



## DATA SHEET

# CISCO ENHANCED CONFERENCING AND TRANSCODING FOR VOICE GATEWAY ROUTERS

**Cisco® Enhanced Conferencing and Transcoding for Voice Gateway Routers provides conferencing and transcoding capabilities in Cisco IOS® Software-based gateways using the onboard Cisco Packet Voice/Fax Digital Signal Processor Modules on the Cisco 2800 and 3800 series voice gateway routers. This capability is also supported on Cisco voice gateway router platforms using the Cisco IP Communications Voice/Fax Network Module and the Cisco IP Communications High-Density Digital Voice/Fax Network Module. This feature is delivered in Cisco IOS Software and operates in conjunction with Cisco CallManager.**

The Cisco Enhanced Conferencing and Transcoding for Voice Gateway Routers feature provides enhanced multiservice support for Cisco routers in a Cisco CallManager network. This is accomplished by enabling audioconferencing and transcoding functions in access routers. This single-package solution simplifies deployment, eases administration, and helps deliver tangible cost savings by locating conference resources in the branch to reduce WAN utilization. This feature further minimizes costs by using transcoding services to reduce bandwidth needs.

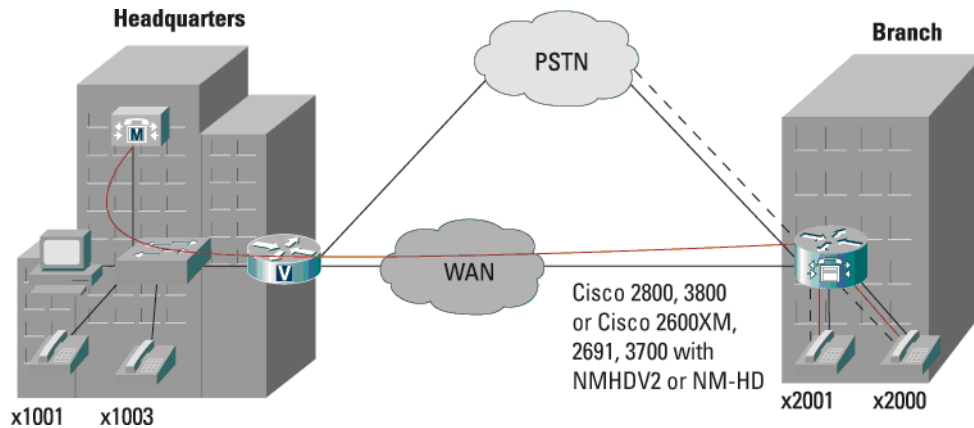
An integral part of Cisco AVVID (Architecture for Voice, Video and Integrated Data), Cisco Systems® IP telephony offers feature-rich telephony services on a fully converged IP network. Using Cisco 2800 and 3800 series onboard digital signal processor (DSP) capability and also available on the Cisco IP Communications Voice/Fax Network Module (NM-HD) and the Cisco IP Communications High-Density Digital Voice/Fax Network Module (NM-HDV2), the Cisco Enhanced Conferencing and Transcoding for Voice Gateway Routers feature preserves all the WAN, public switched telephone network (PSTN), and private branch exchange (PBX) access capabilities while adding conferencing and transcoding functions. The feature, integrated with Cisco CallManager, also provides Cisco CallManager failover, reporting, and management.

