



SmallCasting Scheduled Programs

This chapter provides information about using SmallCast, and includes a SmallCast example and bandwidth consideration information. Topics covered include:

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- [Bandwidth Considerations, page 7-3](#)

Using SmallCast

The SmallCast capability is designed for intranet and Internet environments in which one or more of the routers are not multicast-enabled. SmallCasting allows a multimedia session to be forwarded across one or more nonmulticast-enabled routers (or across the Internet) as a unicast transmission, and then be multicast to viewers on the remote network segment.

The unicast transmission uses the UDP port number that was defined for the original program, so if the sending server and the receiving server are separated by a firewall, the program must be defined using a UDP port number that the firewall is configured to allow.



Note

IP/TV does not support SmallCasting of Web Presenter programs.

SmallCast Example

With SmallCast, you can instruct an IP/TV Server to send an IP/TV program to another server using the second server's unicast address. The second server then multicasts the program using the multicast addresses specified in IP/TV Program Manager for the original program. Refer to the “Combining Unicast and Multicast Traffic” section in Chapter 1 of the *Cisco IP/TV Broadcast Server User Guide*. This chapter shows an example of this scenario. In the example, the nonmulticast-enabled routers might in fact be on the Internet. Also, see Chapter 11, “Program Examples,” in this guide.

Many options are possible in this scenario. Server A can simultaneously multicast the program, as well as unicasting it. You could define a program instructing Server B to record the incoming unicast program in a disk file at the same time that it is being multicast.

IP/TV Program Manager determines whether to use the SmallCast capability based on information in two places:

- When you define an IP/TV Server, you can enter the unicast addresses of up to 20 servers to which this server can send SmallCast programs. The number of SmallCast destinations is configured in the Preferences window of IP/TV Program Manager.
- When you define a program, you can enable or disable SmallCast for this program. SmallCast is disabled by default. If you enable SmallCast, this program is automatically sent to all of the SmallCast destinations set up on the IP/TV Server that is the source server for this program.

**Note**

When IP/TV is integrated with an ACNS network, you can set up a live multicast with live-split program delivery, instead of using SmallCast. In this case, the root Content Engine unicasts the stream to the edge Content Engine, which can multicast the stream to the clients connected to it. This edge Content Engine replaces the remote IP/TV Broadcast Server in such cases.

Bandwidth Considerations

It is important to note that each single unicast session consumes as much network bandwidth as a multicast of the same session. Thus, for example, if the multicast session consumes 1.15 Mbps (typical for MPEG video), and the session is also sent to seven unicast destinations, your network will be flooded with 9.2 Mbps of data streams. On a typical 10BASE-T Ethernet network, this could result in severe disruption of network traffic.

In order to prevent unnecessary (or extraordinary) loads on your network, consider the following:

- When setting up an IP/TV Server with a list of unicast addresses, make sure to list only those servers that are on the other side of a nonmulticast-capable router (or across the Internet) from this server.
- Before enabling SmallCast for a program, make sure that you really want to send the program to all of the SmallCast destinations defined on the source server. You cannot set the program to unicast to only part of the source server SmallCast list; the program is automatically unicast to all servers in the list.

If the sending IP/TV Server unicasts a program to a remote IP/TV Server that for some reason is not able to receive the transmission (for example, if the remote device is down or not running IP/TV Server), that unicast transmission terminates as soon as the sending server discovers that the remote server is not listening. This action prevents “receiver not responding” error messages from flooding the network path from the intended receiver back to the sender. (Simultaneous unicasts to other servers continue normally.)

■ **Bandwidth Considerations**