CHAPTER 10

File Transfers

This chapter describes how to configure the Cisco FTP Server, and how to use the IP/TV Content Manager to schedule file transfers.

Two IP/TV components cooperate to accomplish file transfers:

- Cisco FTP Server transfers files among IP/TV Servers. See the "Administering the Cisco FTP Server" section later in this chapter.
- IP/TV Content Manager schedules file transfers. See the "Managing File Transfers" section later in this chapter.

File transfers are used to move IP/TV programs between IP/TV Servers, possibly at off-peak hours to avoid overloading the network. File transfers also replicate on-demand content, allowing the IP/TV Content Manager to balance the load among a cluster of servers. See the "How IP/TV Components Interact" section in the "Introduction" chapter in this publication for an overview of server clusters, and to the "Setting Up IP/TV Content Manager" chapter for information about defining clusters.

Two different logs of FTP-related activities are available:

- The Cisco FTP Server maintains a detailed log of information about file transfers for which it is either the source or the destination (see the "In the Logging section of the General tab on the Cisco FTP Server window, there are three options:" section later in this chapter for information about the Cisco FTP Server log). The Cisco FTP Server log is intended primarily for advanced users and Cisco Technical Support personnel.
- The IP/TV Content Manager maintains a detailed log of information about file transfers that it manages (see the "File Transfer Log" section later in this chapter). The detailed log is intended primarily for use by advanced users and Cisco Technical Support personnel.

In addition, the IP/TV Content Manager provides an easy-to-read summary for each file transfer that it manages (see the "Displaying the Results of a File Transfer" section later in this chapter). In most cases, this is the only file transfer history that you need to view.

Administering the Cisco FTP Server

Most file transfer functions are accomplished using the IP/TV Content Manager. However, you access the Cisco FTP Server application directly to perform the following functions:

- Stopping and restarting the Cisco FTP Server
- Changing the Cisco FTP Server root directory
- Controlling the automatic deletion of partially received files
- Adding, changing, or deleting FTP login entries
- Turning the Cisco FTP Server log on or off, and viewing the Cisco FTP Server log
- Configuring host access privileges
- Configuring login access privileges

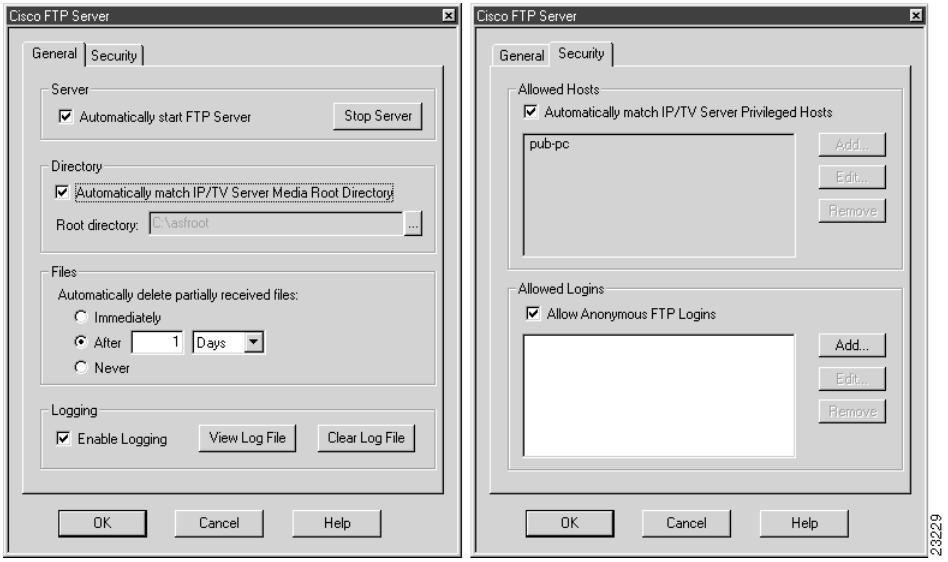
The Cisco FTP Server is an installation option.

If you installed the Cisco FTP Server and selected autostart at launch, the Cisco FTP Server appears as an icon on your system tray. Double-click the icon to open the Cisco FTP Server window.

If you did not select autostart at launch, you can start the Cisco FTP Server and open the Cisco FTP Server window by clicking **Start>Programs>Cisco FTP Server>Cisco FTP Server**.