## AUDIOCONFERENCING SERVICES

In a traditional circuit-switched voice network, all voice traffic goes through a central device (such as a PBX system), which provides audioconferencing services as well. Because IP phones transmit voice traffic directly between phones, a network-based conference bridge is required to facilitate multiparty conferences. In an IP telephony network using Cisco CallManager, the Cisco Enhanced Conferencing and Transcoding for Voice Gateway Routers feature provides the conference bridging service. This feature also supports these services:

- Cisco CallManager Meet-Me and ad-hoc conferences with up to eight participants
- Substantial scalability in the number of conferences supported based on the number of Cisco Packet Voice DSP Fax/Voice Modules (PVDM2s) employed
- G.711 a/u-law, G.729, G.729a, G.729b, G.729ab, GSM FR, GSM EFR participants joined in a single conference
- Easy deployment of conference resources in routers across the network; this provides a local conference resource, reduces WAN utilization, and improves voice network performance

**Figure 1.** Conferencing



**TRANSCODING SERVICES**

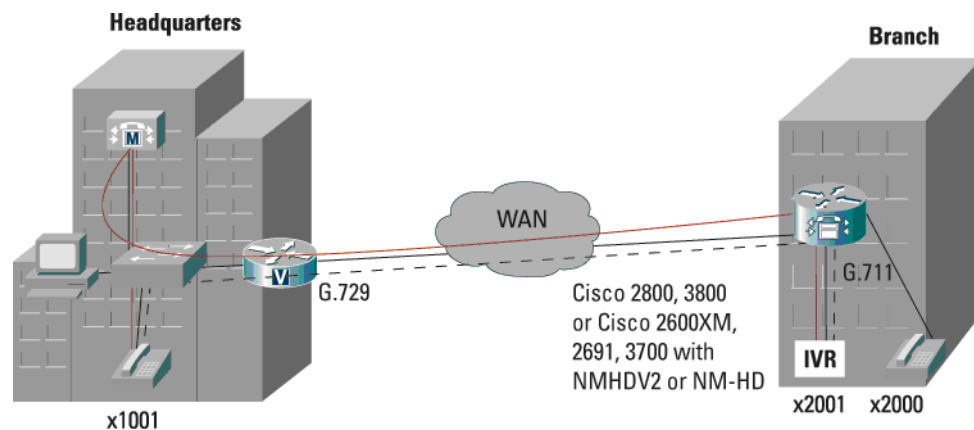
Transcoding enables two important functions in an IP telephony network. The first is to save on WAN utilization and attendant costs. This is accomplished by compressing voice traffic across the WAN. The second is to enable communication between different devices that support different codecs. Table 1 indicates which transcoding algorithms the Cisco Conferencing and Transcoding for Voice Gateway Routers feature supports.

**Table 1.** Transcoding Algorithms Supported

From codec	To codec
G.729, G.729a, G.729b, G.729ab, GSM FR, GSM EFR	G.711 a/u-law
G.711 a/u-law	G.729, G.729a, G.729b, G.729ab, GSM FR, GSM EFR

- Substantial scalability in the number of transcoding sessions supported based on the number of Cisco PVDM2s employed
- Packet sizes of 10, 20, and 30 milliseconds (ms) are supported for G.711. Packet sizes of 10, 20, 30, 40, 50, and 60 ms are supported for G.729, G.729a, G.729b, and G.729ab. A 20-ms packet size is supported for GSM FR and GSM EFR

**Figure 2.** Transcoding



## PLATFORM SUPPORT AND SOFTWARE REQUIREMENTS

Cisco Enhanced Conferencing and Transcoding for Voice Gateway Routers provides the following platform support and requires the following software:

