



# Enterprise IP Multicast

## How Cisco IT Uses IP Multicasting Globally



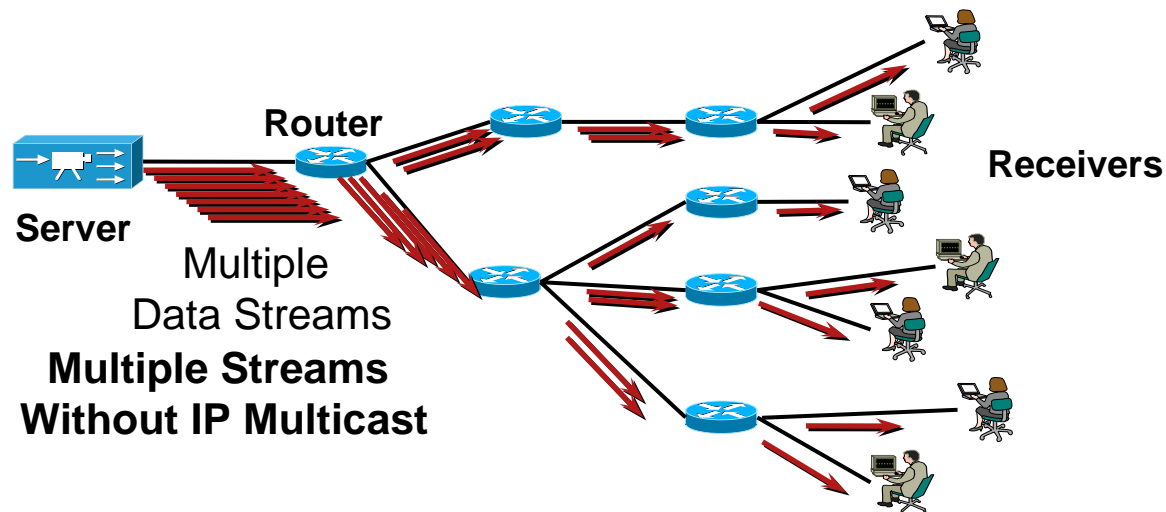
## A Cisco on Cisco Case Study: Inside Cisco IT

# Overview

- **Challenge: One-to-many real-time traffic needs**  
Corporate meetings and videos
- **Solution: Multicast – ASM and SSM**  
Efficient one-to-many transport  
Recently upgraded network to SSM
- **Results: Multicast and SSM is a success**  
Stable and usable within the network
- **Next Steps: New applications**  
Music on Hold and Info Cast

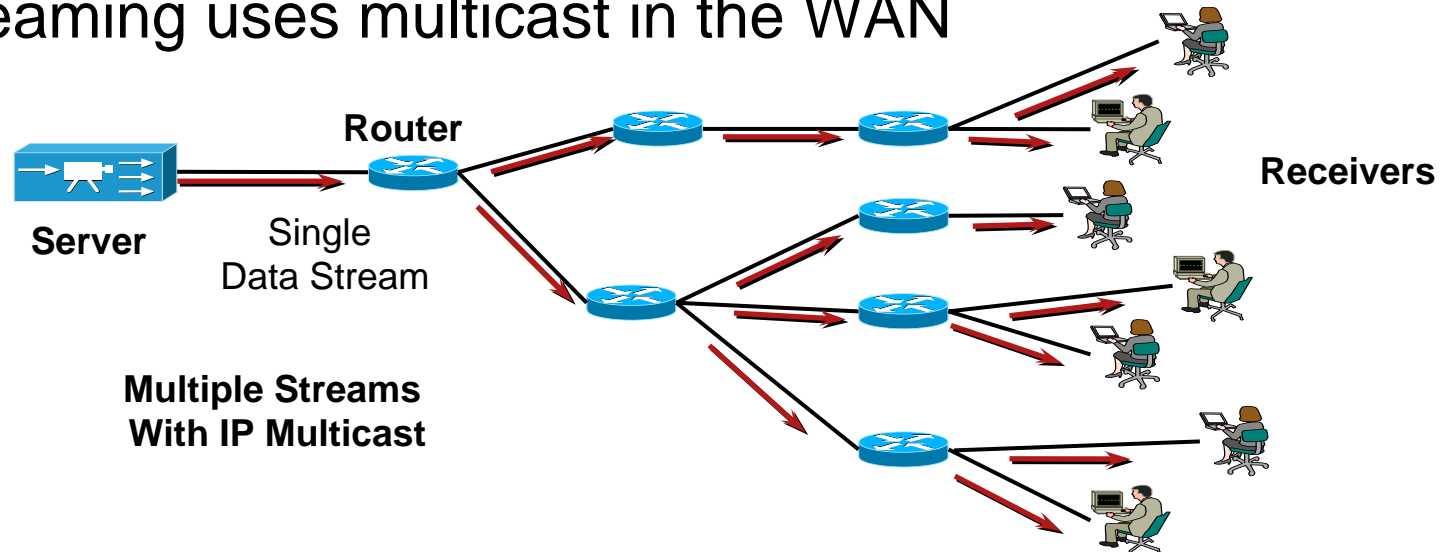
# Challenge: One-to-Many Real-Time Traffic Needs

- Corporate videos of meetings and training saved travel money, but were expensive
  - Sending video tapes to remote sites – too much delay
  - Setting up switched digital circuits – too expensive
- Cisco® IP/TV® can send video across corporate WAN, but ...
- Corporate WAN could not manage thousands of video streams simultaneously