The Cisco FTP Server window has two tabs, labeled General and Security. Both tabs are shown in Figure 10-1.

Figure 10-1 Cisco FTP Server Window



Stopping and Restarting the Cisco FTP Server

If the Cisco FTP Server is currently running, you can stop the server by clicking the **Stop Server** button located in the Server section of the General tab in the Cisco FTP Server window.

In addition, you can enable or disable the autostart function by selecting or clearing the Automatically Start FTP Server box.

If the Cisco FTP Server is currently stopped, you can restart it by clicking **Start>Programs>Cisco FTP Server>Cisco FTP Server.**

Changing the Cisco FTP Server Root Directory

The path to the Cisco FTP Server's root directory is set when you install the Cisco FTP Server.

If you want to override the path after installation, first create the new directory, then enter the directory path in the text box in the File Access section of the Cisco FTP Server window.

The new path does not take effect until you click the **OK** button at the bottom of the window.

In addition, if the Cisco FTP Server is running on the same machine as the IP/TV Server, you can instruct the Cisco FTP Server to use the IP/TV Server's media root directory as the FTP Server Root directory by selecting the Automatically Match IP/TV Server Media Root Directory box.

Automatically Deleting Partially Received Files

In the Files section of the General tab on the FTP Server window (see Figure 10-1), you can choose one of the following options for handling partially received files:

- Delete the file immediately. If you specify this option, you disable the ability of the Cisco FTP Server to automatically restart an FTP job if it detects that a problem occurred during a transfer.
- Delete the file after a specified number of minutes, hours, or days. By default, this option is selected, and the interval is set to 1 day.
- Never delete incomplete files. This option can consume large amounts of disk space.

Logging

In the Logging section of the General tab on the Cisco FTP Server window, there are three options:

- Enable Logging: If selected, enables logging. If cleared, disables logging.
- View Log File: Displays the contents of the log file using Notepad.
- Clear Log File: Displays a prompt asking if you want to delete all existing contents in the log file.

Configuring Host Access Privileges

On the Security tab of the Cisco FTP Server window, you can specify the hosts or subnets from which FTP access is allowed.

By default, the Cisco FTP Server is configured to accept access from all subnets. For better security, you should disable "all subnets" and specify a list of hosts or subnets from which access is allowed. Follow these steps to configure host access privileges:

Step 1 In the list box in the Allowed Hosts section, select the entry "0.0.0.0/0" and click the **Remove** button.

Step 2 Click the **Add** button.

Step 3 In the FTP Allowed Hosts dialog box, click the **Host** button and enter the IP address or name of a host, or click the **Subnet** button and enter the IP address and significant bits of a subnet mask.

Step 4 Click **OK**.

The hosts or subnets you add are allowed to access the Cisco FTP Server. No other hosts or subnets can connect to the Cisco FTP Server.

Note By default, if Cisco FTP Server is running on the same machine as IP/TV Server, both servers are automatically configured with the same host access list.

Configuring Login Access Privileges

On the Security tab of the Cisco FTP Server window, you can add, change, or delete the login names allowed to access the server.

The default FTP login name and password are set when you install the Cisco FTP Server.

To add a new FTP login name, click the **Add** button in the Allowed Logins section of the window. The FTP Login dialog box prompts you to enter the new login name and password.

To edit an existing FTP login name, click the login entry in the Allowed Logins list box and click the **Edit** button. A dialog box prompts you to make the required changes.

To remove an existing FTP login name, click the login entry in the Allowed Logins list box and click the **Remove** button.

By default, anonymous FTP logins are enabled. Anonymous FTP logins always use the login name *anonymous* and the password *guest*. For better security, it is best to disable anonymous FTP logins by clearing **Allow Anonymous FTP Logins**.

Managing File Transfers

The IP/TV Content Manager allows you to schedule file transfers and to automatically transfer files among IP/TV Servers, IP/TV Content Managers, and other file servers using the Cisco FTP Service. This service is designed to work with IP/TV and is not intended to be used as a general-purpose FTP service.

In order to transfer files among servers, you must install the Cisco FTP Service software on each server, or have an FTP Server that supports third-party transfers. Microsoft IIS includes an FTP Server, but it does not support third-party transfers.

The advantages of using the FTP Service rather than sending a program as a SmallCast transmission are as follows:

- FTP transfers can be scheduled at off-peak times when the network is not heavily loaded.
- FTP transfers can reliably transfer multimedia content over network connections that are not multicast-enabled (such as the Internet).

