



## Verifying the Internet Streamer CDS

---

This appendix covers the steps to test the CDS by using the different media players. This appendix covers the following topics:

- [Verifying the Web Engine, page K-1](#)
- [Verifying the Windows Media Streaming Engine, page K-9](#)
- [Verifying the Movie Streamer Engine, page K-13](#)
- [Verifying the Flash Media Streaming Engine, page K-21](#)

The CDS network topology example used in these procedures consists of the following devices:

- 2 CDE220s configured as Service Engines (SEs)
  - NE-DEMO-SE1 — Tier 1 location
  - NE-DEMO-SE2 — Tier 2 location
- 1 CDE205 configured as a Service Router (SR)
  - NE-DEMO-SR — Tier 2 location
- 1 CDE205 configured as a Content Delivery System Manager (CDSM)
  - NE-DEMO-CDSM

## Verifying the Web Engine

This section consists of the following procedures:

- [Verifying Preingested Web Content](#)
- [Verifying Dynamically Ingested Web Content](#)

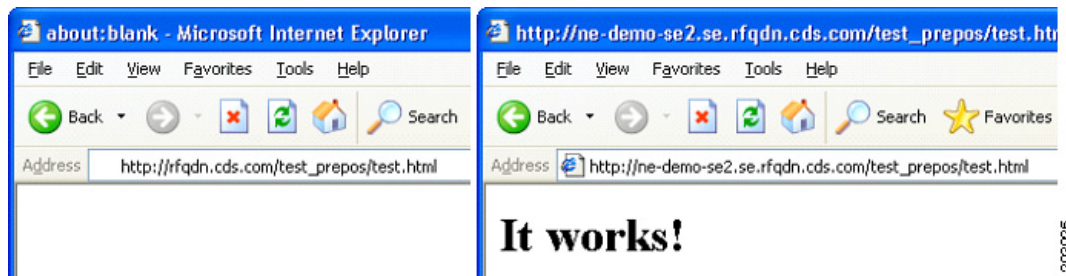
## Verifying Preingested Web Content

**Note**

Content must be preingested. See the “[Configuring Delivery Services](#)” section on page 5-1 for more information. Verify that the content has been pre-positioned by using the **show distribution object-status *name-of-object*** command.

- Step 1** In a web browser on a client PC, enter the URL of the preingested HTML content using the Service Routing Domain Name in the URL. In the example, this is “[http://rfqdn.cds.com/test\\_prepos/test.html](http://rfqdn.cds.com/test_prepos/test.html).” Client requests are directed to this domain name and are then redirected by the Service Router to the content on the Service Engine. [Figure K-1](#) shows the initial URL on the left and the redirection on the right.

**Figure K-1 URL Redirection for Preingested Content**



- Step 2** On the Service Engines, verify that the request was served as a preingested hit. View the HTTP request statistics by starting an SSH session and entering the **show statistics web-engine** command. In this case, the Service Router redirected the request to NE-DEMO-SE2, which served the request.

```
NE-DEMO-SE1# show statistics web-engine
```

```
HTTP Request Info Statistics
-----
Num Lookups                : 0
Preposition Hit            : 0
External Hit               : 0
Cache Hit                  : 0
Cache Miss                 : 0
Partial Cache Hit         : 0
Cache Bypass               : 0
Live Miss                  : 0
Live Hit                   : 0
ASX Meta Response         : 0

HTTP Request Type Statistics
-----
Get Requests               : 0
Post Requests              : 0
Head Requests              : 0
Range Requests Received   : 0
Range Requests Sent       : 0
Revalidation Requests Received : 0
Revalidation Requests Sent : 0
Liveness Query            : 0
WMT(http) Redirected Requests : 0
Local Requests             : 0
Play Live Requests        : 0
Total Outgoing Requests   : 0

HTTP Authorization Statistics
-----
Authorization Allow       : 0
Authorization No Cache    : 0
Authorization Force Revalidate : 0
Authorization Deny       : 0
Authorization Rewrite     : 0
Authorization GenerateSign : 0
```

```

Authorization Redirect      : 0
Authorization Resolve      : 0

```

WMT(http) Rule Statistics

```

-----
Allow                      : 0
Block                     : 0
Url Redirect              : 0
Url Rewrite               : 0
Validate Url Signature    : 0
No Cache                  : 0

```

HTTP Error Statistics

```

-----
Client Errors             : 0
Server Errors            : 0
Bad Requests             : 0
Error Response Miss      : 0
Error Response Hit       : 0

```

Statistics was last cleared on Thursday, 09-Sep-2010 14:15:52 PDT.

NE-DEMO-SE2# **show statistics web-engine**

HTTP Request Info Statistics

```

-----
Num Lookups               : 1
Preposition Hit           : 1
External Hit              : 0
Cache Hit                 : 0
Cache Miss                : 0
Partial Cache Hit         : 0
Cache Bypass              : 0
Live Miss                 : 0
Live Hit                  : 0
ASX Meta Response        : 0

```

HTTP Request Type Statistics

```

-----
Get Requests              : 1
Post Requests             : 0
Head Requests            : 0
Range Requests Received   : 0
Range Requests Sent       : 0
Revalidation Requests Received : 0
Revalidation Requests Sent : 0
Liveness Query           : 0
WMT(http) Redirected Requests : 0
Local Requests           : 0
Play Live Requests       : 0
Total Outgoing Requests   : 0

```

HTTP Authorization Statistics

```

-----
Authorization Allow       : 1
Authorization No Cache    : 0
Authorization Force Revalidate : 0
Authorization Deny       : 0
Authorization Rewrite     : 0
Authorization Resolve     : 0

