

Integrated Media Gateway 1010
Enabling SS7 on an
H.323-Based VoIP Network

Chris Lengyel

Market Development Manager



cantata
TECHNOLOGY

table of contents

| | |
|--|----------|
| VoIP Network Issues | 3 |
| VoIP Networks Change Quickly | 3 |
| Class 4/5 Switches are Only Partial Solutions | 3 |
| SS7 Signalling Servers are Only Partial Solutions | 4 |
| <hr/> | |
| Benefits of the IMG 1010 Media Gateway | 4 |
| The IMG 1010 Evolves as Your Network Evolves | 4 |
| The IMG 1010 Streamlines Networks and Reduces Up-Front Costs | 5 |
| <hr/> | |
| Detailed Benefits of the IMG 1010 | 6 |

VoIP network issues

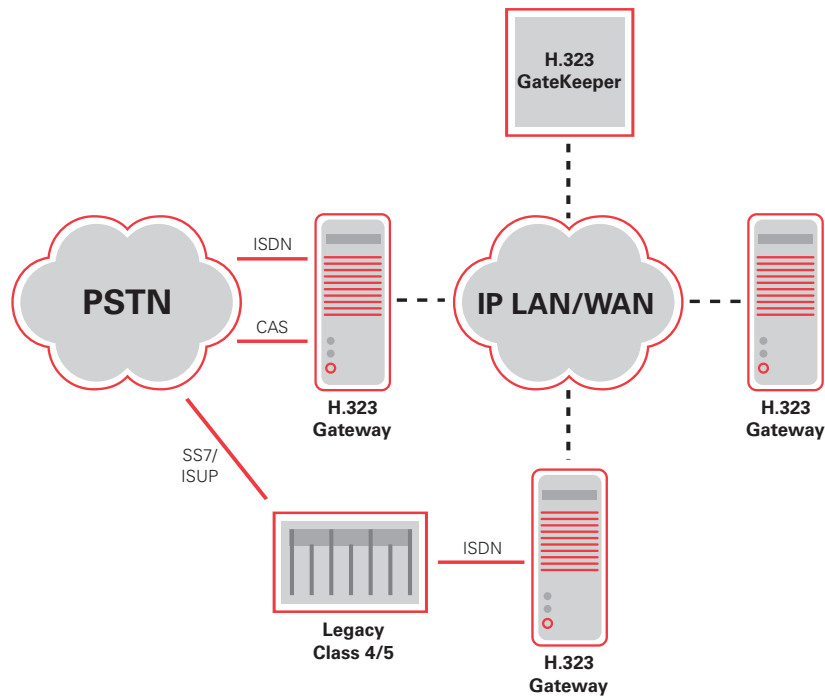
VoIP networks change quickly

As VoIP networks are deployed around the globe, they are quickly changing and evolving. Service providers and OEMs need VoIP media gateways that evolve as quickly as network requirements do, but VoIP gateway solutions have until now been cumbersome to deploy and upgrade.

class 4/5 switches are only partial solutions

First generation VoIP media gateways typically employ H.323 as the VoIP interface, and ISDN PRI/CAS as the TDM interface. These H.323-to-ISDN PRI/CAS interfaces are ubiquitous in the PBX and small telephony switch space, and they are perfect for enterprise and small scale wholesale deployments. However, larger Tier 1 service providers and incumbents may offer only SS7 connectivity. So a VoIP service provider interfacing to one of these large SS7-only Tier 1 carriers would traditionally install a legacy Class 4/5 switch as depicted in Figure 1.