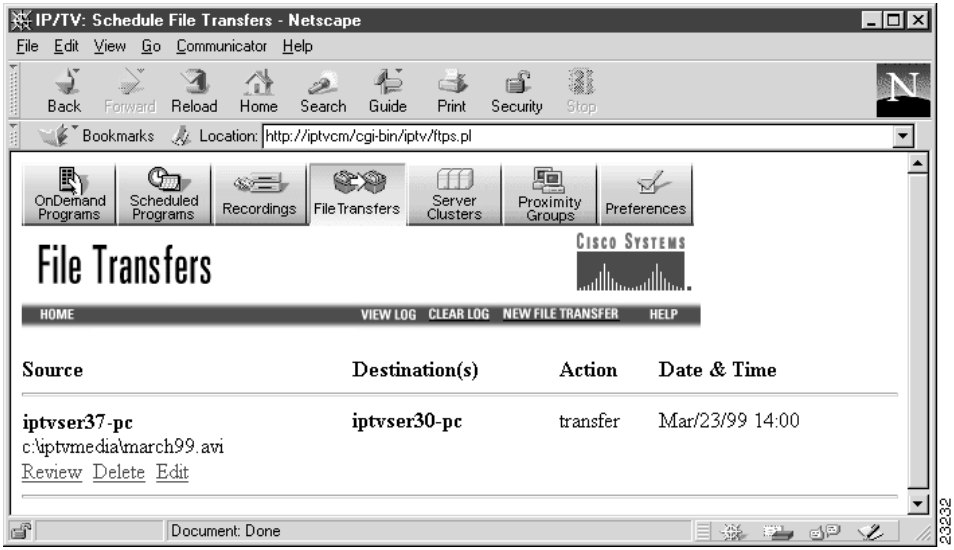
If an important event is taking place at corporate headquarters, for example, you can set up an IP/TV Server at headquarters to capture the event, save it to a file with the Record feature, then use the File Transfer feature to transmit the file to IP/TV Servers at all the corporation's worldwide offices. The event can then be multicast at times convenient to each location.

To display a list of all scheduled FTP activity, click the **File Transfers** button on the IP/TV Content Manager main page. The File Transfers page appears (see Figure 10-2). The page lists both file transfers and FTP delete jobs.

For each scheduled file transfer, the information displayed includes the source server(s), the source filename, the destination server(s), the destination filename (if it is different from the source filename), and the date and time of the transfer. See the "Scheduling a File Transfer" section later in this chapter for information about setting up a file transfer.

For each scheduled delete job, the information displayed includes the source server(s), the source filename, and the date and time of the delete job. See the "FTP Delete Jobs" section later in this chapter for information about how FTP delete jobs are initiated.

Figure 10-2 File Transfers Page



For each file transfer, the following links are available:

- The Review link. This link takes you to the Review File Transfer page (see the "Reviewing a File Transfer" section later in this chapter).
- The Delete link. This link takes you to the Delete File Transfer page (see the "Deleting a File Transfer" section later in this chapter).
- The Edit link. This link takes you to the Edit File Transfer page (see the "Deleting a File Transfer" section later in this chapter).
- The Results link (which is present only after the file transfer has begun). This link takes you to the Results page (see the "Displaying the Results of a File Transfer" section later in this chapter).

On the task bar on the File Transfers page are two FTP log links:

- **View File Transfer Log**. This link displays the contents of the FTP log.
- **Clear File Transfer Log**. This link clears the contents of the FTP log.

See the "File Transfer Log" section later in this chapter.

Scheduling a File Transfer

Follow these steps to schedule a file transfer:

Step 1 In the File Transfers page, click the **New File Transfer** link in the task bar. The New File Transfer page appears.

Step 2 Optionally, enter a description of the file to be transferred.

Step 3 In the Source Server section of the New File Transfer page (see Figure 10-3), select a server in the Server Name list box. This is the server on which the file currently exists.

Step 4 Use the **Browse** button to locate the file. The Browse function can locate any file that is stored under the source server's FTP root directory.

If the source server is an IP/TV Server, the FTP root directory should be set to the same directory as the IP/TV Server's media root directory. See the "Changing the Cisco FTP Server Root Directory" section earlier in this chapter for information on setting the FTP root directory to the same path as the media root directory.

