



SIP Trunking – The Service Provider Perspective –The BandTel View

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Overview

- The BandTel Story
 - Where BandTel fits in the SIP trunking service provider environment
 - The “secret” to our success (despite the presence of our colleagues and competitors!)
 - Our service model
- The significance of security measures in a SIP trunk environment
- Attention to details = Superior value for BandTel distributors and their respective customers



About BandTel

- Privately held and based in Newport Beach, CA, BandTel is an innovator and leading worldwide provider of SIP Trunking services.
- BandTel's N-Plus™ SIP-based network architecture operates with superior bandwidth utilization and scalability, and has been designed to eliminate single points of failure.
 - Other SIP network architectures may function within a discrete realm of coverage. The BandTel approach is entirely distributed.
- Currently servicing Call Centers, Telco and Enterprise customers and IVR providers worldwide, BandTel focuses on enabling distributors and VARS.
- Strong partnerships with leading carriers including Global Crossing, XO Communications, Level 3, Qwest Communications, Verizon Business, Primus, and others.

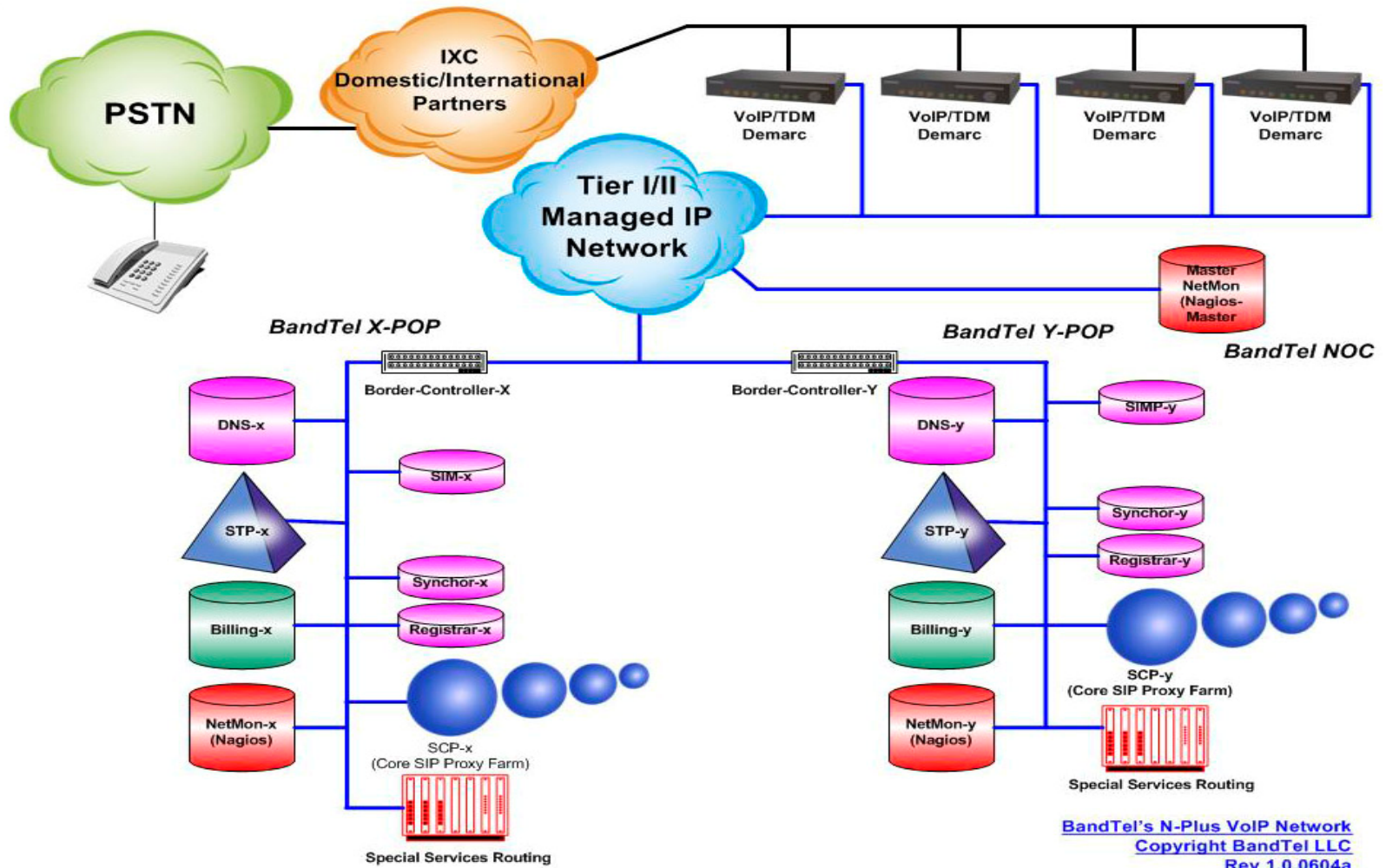


The BandTel Difference

- N-Plus architecture for performance, scalability, reliability
 - Patent pending technologies developed for core network
 - Handles very high volume of simultaneous SIP sessions
- Proven applications and CPE device interoperability
 - Customers can leverage a wide choice for IP-PBX, conferencing, call center, and IVR applications
- Large, worldwide network footprint
 - Redundant connections to many IXCs and carrier backbones with ability to offer DIDs worldwide
- Ease of Operations
 - Customer and VAR portals to add/change/delete services and view real-time network use and billing data
 - Excellent customer support



BandTel N-Plus™ Network Diagram



[BandTel's N-Plus VoIP Network](#)
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Business Opportunity is Primed

- IP-PBX Market on track to exceed \$10 billion (Synergy Research)
- By 2008, 55% of all Enterprise Communications Systems will be IP-enabled which means the majority of PBXs will be SIP-compatible/ready (Frost and Sullivan)
- VoIP Service Providers gaining enormous traction in marketplace





SIP Supports Legacy Solutions

