## SIP Services: Network Edge Constraints

<table>
<thead>
<tr>
<th>Constraint</th>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firewalls / NAT Traversal</td>
<td>Many enterprise firewalls are not capable of handling SIP traffic</td>
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<tr>
<td>SIP Interoperability</td>
<td>Many SIP-based services and SIP-based customer premise equipment are not interoperable out of the box</td>
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<td>SIP Security</td>
<td>SIP services have security vulnerabilities such as denial of service attacks, SPIT and toll fraud</td>
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<tr>
<td>Legacy Integration</td>
<td>Many existing PBX systems are not SIP capable, or require substantial upgrades to support SIP</td>
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<tr>
<td>Demarcation</td>
<td>Many SIP services need a demarcation point or boundary between the service provider and the enterprise premise</td>
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</tbody>
</table>
Dialogic® BorderNet™ 500
Any-to-Any Connectivity at the Enterprise Network Edge

- IP Network
- PSTN
- SIP Trunk
- TDM Trunk
- Corporate LAN
- IP-PBX
- Legacy PBX with system phones

Dialogic® BorderNet™ 500
January 2010: Ingate + Dialogic Press Release

Providing “any-to-any” PBX connectivity for SIP trunking, Dialogic Corporation, announcing today that the company will incorporate the award-winning **SIP Trunking software module from Ingate® Systems** into a new enterprise border element designed to connect virtually any SIP trunk with virtually any PBX.

- NAT traversal
- SIP security
- ITSP interoperability
- IP-PBX interoperability

= Any to Any Connectivity for SIP Services
Dialogic® BorderNet™ 500:
Ingate Siparator Software Module Functions

- **Security**
- **Encryption**
- **Termination / Transcoding**
- **Authentication**
- **SIP Filtering**
- **Near-End Traversal**
- **Far-End NAT Traversal and STUN**
- **Firewall & NAT**
- **SIP Proxy, ALG, B2BUA, Registrar**
- **Flexible Control**
- **Quality of Service, Traffic Management**

**SIP Trunking Tool Set**

**Far-End NAT Traversal and STUN**

SIP-ALG-only Firewalls can only do this much
Dialogic® BorderNet™ 500
Interoperability (building on Ingate interoperability)

### Service Providers
- 360 Networks
- Airespring
- AT&T
- BandTel
- Bandwidth.com
- Broadvox
- Cbeyond
- Cellip
- Cordia Corporation
- Gamma
- Global Crossing
- IP-Only
- Juma Networks
- Level 3

### Carrier Equipment
- Acme Packet
- Broadsoft
- NexPoint
- Sonus
- Sylantro
- Netlogic
- Nexvortex
- Nuvox
- O1
- Paetec
- Primus
- RNK Telecom
- TDC
- Tele2
- Toplink
- VoEX
- VoIP Unlimited
- Voxbone
  *More in pipeline.....*

### SIP Trunks
- 3Com
- Aastra
- Digium / Asterisk
- Avaya
- Cisco Call Manager
- Ericsson MX-One
- Fonality
- Innovaphone
- Interactive Intelligence
- Iwatsu
- Rolm
- Tenovis
- Toshiba
- Iwatsu
- Intertel
- Panasonic
- DeTeWe
- Samsung
- More in pipeline.....

### PSTN
- Basic Rate ISDN (BRI)
- Primary Rate ISDN (PRI) T1 / E1
- T1/E1 Robbed Bit / CAS
- If it supports a T1 or E1 trunk port today, chances are good we can emulate the PSTN for it...
Dialogic® BorderNet™ 500:
Legacy TDM PBX Connectivity

- IP Network
  - Broadband Internet Access
  - SIP Trunking Service
- PSTN
  - Service Provider Gateway
  - PRI, BRI Analog
- DMZ & Demarcation
  - Firewall
  - SIP Trunks
- Corporate Data LAN
  - Dialogic BorderNet™ 500
  - PRI, BRI Emulation
- Legacy PBX with system phones

- IP Telephony Service Provider

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Dialogic® BorderNet™ 500: Hybrid PBX Connectivity (non-SIP Trunk Ready)

- IP Network
- PSTN
- Broadband Internet Access
- SIP Trunking Service
- Service Provider Gateway
- PRI, BRI Analog
- DMZ & Demarcation
- Firewall
- SIP Trunks
- PRI, BRI Emulation
- Corporate Voice and Data LAN
- Hybrid PBX with system phones and IP Phones
- IP Telephony Service Provider

SLIDE 8
Dialogic® BorderNet™ 500
IP-PBX Connectivity

IP Network

IP Telephony Service Provider

PSTN

Service Provider Gateway

PRI, BRI, Analog

Broadband Internet Access

SIP Trunking Service

DMZ & Demarcation

Firewall

SIP Trunks

Corporate Voice and Data LAN

SIP

Dialogic BorderNet™ 500

IP-PBX
Dialogic® BorderNet™ 500: Preliminary Specifications

– Broad Product Line and Scalability
  • 8 port, 16 channel - BRI to SIP
  • 24/30 channel - T1/E1 to SIP
  • 48/60 channels - Dual T1/E1 to SIP
  • 96/120 channels - Quad T1/E1 to SIP

– Complete Support for SIP Trunking Services
  • SIP Proxy, SIP Registrar
  • SIP Interoperability
  • SIP Connection set up (SIP + RTP)

– Complete PBX, PSTN, IP and Fax Protocol Support
  • Analog FXO, PRI, BRI, ISDN, CAS, Q.SIG protocols
  • SIP (RFC32XX), Microsoft SIP (TCP Transport), Microsoft Secure SIP: TLS
  • T.30 (PSTN) Fax to T.38 (FoIP)
    – Exclusive V.34 Fax / FoIP speed

– Value Added Software Options
  • Remote SIP Connectivity (Far-end NAT-passering incl STUN-server)
  • QoS (bandwidth limitation and prioritization)
  • Enhanced Security (IDS/IPS for SIP, SRTP and TLS)
  • VoIP Survival (VoIP redundancy if Internet connection fails)
  • SIP Registrar (SiParator software is used as the primary SIP registrar)

– Flexible, Cost Effective Support for Analog Devices
  • Support for ATAs & FXS Gateways from Grandstream & Cisco
    – Easy to deploy - 1, 2, 4, 8, 24 port solutions
    – Low cost per port
  • Interface for any number of Analog Devices
    – Conference Phones, Fax Machines, POTs, elevator phones, loading docks, checkout registers, paging systems, etc.

The right mix of features and densities for success with SIP Services