# Solution: Multicast – ASM and SSM

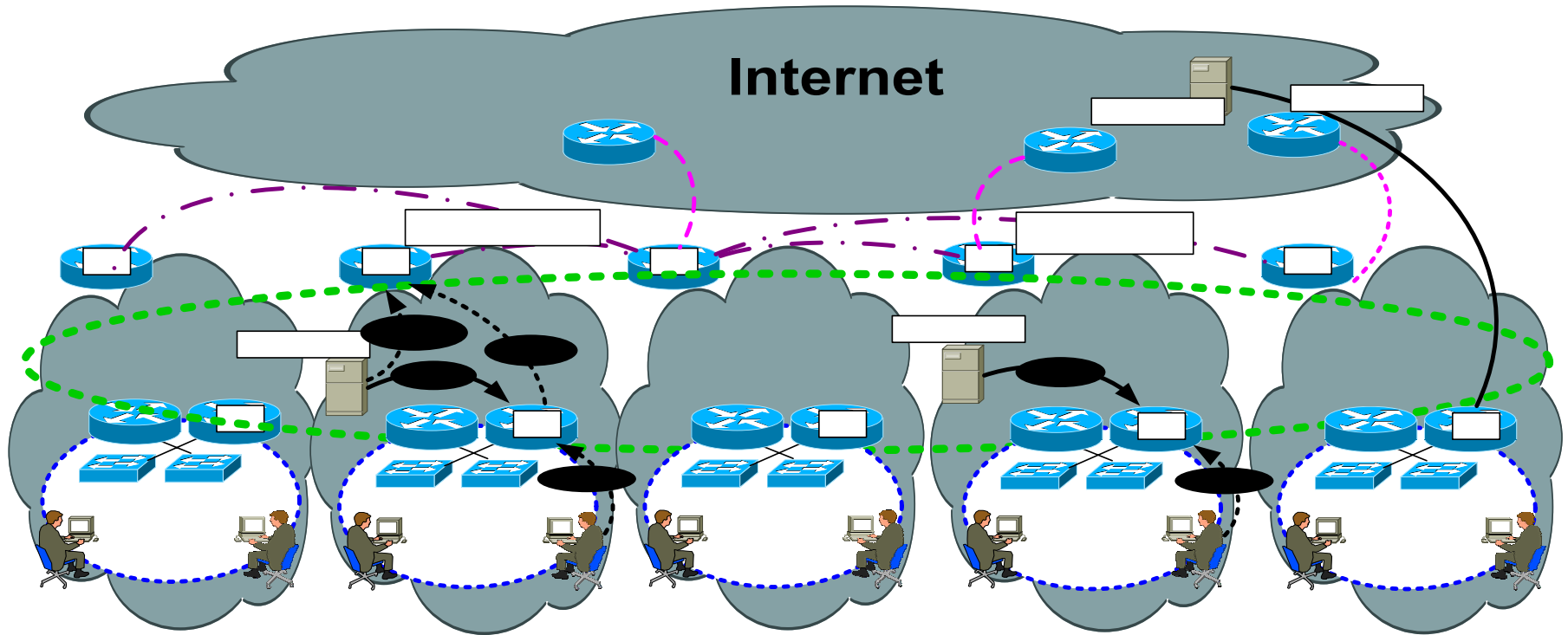
- Multicast ASM (Any Source Multicast) – in use for 4 years
  - Requires Internet Group Multicast Protocol (IGMP) v2
- Multicast SSM (Single Source Multicast) deployed July 2003
  - Requires IGMP v3
- All Cisco® IP/TV®, VoD training, video and audio streaming uses multicast in the WAN



# ASM and SSM

- Multicast SSM learns about sender IP address from the application; ASM learns from the Rendezvous Point router
- Multicast ASM requires complex multicast group and tree setup process; SSM is much simpler
- With ASM, multiple senders can send traffic within a multicast group, causing:
  - Excess network traffic
  - Traffic collisions
  - Possible security concerns
- SSM migration increased stability of multicast sessions

# ASM and SSM



RP



ipmc source

ASM

RP



RP

# Results: Multicast and SSM Is a Success

- Multicast is enabled and stable globally across 1035 routers
- SSM deployment is complete, with no unplanned network downtime or stability issues

# Next Steps: New Multicast Applications

- Multicast Music on Hold support
  - Multicasting music on hold signal to multiple IP phones
- Info Cast support
  - Multicasting corporate announcements to IP phone displays
- Continue to monitor technology and standards for new multicast enhancements

To read the entire case study, or for additional Cisco IT case studies on a variety of business solutions, visit Cisco on Cisco: Inside Cisco IT

[www.cisco.com/go/ciscoit](http://www.cisco.com/go/ciscoit)



**CISCO**



**Americas Headquarters**

Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
[www.cisco.com](http://www.cisco.com)  
Tel: 408 526-4000  
800 553-NETS (6387)  
Fax: 408 527-0883


**Asia Pacific Headquarters**

Cisco Systems, Inc.  
168 Robinson Road  
#28-01 Capital Tower  
Singapore 068912  
[www.cisco.com](http://www.cisco.com)  
Tel: +65 6317 7777  
Fax: +65 6317 7799

**Europe Headquarters**

Cisco Systems International BV  
Haarlerbergpark  
Haarlerbergweg 13-19  
1101 CH Amsterdam  
The Netherlands  
[www-europe.cisco.com](http://www-europe.cisco.com)  
Tel: +31 0 800 020 0791  
Fax: +31 0 20 357 1100

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).

 ©2007 Cisco Systems, Inc. All rights reserved. CCVP, the Cisco logo, and the Cisco Square Bridge logo are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn is a service mark of Cisco Systems, Inc.; and Access Registrar, Aironet, BPX, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, iQuick Study, LightStream, Linksys, MeetingPlace, MGX, Networking Academy, Network Registrar, Packet, PIX, ProConnect, RateMUX, ScriptShare, SlideCast, SMARTnet, StackWise, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0704R)