```

WMT(http) Rule Statistics

```

-----
Allow                    : 1

```

```

Block : 0
Url Redirect : 0
Url Rewrite : 0
Validate Url Signature : 0
No Cache : 0

WMT(http) Rule Statistics
-----
Allow : 0
Block : 0
Url Redirect : 0
Url Rewrite : 0
Validate Url Signature : 0
No Cache : 0

HTTP Error Statistics
-----
Client Errors : 0
Server Errors : 0
Bad Requests : 0

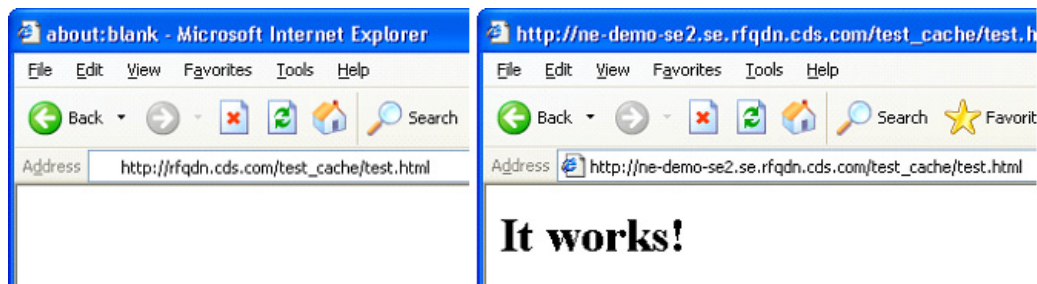
Statistics was last cleared on Thursday, 09-Sep-2010 14:15:52 PDT.

```

## Verifying Dynamically Ingested Web Content

- Step 1** In a web browser on the client PC, enter the URL of non-preingested HTML content on the Service Router. This is content that exists on the origin server or some other server that is accessible but not yet preingested. In the example, the origin server has a directory “test\_cache” with a content object “test.html.” [Figure K-2](#) shows the initial URL on the left and the redirection on the right.

**Figure K-2** URL Redirection for Non-Preingested Content



This is a cache miss scenario. Neither Service Engine had the content preingested, so the content is acquired by NE-DEMO-SE1 (the Content Acquirer). The content is then cached and replicated to NE-DEMO-SE2 (the receiver, which also happens to be the SE that is serving this client request). NE-DEMO-SE2 then serves the request (as visible by the new URL in [Figure K-2](#)), having cached the content as well.

- Step 2** View the HTTP request statistics by entering the **show statistics web-engine** command.

```

NE-DEMO-SE1# show statistics web-engine

HTTP Request Info Statistics
-----
Num Lookups : 1

```

```

Preposition Hit           :           0
External Hit              :           0
Cache Hit                 :           0
Cache Miss                :           1
Partial Cache Hit        :           0
Cache Bypass              :           0
Live Miss                 :           0
Live Hit                  :           0
ASX Meta Response        :           0

```

#### HTTP Request Type Statistics

```

-----
Get Requests              :           1
Post Requests             :           0
Head Requests            :           0
Range Requests Received  :           0
Range Requests Sent      :           0
Revalidation Requests Received :       0
Revalidation Requests Sent :       0
Liveness Query           :           1
WMT(http) Redirected Requests :       0
Local Requests           :           0
Play Live Requests       :           0
Total Outgoing Requests  :           0

```

#### HTTP Authorization Statistics

```

-----
Authorization Allow      :           1
Authorization No Cache   :           0
Authorization Force Revalidate :       0
Authorization Deny      :           0
Authorization Rewrite    :           0
Authorization Resolve    :           0

```

#### WMT(http) Rule Statistics

```

-----
Allow                    :           1
Block                    :           0
Url Redirect             :           0
Url Rewrite              :           0
Validate Url Signature   :           0
No Cache                 :           0

```

#### HTTP Error Statistics

```

-----
Client Errors            :           0
Server Errors           :           0
Bad Requests            :           0

```

Statistics was last cleared on Thursday, 09-Sep-2010 16:15:52 PDT.

NE-DEMO-SE2# **show statistics web-engine**

#### HTTP Request Info Statistics

```

-----
Num Lookups              :           1
Preposition Hit          :           0
External Hit             :           0
Cache Hit                :           0
Cache Miss               :           1
Partial Cache Hit       :           0
Cache Bypass             :           0
Live Miss                :           0
Live Hit                 :           0

```

```

ASX Meta Response          :                0

HTTP Request Type Statistics
-----
Get Requests               :                1
Post Requests              :                0
Head Requests              :                0
Range Requests Received    :                0
Range Requests Sent        :                0
Revalidation Requests Received :            0
Revalidation Requests Sent :                0
Liveness Query             :                0
WMT(http) Redirected Requests :            0
Local Requests             :                0
Play Live Requests        :                0
Total Outgoing Requests    :                0

HTTP Authorization Statistics
-----
Authorization Allow        :                1
Authorization No Cache     :                0
Authorization Force Revalidate :            0
Authorization Deny        :                0
Authorization Rewrite      :                0
Authorization Resolve      :                0

WMT(http) Rule Statistics
-----
Allow                      :                1
Block                      :                0
Url Redirect               :                0
Url Rewrite                :                0
Validate Url Signature     :                0
No Cache                   :                0

HTTP Error Statistics
-----
Client Errors              :                0
Server Errors              :                0
Bad Requests               :                0

```

Statistics was last cleared on Thursday, 09-Sep-2010 16:17:52 PDT.

**Step 3** Verify that the content was cached properly on NE-DEMO-SE1 and NE-DEMO-SE2 by entering the **show cache content** command.

```

NE-DEMO-SE1# show cache content
Max-cached-entries is set as 20000000
Number of cal cached assets: 1
Eviction protection is disabled.
Cache eviction-preferred-size configured is large
-----
Size    URL
-----
44      http://ofqdn.cds.com/test_cache/test.html

```

```

NE-DEMO-SE2#show cache content
Max-cached-entries is set as 20000000
Number of cal cached assets: 1
Eviction protection is disabled.
Cache eviction-preferred-size configured is large
-----
Size    URL
-----

```

44 `http://ofqdn.cds.com/test_cache/test.html`

- Step 4** Clear the cache content in the web browser to make sure future requests are handled by the Service Engines instead of from the browser's local cache.
- Step 5** In the web browser, request the same content again (`http://rfqdn.cds.com/test_cache/test.html`). [Figure K-3](#) shows the initial URL request on the left and the new URL on the right.

