SmallCasting Scheduled Programs

This chapter provides information about using SmallCast, and it includes a SmallCast example and bandwidth consideration information.

This chapter contains the following sections:

Using SmallCast

The SmallCast capability is 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

SmallCast enables you to 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 section contains an example of the above scenario, in which, the nonmulticast-enabled routers might 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 unicast it. You can 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 or not 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 session 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

Each unicast session consumes as much network bandwidth as a multicast of the same session. For example, if the multicast session consumes 1.15 Mbps (typical for MPEG video), and the session is 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 situation 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, 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 want to send the program to all of the SmallCast destinations defined on the source server. You cannot set the program to unicast to part of the source server SmallCast list; the program automatically unicasts to all servers in the list.

If the sending IP/TV Server unicasts a program to a remote IP/TV Server that 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.)