Figure 1

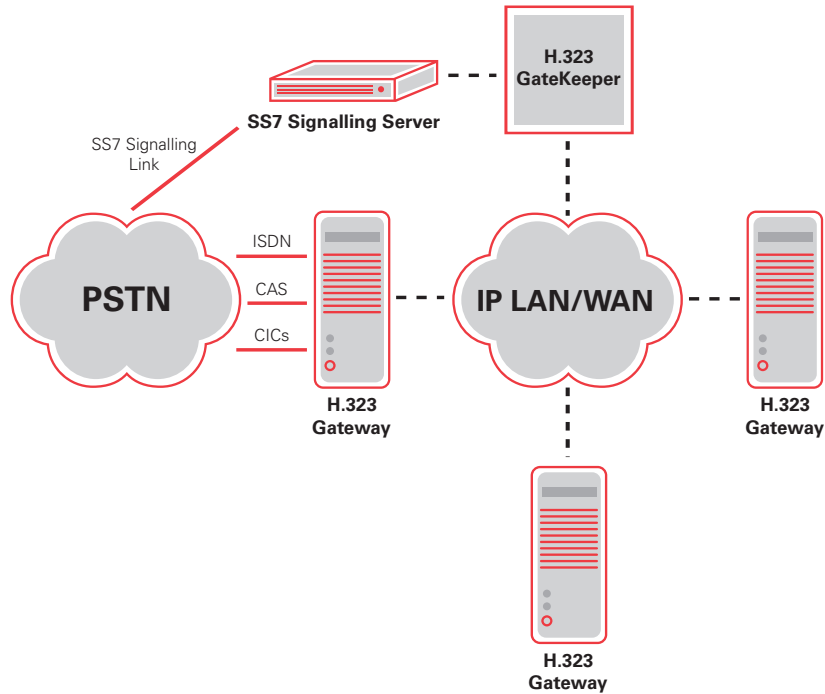


In the architecture depicted in Figure 1, the legacy Class 4/5 switch functions simply as a protocol converter, translating SS7 ISUP protocol into ISDN PRI protocol, which the VoIP media gateway can accept. But several important issues arise from this network architecture. Billing is one issue, because routing decisions can be made in two separate places—the Class 4/5 switch and the H.323 Gatekeeper. Resource management is another issue, because the H.323 Gatekeeper cannot know the status of the egress ports on the Class 4/5 switch. Yet another issue is that two distinctly different platforms require technicians with two distinct skill sets.

SS7 signalling servers are only partial solutions

The SS7 Signalling Server was introduced to address these issues of differing routing tables and resource management, as shown in Figure 2.

Figure 2



The SS7 Signalling Server presents another potential advantage—if the network elements all come from the same manufacturer, deployment and operations are simplified. But an SS7 Signalling Server also has disadvantages—it introduces multiple points of failure and increases the complexity of troubleshooting. And an SS7 Signalling Server costs more up front, because it's one more discrete component to purchase.