**Figure K-3** Show Statistic Requests on NE-DEMO-SE1—Cached Content



- Step 6** View the HTTP request statistics again by entering the `show statistics web-engine` command.

```
NE-DEMO-SE1# show statistics web-engine
```

```
HTTP Request Info Statistics
```

```
-----
Num Lookups                : 1
Preposition Hit            : 0
External Hit               : 0
Cache Hit                  : 0
Cache Miss                 : 1
Partial Cache Hit          : 0
Cache Bypass               : 0
Live Miss                  : 0
Live Hit                   : 0
ASX Meta Response         : 0
```

```
HTTP Request Type Statistics
```

```
-----
Get Requests                : 1
Post Requests               : 0
Head Requests               : 0
Range Requests Received    : 0
Range Requests Sent        : 0
Revalidation Requests Received : 0
Revalidation Requests Sent : 0
Liveness Query             : 1
WMT(http) Redirected Requests : 0
Local Requests             : 0
Play Live Requests         : 0
Total Outgoing Requests    : 0
```

```
HTTP Authorization Statistics
```

```
-----
Authorization Allow        : 1
Authorization No Cache     : 0
Authorization Force Revalidate : 0
Authorization Deny        : 0
Authorization Rewrite      : 0
Authorization Resolve      : 0
```

```
HTTP Error Statistics
```

```

-----
Client Errors          :          0
Server Errors         :          0
Bad Requests          :          0

Statistics was last cleared on Thursday, 09-Sep-2010 16:15:52 PDT.

NE-DEMO-SE2# show statistics web-engine

HTTP Request Info Statistics
-----
Num Lookups           :          2
Preposition Hit       :          0
External Hit          :          0
Cache Hit             :          1
Cache Miss            :          1
Partial Cache Hit     :          0
Cache Bypass          :          0
Live Miss             :          0
Live Hit              :          0
ASX Meta Response     :          0

HTTP Request Type Statistics
-----
Get Requests          :          2
Post Requests         :          0
Head Requests         :          0
Range Requests Received :          0
Range Requests Sent   :          0
Revalidation Requests Received :          0
Revalidation Requests Sent :          0
Liveness Query        :          0
WMT(http) Redirected Requests :          0
Local Requests        :          0
Play Live Requests    :          0
Total Outgoing Requests :          0

HTTP Authorization Statistics
-----
Authorization Allow   :          2
Authorization No Cache :          0
Authorization Force Revalidate :          0
Authorization Deny    :          0
Authorization Rewrite :          0
Authorization Resolve :          0

HTTP Error Statistics
-----
Client Errors          :          0
Server Errors         :          0
Bad Requests          :          0

HStatistics was last cleared on Thursday, 09-Sep-2010 16:15:52 PDT.

```

In this case, NE-DEMO-SE2 served the request, and it is a cache hit scenario. The content was cached from the previous attempt, and now the same content is served from cache.



# Verifying the Windows Media Streaming Engine

This section consists of the following procedures:

- [Verifying Preingested Windows Media Content](#)
- [Verifying Dynamically Ingested Windows Media Content](#)
- [Verifying Windows Media Live Content Playback](#)

## Verifying Preingested Windows Media Content



### Note

Content must be preingested. See the “[Configuring Delivery Services](#)” section on page 5-1 for more information. Verify that the content has been pre-positioned by using the **show distribution object-status name-of-object** command.

**Step 1** On the client PC, start the Windows Media Player program.

**Step 2** Choose **File > Open URL**.

**Step 3** Enter the URL of the preingested content in the Open URL dialog box ([Figure K-4](#)) and click **OK**. In the example, this is “`rtsp://rfqdn.cds.com/test_prepos/test.wmv`.”

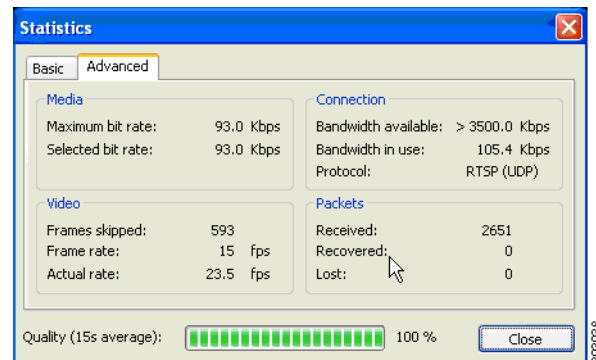
**Figure K-4** Open URL Dialog Box



The video begins to play.

**Step 4** To view the statistics on the video file, choose **View > Statistics** and then click the **Advanced** tab ([Figure K-5](#)).