- Offers a migration path to “pure” VoIP while retaining investment in legacy equipment
- Provides additional services to legacy voice infrastructure of SIP
 - Reduced transport costs
 - Enhanced services like unified communications
 - Real-time access to billing and usage reports



Some SIP Trunking Applications

- Local, Inbound DID, 800, 1+, and 011+, enterprise dialing
- Inbound load balancing options across multiple locations
- Hairpin, transfer and leave, transfer and stay in call
- Re-invite support across multiple locations
- Local Number Porting Management
- G.711, G.729a and T.38 codecs
- Enhanced 911 service access
- Operator assisted dialing
- Directory Assistance
- Disaster recovery



SIP Trunking Benefits

- **Interoperability.** Ubiquitous method to initiate, manage, and terminate IP communications sessions
- **Applications.** Supports real multimedia applications of voice, data, video, instant messaging and fixed mobile convergence
- **Availability.** Adds presence and mobility to today's stationary applications
- **Cost-effective.** Minimizes origination/termination services to the PSTN for external long-distance and local access calls
- **Consolidation.** Shared use of Enterprise IP bandwidth optimizes IT investment



Enterprise-Specific VoIP Concerns

- Voice and video call confidentiality
- Enterprise-wide system compromise
- Traversal of firewalls and network edge protection
- The Skype challenge
- SPIT and VOMIT
 - SPIT attack, Columbia University, July 2007, Access to the SIP Proxy
 - All available extensions were called with a prerecorded message sent upon answering
 - http://www.voipuser.org/forum_topic_10383.html
 - NEC VoIP SEAL (<http://www.nec-cebit.com/en/press/latest/latestnews.html?func=full&id=63>)



SIP Security Challenges

- The network perimeter must be correctly designed for VoIP
 - **Network perimeter protection.** SIP-aware firewall highly recommended
 - **SIP Signaling Redundancy and survivability.** ITSP should split media and signaling to different redundant locations
 - **Internet Security.** ITSP must have secure POPs that can fend off all outside attacks, including source-route bridging spoofing detection



Summary

- The BandTel difference
 - N-Plus architecture for performance, scalability, reliability
 - Proven application and device interoperability
 - Large, worldwide network footprint
 - Easy to work with
- SIP trunking benefits
 - Cost savings
 - Flexibility
 - Scalability