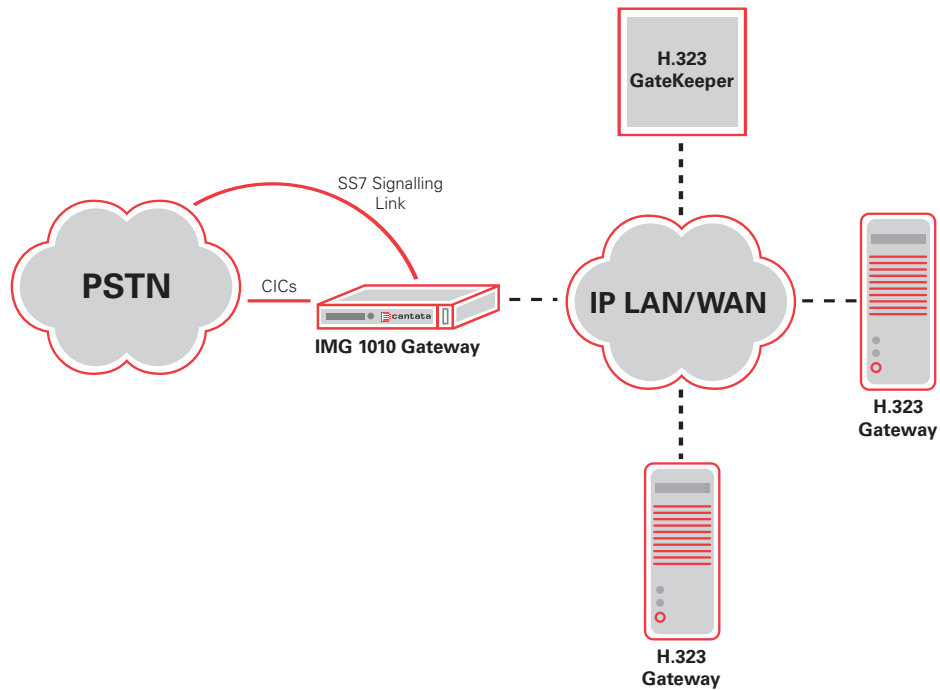
benefits of the IMG 1010 media gateway

the IMG 1010 evolves as your network evolves

Cantata addresses all these issues with the Integrated Media Gateway (IMG) 1010. Cantata supports the “pay as you grow” philosophy which significantly lowers the high initial costs of an SS7 deployment. The IMG 1010 not only grows, but evolves as Service Provider and OEM network requirements evolve, combining open and programmable signalling with:

- High port density
- Integrated routing functionality
- Cost effective, purpose-built gateway hardware
- Programmable protocol language that allows customization of TDM variants

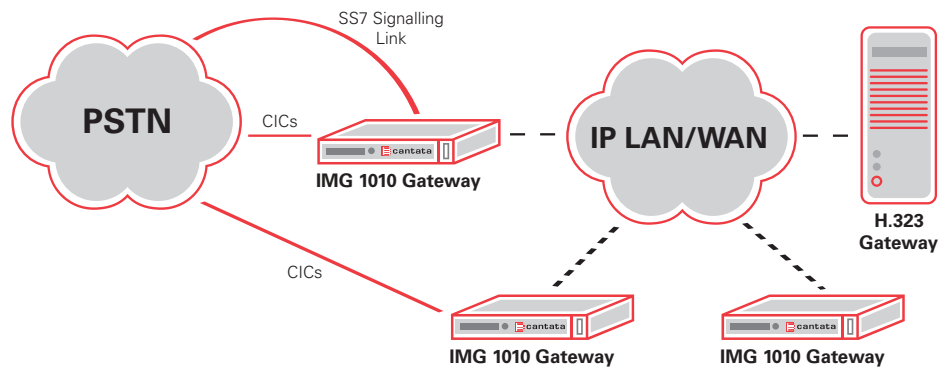
Figure 3



the IMG 1010 streamlines networks and reduces up-front costs

The IMG 1010 integrates SS7 signalling, VoIP, and routing into a single 1u chassis, replacing three network elements: the SS7 Signalling Server, the Trunking Gateway, and the Gatekeeper. The IMG 1010 combines the SS7 Signalling Server and Trunking Gateway functionality in one intelligent gateway, and with Cantata's built-in routing technology, a separate VoIP Gatekeeper becomes optional. Each IMG 1010 supports 20 route tables with 10,000 entries each. Each IMG 1010 can control SS7 voice circuits (CICs) on 31 other IMGs. Cantata's GateControl Element Management System (EMS) can manage a network of up to 250 individual gateways.

Figure 4



detailed benefits of the IMG 1010

The IMG 1010 Phase 1 is a stand-alone, turnkey VoIP Gateway with the following benefits:

- Signalling and bearer capabilities, integrated in the same 1u chassis:
 - SS7 ISUP (ANSI, ITU, and ETSI base variants)
 - H.323 v2
- H.246 ISUP to H.323 interworking
- Deployable around the world, with access to over 120 SS7 country-specific variants
- Flexibility, with ability to perform TDM and IP hairpins
- High Density
 - Industry leading densities of 28 T1s or 21 E1s in a 1u box
 - Ability to control 32 DS3s of CICs from one gateway
 - 384 sessions of transcoding natively supported
- 752 VoIP resources any codec (G.711, G.723, G.726, and G.729)
- T.38 fax support
- GUI-driven Element Management System based on Redhat Linux



cantata
TECHNOLOGY

Corporate Headquarters

410 First Avenue
Needham, MA 02494
USA

Tel: +1 (781) 449-4100

Fax: +1 (781) 449-9009

Email: info@cantata.com

Cantata Technology maintains multiple locations worldwide in North America, Asia and Europe.

www.cantata.com