**Figure K-5** Windows Media Player Statistics



- Step 5** To view the request flow, enter the **show statistics wmt streamstat** command on the SEs. In this case, the request is served from NE-DEMO-SE2.

```
NE-DEMO-SE1# show statistics wmt streamstat
Detailed Stream Statistics
=====

Incoming Streams:
=====
Stream-Id  Type  Source State  Bytes-Recd  Duration  Bandwidth  Server-IP  Url-Requested

Outgoing Streams:
=====
Stream-Id Client-IP  Type Transport Source State Pkts-sent Bytes-sent Duration BW Instance

NE-DEMO-SE2# show statistics wmt streamstat
Detailed Stream Statistics
=====

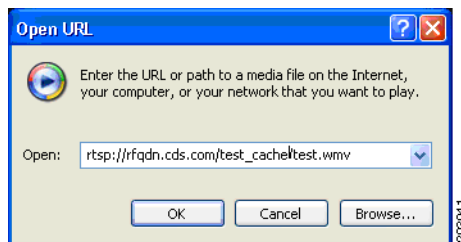
Incoming Streams:
=====
Stream-Id  Type  Source State  Bytes-Recd  Duration  Bandwidth  Server-IP  Url-Requested

Outgoing Streams:
=====
Stream-Id Client-IP  Type Transport Source State Pkts-sent Bytes-sent Duration BW
Instance
8895     171.70.222.171  VOD  NONE  LOCAL  Setup    0          0          0          0
test_prepos/test.wmv
```

## Verifying Dynamically Ingested Windows Media Content

- Step 1** On the client PC, start the Windows Media Player program.
- Step 2** Choose **File > Open URL**.
- Step 3** Enter the URL of content that has not been preingested in the Open URL dialog box (Figure K-6) and click **OK**. In the example, this is “rtsp://rfqdn.cds.com/test\_cache/test.wmv.”

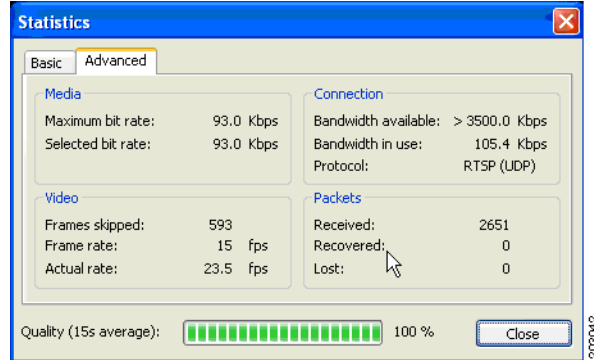
**Figure K-6** Open URL Dialog Box



The video begins to play.

- Step 4** To view the statistics on the video file, choose **View > Statistics** and then click the **Advanced** tab (Figure K-7).

Figure K-7 Windows Media Player Statistics



**Step 5** To view the request flow, enter the **show statistics wmt streamstat** command on the SEs. In this case, the request is served from NE-DEMO-SE2.

```
NE-DEMO-SE1# clear statistics wmt
NE-DEMO-SE1# show statistics wmt streamstat
Detailed Stream Statistics
=====
```

Incoming Streams:

=====

Stream-Id	Type	Source	State	Bytes-Recd	Duration	Bandwidth	Server-IP
Url-Requested							
20548	VOD	RMT_HTTP	Play	6113001	21	1012	3.1.13.6
rtsp://ofqdn.cds.com/test_cache/test.wmv							

Outgoing Streams:

=====

Stream-Id	Client-IP	Type	Transport	Source	State	Pkts-sent	Bytes-sent	Duration
BW Instance								
27521	3.1.4.14	VOD	RTSPT	RMT_HTTP	Play	388	3104000	19
549 test_cache/test.wmv								

```
NE-DEMO-SE2# clear statistics wmt
NE-DEMO-SE2# show statistics wmt streamstat
Detailed Stream Statistics
=====
```

Incoming Streams:

=====

Stream-Id	Type	Source	State	Bytes-Recd	Duration	Bandwidth	Server-IP
Url-Requested							
12079	VOD	RMT_RTSP	Play	2241074	23	1550	3.1.4.10
rtsp://ofqdn.cds.com/test_cache/test.wmv							

Outgoing Streams:

=====

Stream-Id	Client-IP	Type	Transport	Source	State	Pkts-sent	Bytes-sent	Duration
BW Instance								
12043	171.70.222.171	VOD	RTSPT	RMT_RTSP	Play	279	2232000	13
7201 test_cache/test.wmv								

## Verifying Windows Media Live Content Playback

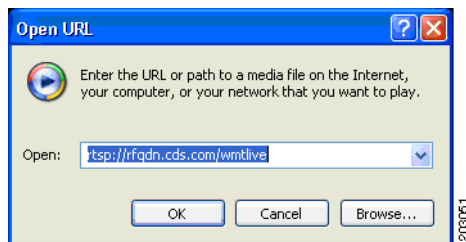


### Note

Each live program uses a live delivery service to deliver the live program. See the “[Configuring Programs](#)” section on page 5-40 for more information.

- Step 1** On the client PC, start the Windows Media Player.
- Step 2** Choose **File > Open URL**.
- Step 3** Enter the URL for the live program in the Open URL dialog box (Figure K-8) and click **OK**. In the example, this is “rtsp://rfqdn.cds.com/wmtlive.”

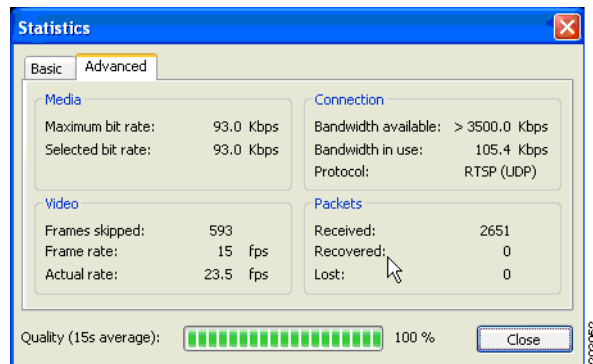
**Figure K-8** Open URL Dialog Box



The video begins to play.

- Step 4** To view the statistics on the video file, choose **View > Statistics** and then click the **Advanced** tab (Figure K-9).