Alternatively, you can enter the path name of the source file in the text box. Keep in mind that the file must be within the FTP root directory, and the path must be relative to the FTP root, not an absolute path name.

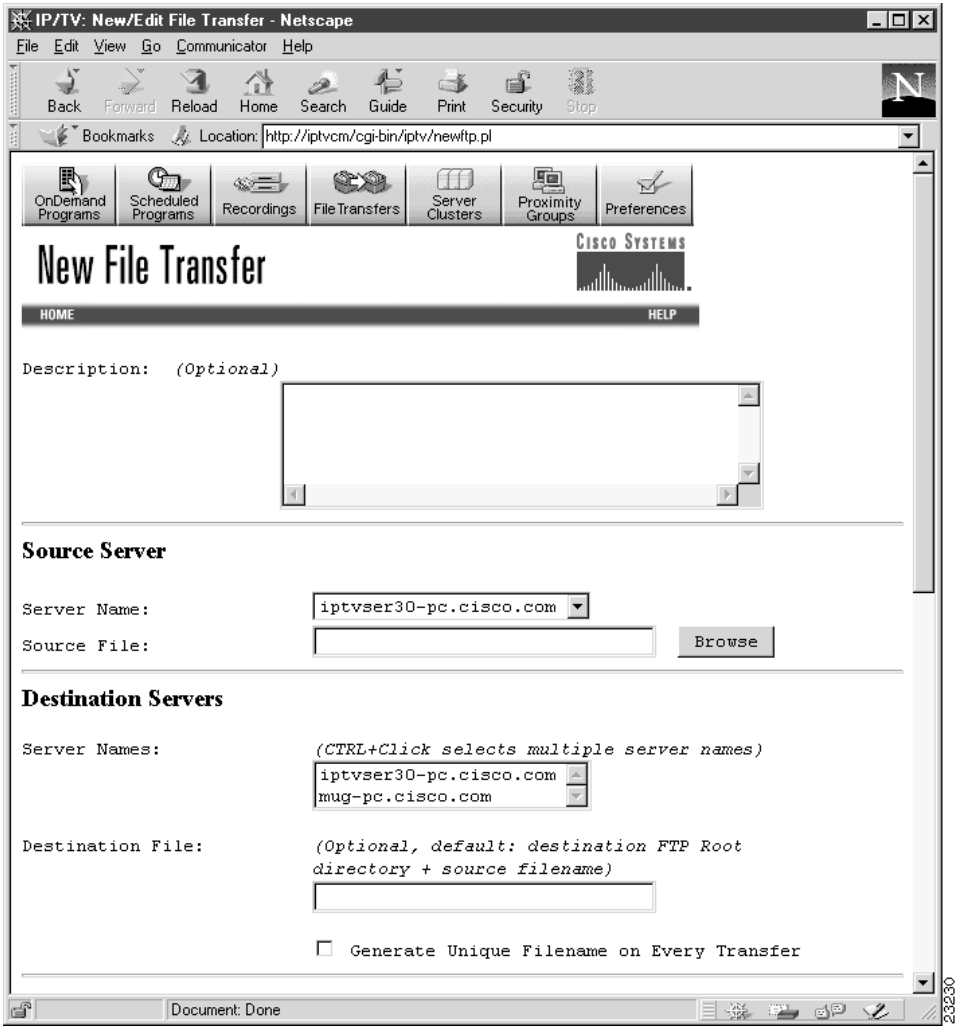
Step 5 In the Destination Servers section of the New File Transfer page, select a server in the Server Names list box. This is the server to which you want to transfer the file. If you want the file to be transferred from the source server to more than one destination server, press the **Ctrl** key while clicking to select multiple servers.

Step 6 Enter the destination filename. By default, the destination filename matches the source filename, relative to the destination server's FTP root directory.

Step 7 If you transfer multiple copies of the same file, you can specify whether the destination file is assigned a unique filename. A unique filename prevents the first file from being overwritten by a later file that has the same name. If the job is to be repeated at a specified interval, and you do not want the previous file to be overwritten, select **Generate Unique File Name**.

Note If you specify unique filenames, these files can consume a great deal of disk space and may quickly fill the destination server's disk drive.

Figure 10-3 Source Servers Section of the New File Transfer Page



Step 8 In the Schedule section of the New File Transfer page (see Figure 10-4), enter the schedule for the file transfer.

