8 lbs (12.16 kg)

Environmental

Operating temperature +50°F (+10°C) to +104°F (+40°C)
Storage temperature –40°F (-40°C) to +158°F (+70°C)

Hazardous substances RoHS compliance information at http://www.dialogic.com/rohs
Country-specific approval information Refer to global product approvals database at http://www.dialogic.com/declarations
Warranty Warranty information at http://www.dialogic.com/warranties
Service plans See Dialogic® Pro™ Services information at http://www.dialogic.com/products/services

For More Information

For more information about the product discussed in this datasheet, contact your local Dialogic representative. Worldwide contact information can be found online at www.dialogic.com/contact.