**Figure K-9** Windows Media Player Statistics



- Step 5** To view the incoming and outgoing streams, enter the **show statistics wmt streamstat** command on the SEs streaming the content. In this case, the request is served from NE-DEMO-SE2.

```
NE-DEMO-SE1# show statistics wmt streamstat
```

```
Detailed Stream Statistics
```

```
=====
```

```
Incoming Streams:
```

```
=====
```

Stream-Id	Type	Source	State	Bytes-Recd	Duration	Bandwidth	Server-IP	Url-Requested
18872	LIVE	RMT_HTTP	Play	84150	241	288	171.70.22.171	http://171.70.222.171:0000

```

Outgoing Streams:
=====
Stream-Id Client-IP      Type Transport Source   State   Pkts-sent
Bytes-sent Duration  BW   Instance
18889     3.1.4.14      LIVE RTSP   RMT_HTTP Play    5393    7787492    233
288      8080

NE-DEMO-SE2# show statistics wmt streamstat
Detailed Stream Statistics
=====

Incoming Streams:
=====
Stream-Id Type Source   State Bytes-Recd Duration Bandwidth Server-IP Url-Requested
28772    LIVE RMT_RTSP Play  8205265   246      289      3.1.4.10
rtsp://3.1.4.10/wmt_proxy/rtsp&ofqdn.cds.com/wmtlive/__CDS/http&171.70.111.171&8080

Outgoing Streams:
=====
Stream-Id Client-IP      Type Transport Source   State   Pkts-sent Bytes-sent Duration
BW   Instance
28755     171.70.222.171 LIVE RTSPU   RMT_RTSP Play    5582    8060408    241
288      wmtlive

```

## Verifying the Movie Streamer Engine

This section includes the following procedures:

- [Preparing Movie Streamer Content for Ingest](#)
- [Verifying Preingested Movie Streamer Content](#)
- [Verifying Dynamically Ingested Movie Streamer Content](#)
- [Verifying Movie Streamer Live Content Playback](#)

## Preparing Movie Streamer Content for Ingest

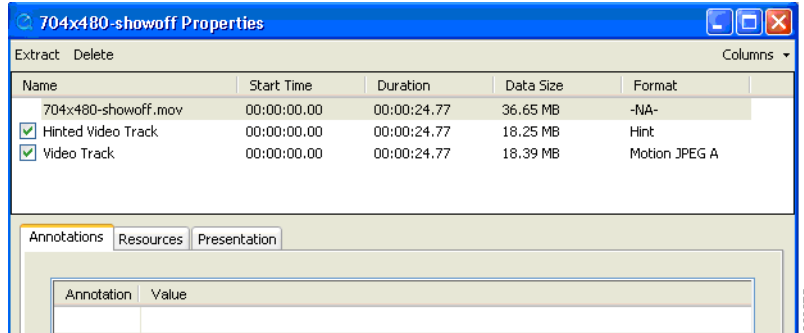
The Movie Streamer delivers hinted MPEG-4, hinted 3GPP, and hinted MOV files to clients over the Internet and mobile networks. Hinted files contain hint tracks, which store packetization information that tell the streaming server how to package content for streaming. Apple QuickTime Pro can be used to generate the hint tracks.



**Note** Verify that the content has been pre-positioned by using the **show distribution object-status name-of-object** command.

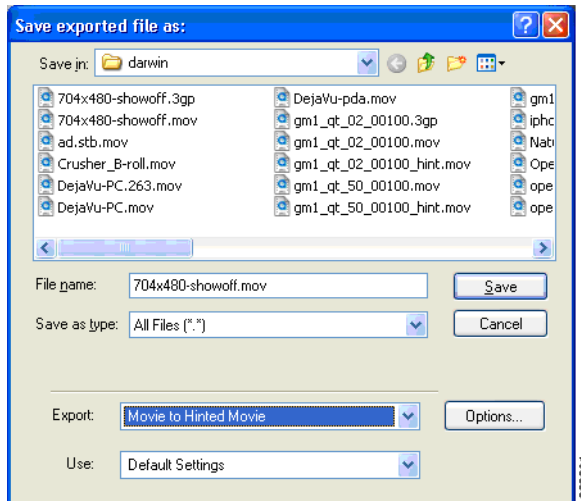
- Step 1** Launch Apple QuickTime Pro.
- Step 2** Choose **File > Open File**, and select a movie file to open.
- Step 3** Choose **Windows > Show Movie Properties**. If there is a Hinted Video Track present, as shown in [Figure K-10](#), then open the next movie file.

Figure K-10 Movie Properties Dialog Box



**Step 4** Choose **File > Export**. The Save Exported File dialog box is displayed (Figure K-11).

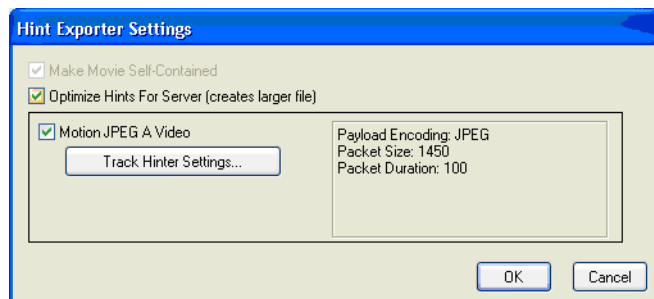
Figure K-11 Save Exported File Dialog Box



**Step 5** From the **Export** drop-down list, choose **Movie to Hinted Movie**.

**Step 6** Click **Options**. The Hint Exporter Settings dialog box is displayed (Figure K-12).

Figure K-12 Hint Exporter Settings Dialog Box



**Step 7** Check the **Make Movie Self-Contained** check box and the **Optimize Hints For Server** check box.

**Step 8** Click **OK**.

- Step 9** Click **Save** in the Save Exported File dialog box.  
The movie file is ready to be either preingested or dynamically ingested.

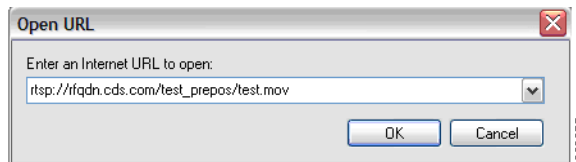
## Verifying Preingested Movie Streamer Content



**Note** Content must be preingested. See the “[Configuring Delivery Services](#)” section on page 5-1 for more information. Verify that the content has been pre-positioned by using the **show distribution object-status name-of-object** command.