The File Transfer Schedule options are similar to those in the New Program page. Table 10-1 describes the options.

Figure 10-4 Schedule Section of the New File Transfer Page

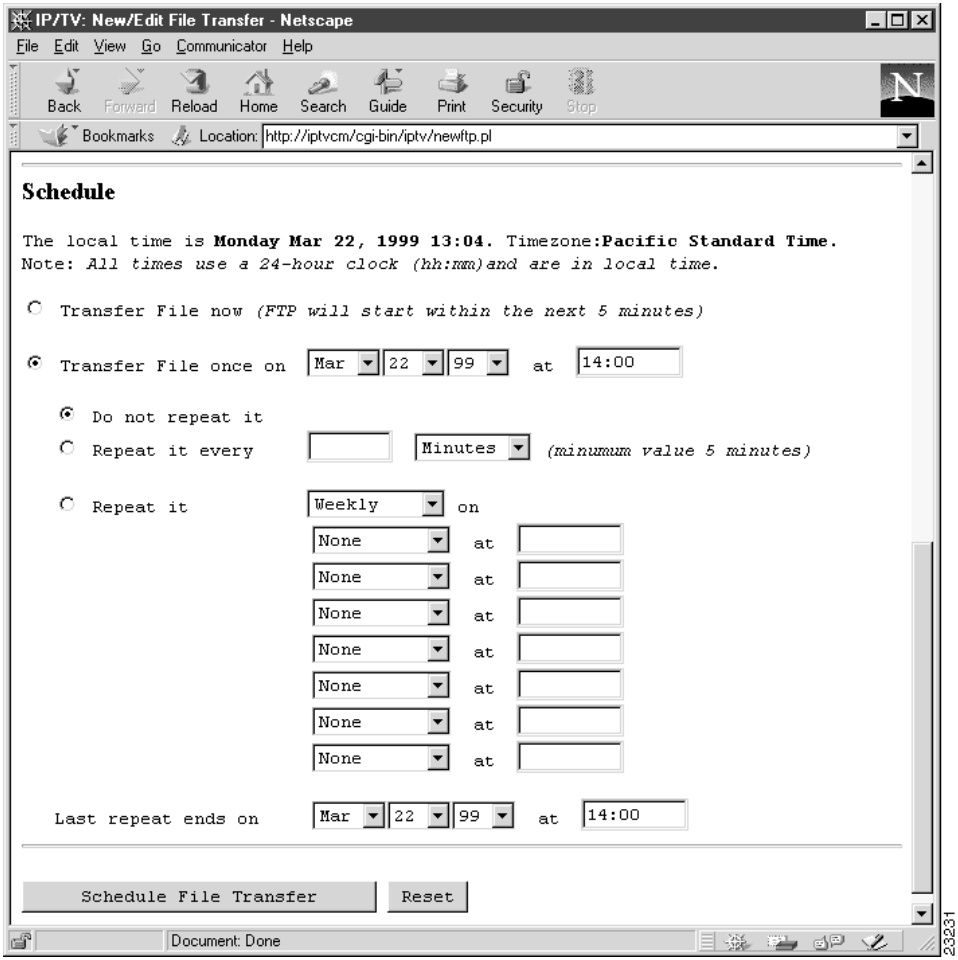


Table 10-1 File Transfer Schedule Options

Parameter	Description
Transfer File now	Sets the file transfer to begin within 5 minutes after the form is submitted to the IP/TV Content Manager.
Transfer File once on	Sets the date and time of the first transfer of this file.
Do not repeat it	Sets a single file transfer.
Repeat it every	Sets a simple repeat schedule.
Repeat it	Sets a more complex repeat schedule.
Last repeat ends on	Sets the end of the repeat schedule.

Note Repeats should not be too frequent. Repeats at intervals shorter than 10 minutes may not function correctly.

Step 9 Click the **Schedule File Transfer** button at the bottom of the New File Transfer page to send the form to the IP/TV Content Manager.

If the IP/TV Content Manager finds errors or omissions in the form, the Data Entry Errors page prompts you to return to the New File Transfer page to modify the information.

When you have finished correcting the errors, click the **Schedule File Transfer** button again to submit the corrections to the IP/TV Content Manager.

If the form is properly completed, you return automatically to the File Transfers page.

Reviewing a File Transfer

Follow these steps to review a file transfer:

Step 1 On the File Transfers page, click the **Review** link for the file transfer you want to review.