- Support is provided onboard on the Cisco 2800 and 3800 series voice gateway routers. This feature is also supported on platforms using the Cisco IP Communications Voice/Fax Network Module and the Cisco IP Communications High-Density Digital Voice/Fax Network Module.
- Scalable performance using the Cisco PVDM2.
- Cisco IOS Software Release 12.3(8)T4 with the IP Voice feature set is required for the Cisco 2800 Series voice gateway routers. Cisco IOS Software Release 12.3(11)T with IP Voice is required for the Cisco 3800 Series voice gateway routers. Cisco IOS Software Release 12.3(8)T with IP Voice is required for the Cisco IP Communications Voice/Fax Network Module and Cisco IP Communications High-Density Digital Voice/Fax Network Module. Conferencing using the PVDM2-8 requires Cisco IOS 12.3(11)T1.
- Cisco 2801, 2811, 2821, 2851, 3825, and 3845 voice gateway routers require Cisco CallManager Version 4.0(2a) SR1 for full feature support including Media Termination Point (MTP). However, Cisco CallManager Version 3.3(5) may be used on the Cisco 2811, 2821, 2851, 3825, and 3845 voice gateway routers when MTP support is not needed and conferencing and transcoding support is sufficient.
- Cisco IP Communications Voice/Fax Network Module and Cisco IP Communications High-Density Digital Voice/Fax Network Module require Cisco CallManager Version 4.0(1) for full feature support including MTP. However, Cisco CallManager Version 3.3(4) may be used when MTP support is not needed and conferencing and transcoding support is sufficient.

## CAPACITY PLANNING

DSPs are built directly onto the Cisco IP Communications Voice/Fax Network Module. On the Cisco IP Communications High-Density Digital Voice/Fax Network Module, DSPs are contained on PVDM2s, which are inserted onto the network module. On the Cisco 2800 and 3800 series voice gateway routers, DSPs are contained on PVDM2s, which are inserted directly onto the motherboard. Each DSP is individually configurable to support either conferencing or transcoding and standard voice termination. The total number of conferencing, transcoding, and voice termination sessions is limited by capacity of the entire system, which includes the DSPs, platform, physical voice interface, and Cisco CallManager. Table 2 describes maximum capacity. Actual capacity may be smaller based on the total system design.

**Table 2.** Session Capacity for Voice Termination, Transcoding, and Conferencing

Application	NM-HD-1V/2V	NM-HD-2VE (4 PVDM2-64)	NM-HDV2	2801/2811 (2 PVDM2-64)	2821/2851 (3 PVDM2-64)	3825, 3845 (4 PVDM2-64)
<b>Voice Termination</b>						
G.711 a/u-law	16 sessions	48 sessions	256 sessions	128 sessions	192 sessions	256 sessions
G.729 a/ab, G.726, GSM FR	8 sessions	24 sessions	128 sessions	64 sessions	96 sessions	128 sessions
G.729, G.729b, G.723.1, G.728, GSM EFR	6 sessions	18 sessions	96 sessions	48 sessions	72 sessions	96 sessions
<b>Transcoding</b>						
G.711 a/u-law <-> G.729a /G.729ab /GSM FR	8 sessions	24 sessions	128 sessions	64 sessions	96 sessions	128 sessions
G.711 a/u-law <-> G.729 /G.729b /GSM EFR	6 sessions	18 sessions	96 sessions	48 sessions	72 sessions	96 sessions

Application	NM-HD-1V/2V	NM-HD-2VE (4 PVDM2-64)	NM-HDV2	2801/2811 (2 PVDM2-64)	2821/2851 (3 PVDM2-64)	3825, 3845 (4 PVDM2-64)
<b>Conferencing</b>						
G.711 a/u-law	8 sessions (64 conferees)	24 sessions (192 conferees)	50 sessions (400 conferees)	50 sessions (400 conferees)	50 sessions (400 conferees)	50 sessions (400 conferees)
G.729, G.729a, G.729ab, G.729b	2 sessions (16 conferees)	6 sessions (48 conferees)	32 sessions (256 conferees)	16 sessions (128 conferees)	24 sessions (192 conferees)	32 sessions (256 conferees)
GSM FR	N/A	2 sessions (16 conferees)	14 sessions (112 conferees)	7 sessions (56 conferees)	10 sessions (80 conferees)	14 sessions (112 conferees)
GSM EFR	N/A	1 session (8 conferees)	10 sessions (80 conferees)	5 sessions (40 conferees)	8 sessions (64 conferees)	10 sessions (80 conferees)

## FOR MORE INFORMATION

<http://www.cisco.com/en/US/products/sw/voicesw/ps4952/index.html>



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