- Step 1** On the client PC, start the Apple QuickTime Player.
- Step 2** Choose **File > Open URL**.
- Step 3** Enter the URL of the preingested content in the Open URL dialog box ([Figure K-13](#)) and click **OK**. In the example, this URL is “rtsp://rfqdn.cds.com/test\_prepos/test.mov.”

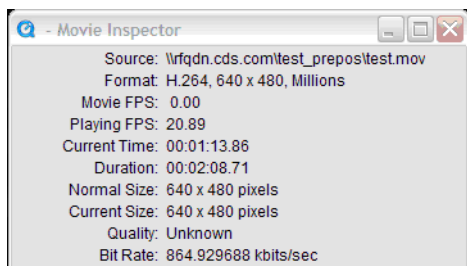
**Figure K-13** Open URL Dialog Box



The video begins to play.

- Step 4** To view the statistics on the video file, choose **Windows > Show Movie Inspector** ([Figure K-14](#)).  
The current statistics are displayed and updated as the video streams and plays.

**Figure K-14** QuickTime Player Statistics



- Step 5** To view the request flow, use the **show statistics movie-streamer all** command.

```
NE_DEMO-SE2# show statistics movie-streamer all
Movie Streamer Request Statistics
```

	Total
-----	-----
Current RTSP sessions:	0
Total RTSP sessions:	1
Current RIP connections:	0
Total RTP connections:	1

## CDN Related Statistics

```

-----
Preposition Hits:                1
  Cache Hits:                    0
  Cache Miss:                    0
Live Requests:                   0

```

## Cache Revalidation Statistics

```

-----
Fresh Content Requests:          0
Revalidated Requests:           0

```

## Movie Streamer Bandwidth Usage Statistics

```

-----
Total
-----
Current Incoming bandwidth:      0 bps
Current Outgoing bandwidth:      0 bps
Current Total bandwidth:         0 bps

Average Incoming bandwidth:      0 bps
Average Outgoing bandwidth:      0 bps
Average Total bandwidth:         0 bps

```

## By Type of Connection

```

-----
Unicast Incoming Bandwidth:      0 bps
Multicast Incoming Bandwidth:    0 bps
Unicast Outgoing Bandwidth:      0 bps
Multicast Outgoing Bandwidth:    0 bps

```

## By Type of Content

```

-----
Live Incoming Bandwidth:         0 bps
VOD Incoming Bandwidth:         0 bps
Live Outgoing Bandwidth:        0 bps
VOD Outgoing Bandwidth:        0 bps

```

## Overall Traffic

```

-----
Incoming Bytes:                  0 Bytes
Outgoing Bytes:                  2103939 Bytes
Total Bytes:                     2103939 Bytes

```

```

Incoming Packets:                0
Outgoing Packets:                1403
Total Packets:                   1403

```

## Movie Streamer Error Statistics

```

-----
Total
-----
Server Error
-----
Internal Error:                  0
Not Implemented:                 0
Server Unavailable:              0
Gateway Timeout:                0
Others:                          0

Client Error
-----
Bad Request:                     0
File Not Found:                  0
Session Not Found:               0
Method Not Allowed:              0

```



```

Not Enough Bandwidth:          0
  Client Forbidden:           0
    Others:                   0

Movie Streamer Performance Statistics
                               Total
-----
  CPU Usage:                   0.000000 %
  UpTime:                      5416 sec
Statistics were last cleared on Thursday, 25-Oct-2007 23:53:59 UTC.

```



**Note** In this example, current connections and bandwidth are all zero because the movie has finished playing at the time the statistics were displayed.



**Note** This example shows the full output for the **show statistics** command. All remaining examples for the Movie Streamer statistics show only the relevant information.

**Step 6** Play the movie again, and before it completes, display the statistics again.

As the statistics show, there are two current connections: 1 RTP and 1 RTSP.

```

NE_DEMO-SE2# show statistics movie-streamer all
Movie Streamer Request Statistics

```

```

                               Total
-----
Current RTSP sessions:         1
  Total RTSP sessions:         2
Current RTP connections:       1
Total RTP connections:         2

CDN Related Statistics
-----
  Preposition Hits:            2
  Cache Hits:                  0
  Cache Miss:                  0
  Live Requests:               0

Cache Revalidation Statistics
-----
  Fresh Content Requests:      0
  Revalidated Requests:        0

Movie Streamer Bandwidth Usage Statistics
                               Total
-----
Current Incoming bandwidth:    0 bps
Current Outgoing bandwidth:    0 bps
  Current Total bandwidth:     0 bps

Average Incoming bandwidth:    0 bps
Average Outgoing bandwidth:    863879 bps
  Average Total bandwidth:     863879 bps

```

...Omitted contents

```

Overall Traffic
-----
Incoming Bytes:                0 Bytes

```

```

Outgoing Bytes:          14490660 Bytes
Total Bytes:            14490660 Bytes

```

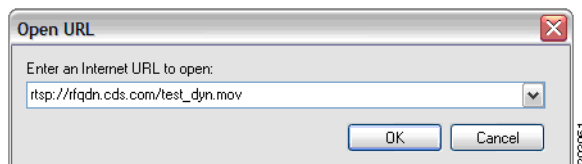
...Omitted contents

## Verifying Dynamically Ingested Movie Streamer Content

When content requested by a client is not in the CDS, it is dynamically ingested from the original source and streamed to the client by an SE.

- Step 1** On the client PC, start the Apple QuickTime Player.
- Step 2** Choose **File > Open URL**.
- Step 3** Enter the URL of a sample MOV file that has not been preingested into the CDS in the Open URL dialog box (Figure K-15) and click **OK**. In the example, this is “rtsp://rfqdn.cds.com/test\_dyn.mov.”