Step 2 Scroll through the Review File Transfer page to find the information you want to see.

Step 3 After you have reviewed the information, click the **File Transfers** button to return to the File Transfers page.

Deleting a File Transfer

Follow these steps to delete a file transfer:

Step 1 On the File Transfers page, click the **Delete** link for the file transfer you want to delete. Or, on the Review File Transfer page, click the **Delete File Transfer** button.

Step 2 The IP/TV Content Manager displays the Delete File Transfer page and asks you to confirm that you want to delete the file transfer.

Click the **Delete File Transfer** button to delete the recording.

Click the **File Transfers** button to return to the File Transfers page without deleting the file transfer.

Editing a File Transfer

Follow these steps to edit a file transfer:

Step 1 On the File Transfers page, click the **Edit** link for the file transfer you want to modify. Or, on the Review File Transfers page, click the **Edit File Transfer** button at the bottom of the page.

Step 2 Scroll through the Edit File Transfer page to find the information you want to change. The page allows you to change any field that was entered when the file transfer was scheduled.

Step 3 Click the **Revise File Transfer** button at the bottom of the page to send the changes to the IP/TV Content Manager.

If the IP/TV Content Manager finds errors or omissions in the page, the Data Entry Errors page prompts you to return to the Edit File Transfer page to modify the information.

When you have finished correcting the errors, click the **Revise File Transfer** button again to submit the corrections to the IP/TV Content Manager.

If the page is properly completed, you return automatically to the File Transfers page.

Displaying the Results of a File Transfer

After a file transfer has completed, a Results link appears in the File Transfers page, next to the **Edit** link for the file transfer. Click the **Results** link to display the Results page, which provides a summary of the activity for the file transfer. Figure 10-5 shows an example of the Results page.

Figure 10-5 File Transfer Results Page

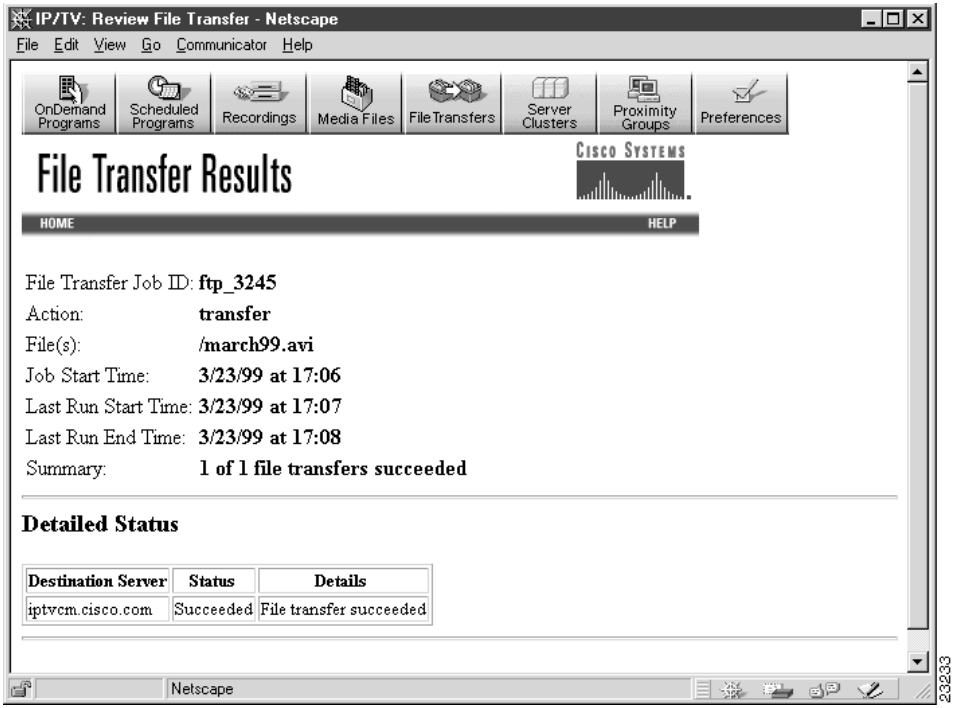


Table 10-2 describes the fields in the Results page.