**Figure K-15** Open URL Dialog Box



The video begins to play.

- Step 4** To view the request flow, use the **show statistics movie-streamer all** command.

```

NE_DEMO-SE1# show statistics movie-streamer all
Movie Streamer Request Statistics

```

```

Total
-----
Current RTSP sessions:          1
Total RTSP sessions:           4
Current RIP connections:        1
Total RTP connections:         4

```

...Omitted contents

```

Movie Streamer Bandwidth Usage Statistics

```

```

Total
-----
Current Incoming bandwidth:    207115 bps
Current Outgoing bandwidth:    0 bps
Current Total bandwidth:      207115 bps

Average Incoming bandwidth:    199244 bps
Average Outgoing bandwidth:    207932 bps
Average Total bandwidth:      407176 bps

```

...Omitted contents

```

Overall Traffic
-----

```

```

Incoming Bytes:                12667891 Bytes

```

```

Outgoing Bytes:      12609164 Bytes
Total Bytes:        25277055 Bytes

NE_DEMO-SE2# show statistics movie-streamer all
Movie Streamer Request Statistics
                        Total
-----
Current RTSP sessions:      0
Total RTSP sessions:       0
Current RIP connections:    0
Total RTP connections:      3

Movie Streamer Bandwidth Usage Statistics
                        Total
-----
Current Incoming bandwidth: 194974 bps
Current Outgoing bandwidth: 0 bps
Current Total bandwidth:    194974 bps

Average Incoming bandwidth: 174557 bps
Average Outgoing bandwidth: 0 bps
Average Total bandwidth:    74557 bps

...Omitted contents

Overall Traffic
-----
Incoming Bytes:      13283705 Bytes
Outgoing Bytes:      0 Bytes
Total Bytes:         13283705 Bytes

...Omitted contents

```

## Verifying Movie Streamer Live Content Playback



### Note

Each live program uses a live delivery service to deliver the live program. See the [“Configuring Programs” section on page 5-40](#) for more information.

Live streaming of Movie Streamer content requires a Session Description Protocol (SDP) file. The SDP file used in this procedure is the following:

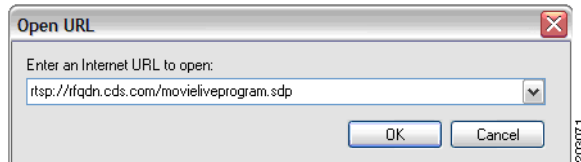
```

v=0
o=QTSS_Play_List 2079157989 2079176415 IN IP4 171.71.50.216
s=C:\Program Files\Darwin Streaming Server\Playlists\untitled\untitled.sdp
c=IN IP4 127.0.0.1
b=AS:94
t=0 0
a=x-broadcastcontrol:RTSP
m=video 0 RTP/AVP 96
b=AS:79
a=rtpmap:96 X-SV3V-ES/90000
a=control:trackID=1
m=audio 0 RTP/AVP 97
b=AS:14
a=rtpmap:97 X-QDM/22050/2
a=control:trackID=2
a=x-bufferdelay:4.97

```

- Step 1** On the client PC, start the Apple QuickTime Player.
- Step 2** Choose **File > Open URL**.
- Step 3** Enter the URL of the live program file in the Open URL dialog box (Figure K-16) and click **OK**. In the example, this is “rtsp://rfqdn.cds.com/movie/liveprogram.sdp.”

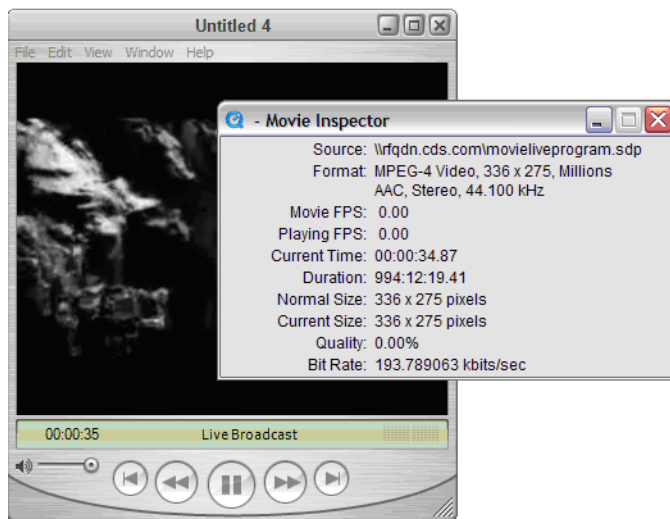
**Figure K-16** Open URL Dialog Box



The video begins to play.

- Step 4** To view the statistics on the video file, choose **Window > Show Movie Inspector** (Figure K-17). The current statistics are displayed and updated as the video streams and plays.

**Figure K-17** QuickTime Player Statistics



- Step 5** To view the incoming and outgoing streams, use the **show statistics movie-streamer all** command.

```
NE_DEMO-SE1# show statistics movie-streamer all
Movie Streamer Request Statistics
                                     Total
-----
Current RTSP sessions:                1
Total RTSP sessions:                  1
Current RTP connections:               1
Total RTP connections:                 3

Movie Streamer Bandwidth Usage Statistics
                                     Total
-----
Current Incoming bandwidth:           161526 bps
```

```

Current Outgoing bandwidth:      582640 bps
Current Total bandwidth:        744166 bps

Average Incoming bandwidth:     192102 bps
Average Outgoing bandwidth:     203980 bps
Average Total bandwidth:        396082 bps
...Omitted contents

Overall Traffic
-----
Incoming Bytes:                 4478769 Bytes
Outgoing Bytes:                 4499370 Bytes
Total Bytes:                    8978139 Bytes

...Omitted contents

NE_DEMO-SE2# show statistics movie-streamer all
Movie Streamer Request Statistics
Total
-----
Current RTSP sessions:         0
Total RTSP sessions:          0
Current RIP connections:       0
Total RTP connections:         1

...Omitted contents

Movie Streamer Bandwidth Usage Statistics
Total
-----
Current Incoming bandwidth:    175399 bps
Current Outgoing bandwidth:    0 bps
Current Total bandwidth:       175399 bps

Average Incoming bandwidth:    0 bps
Average Outgoing bandwidth:    0 bps
Average Total bandwidth:       0 bps

...Omitted contents

Overall Traffic
-----
Incoming Bytes:                 1248165 Bytes
Outgoing Bytes:                 1080984 Bytes
Total Bytes:                    2329149 Bytes

Movie Streamer Performance Statistics
Total
-----
CPU Usage:                      0.000000 %
UpTime:                          78375 sec
Statistics were last cleared on Friday, 26-Oct-2007 20:09:42 UTC.