Table 10-2 Results Page Fields

Field	Description
File Transfer Job ID	Indicates the FTP job identifier.
Action	Indicates the FTP job type (transfer or delete).
File(s)	Indicates the name of the file involved in the FTP job.
Job Start Time	Indicates the date and time when the first transfer attempt began.
Last Run Start Time	Indicates the date and time at which the last transfer attempt began.
Last Run End Time	Indicates the date and time when the last transfer attempted completed or was aborted.
Summary	Summarizes the status of the transfer.

The Detailed Status section of the File Transfer Results page contains one or more tables:

- The Destination Server table. This table lists the name of the destination server, the status of the transfer, and a detailed description of the results of the transfer on the destination server.
- The Source Server table. This table lists the name of the source server, the status of the transfer, and a detailed description of the results of the transfer on the source server.

If the transfer succeeded, only the Destination Server table appears. If the transfer failed, either one or both of these tables may appear, depending upon where the error occurred.

Automatic File Transfers

When setting up a new on-demand program, you may choose to autodistribute the file to one or more additional servers (see the "Creating an OnDemand Program" section in the *IP/TV Content Manager User Guide)*. If you select an additional server, and the Autodistribute option is selected, a file transfer job is automatically created to transfer the file to the new server(s) using FTP.

Autodistribute file transfers have Results pages (see the "Displaying the Results of a File Transfer" section earlier in this chapter).

Alternatively, you can identify these autodistribute jobs in the file transfer log by their job description:

Autodistribute: <on-demand program name>

FTP Delete Jobs

Two IP/TV Content Manager functions can initiate an FTP delete job:

- When you delete an on-demand program, if the program you delete is the last program to use the media file, you can specify that the media file should be deleted along with the program.
- If you use the Find and Optionally Delete Media Files with no Programs option on the Search page, you can specify the media files you want to delete.

FTP delete jobs initiated by these mechanisms are listed on the File Transfers page, and can be reviewed, deleted, or edited in the same way as file transfer jobs.

File Transfer Log

At the top of the File Transfers page are two FTP log links:

- View File Transfer Log link. This link displays the contents of the file transfer log.
- Clear File Transfer Log link. This link clears the contents of the file transfer log.

The file transfer log is a detailed record of the history of each file transfer managed by this IP/TV Content Manager.

Note The detailed log is intended primarily for the use of advanced users and Cisco Technical Support personnel.

Viewing the File Transfer Log

The log contains entries describing all file transfer activities. As new file transfers take place, entries are added at the bottom of the log file.

Follow these steps to view the log entries for a particular file transfer:

Step 1 On the File Transfers page, click the **Review** link for the file transfer whose entries you want to see. The first entry on the Review File Transfer page includes a five-digit file transfer job ID number. Make a note of the number.

Step 2 Click the **File Transfers** button to return to the File Transfers page.

Step 3 Click the **View File Transfer Log** link to display the contents of the log. Every entry in the log that relates to a particular file transfer contains the file transfer job ID number.

Step 4 Use the browser's search tools to search for the file transfer job ID number. For example, in Netscape Navigator, click **Edit>Find in Page...** to open the search dialog box.

Step 5 In the search dialog box, enter the job ID number and press the **Enter** key. Each time you press the Enter key, the search tool displays the next line that contains the specified job ID.

Entries in the log have the following format:

<host process id>**: Status:** <status/activity>

where <host process id> is a host process identifier created by the source server, and <status/activity> describes the activity being performed or the result of the activity (such as success or failure). The process identifier is *not* the IP/TV Content Manager file transfer job ID number. The file transfer job ID number is contained in the <status/activity> portion of the entry.

If the file transfer in question transferred a file to multiple destination servers, each of those individual transfers is assigned a unique host process identifier by the source server. You can use that identifier to distinguish among multiple transfers.

Note If you have chosen to autodistribute on-demand files between servers, the file transfer log includes a record of file transfers that occurred as a result of the autodistribute function, as well as file transfers you scheduled explicitly.

Clearing the File Transfer Log

The log is not cleared automatically, so file transfer activity entries continue to accumulate. The file can eventually become very large. You should clear the log periodically.

There are two ways to clear the log:

- Click the **Clear Log** link on the task bar on the File Transfers page.
- View the log using the **View File Transfer Log** link on the File Transfers page, and then click the **Clear Log** button at the bottom of the log. The IP/TV Content Manager asks you to confirm that you want to clear the log. To clear the log, click **Clear Log** again. To preserve the log, click **Cancel**.