```

## Verifying the Flash Media Streaming Engine

This section consists of the following procedures:

- [Verifying Flash Media Streaming Preingested Content](#)

- [Verifying Flash Media Streaming Dynamically Ingested Content](#)
- [Verifying Flash Media Streaming—Live Streaming](#)

## Verifying Flash Media Streaming Preingested Content



### Note

Content must be preingested. This was accomplished in the [“Configuring Delivery Services”](#) section on [page 5-1](#). Verify that the content has been pre-positioned by using the **show distribution object-status name-of-object** command.



### Note

Flash Media Streaming uses RTMP to stream live content by dynamic proxy. Configuration of live or rebroadcast programs is not required. When the first client requests live streaming content, the stream is created.

All RTMP calls for live content in the SWF file must be in the following format:

```
rtmp://rfqdn/live/path/foo.flv
```

In this format, *rfqdn* is the routing domain name of the Service Router, *live* is the required directory, and *path* is the directory path to the content file that conforms to the standard URL specification.

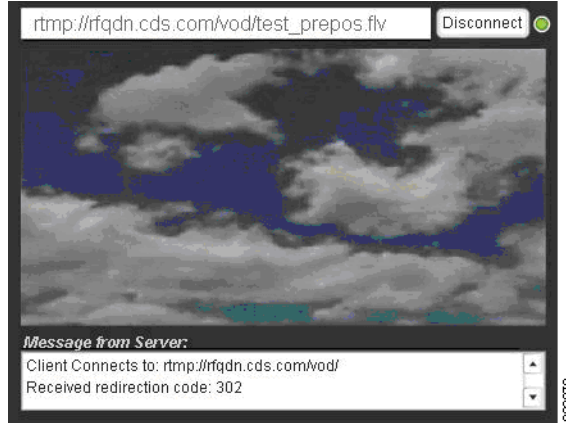
If you are unable to store the VOD content in the required “vod” directory on your origin server, you can create a VOD virtual path for all RTMP requests. All client requests for RTMP calls still use the `rtmp://rfqdn/vod/path/foo.flv` format for VOD streams, but the SE replaces the “vod” directory with the string specified in the **flash-media-streaming application-virtual-path vod map** command.

Use the **flash-media-streaming application-virtual-path vod map <mapping string>** command on each SE participating in a Flash Media Streaming delivery service. The mapping string variable accepts all alphanumeric characters and the slash (/) character, and can be from 1 to 128 characters. For example, to map the “vod” directory to “media” for the `go-tv-stream.com` origin server, use the **flash-media-streaming application-virtual-path vod map media** command.

To monitor live streaming, use the **show statistics flash-media-streaming** command and the **show flash-media-streaming livestreams** command.

- 
- Step 1** On the client PC, start the Adobe Flash Player.
- Step 2** Enter the URL of the flash file in the text box ([Figure K-18](#)) and click **Go**. In the example, this is “`rtmp://rfqdn.cds.com/vod/test_prepos.flv`.”
- The RTMP call is routed to a Service Engine by the Service Router.
- The FLV file has been preingested on the SEs. The video begins to play.

Figure K-18 Adobe Flash Player



**Step 3** To view the Flash Media Streaming statistics, enter the **show statistics flash-media-streaming** command on the SEs.

There is one concurrent connection on NE-DEMO-SE2, which means there is an active connection to this SE. The statistics also show a Preposition Hit of 1, which means there was preingested content being requested through this SE.

```
NE-DEMO-SE2# show statistics flash-media-streaming
Flash Media Streaming Statistics
Statistics were last cleared on Thursday, 06-Dec-2007 37:22:58 UTC.
```

```
Connections
-----
Current Connections
Total                :                1
VOD                  :                1
LIVE                 :                0
DVRCast              :                0
Proxy                :                0
Max Concurrent      :                1
Total Connections
Total                :                1
VOD                  :                1
LIVE                 :                0
DVRCast              :                0
Proxy                :                0

VOD Streaming
-----
Current Connections :                1
Total Connections  :                1
DownStream Bytes   :            880668
UpStream Bytes     :                0
DownStream BW      :                0 Kbps
Preposition Hit    :                1
External Hit       :                0
Cache Hit          :                0
Cache Miss         :                0
Proxy Case         :                0
Cache Hit Percentage :            0.00
Local Disk Reads   :                3
HTTP Based Reads   :                0
Bytes From Local Disk:            880668
```

```

Bytes Through HTTP      :          0
Ignore Query String    :          0

Live Streaming
-----
Current Connections    :          0
Total Connections     :          0
UpStream BW           :          0 Kbps
DownStream BW         :          0 Kbps
UpStream Bytes        :          0
DownStream Bytes      :          0
Downstream CDS-IS total conn.:    0
Ignore Query String    :          0

DVRCast Streaming
-----
Current Connections   :          0
Total Connections    :          0
UpStream BW          :          0 Kbps
DownStream BW        :          0 Kbps
UpStream Bytes       :          0
DownStream Bytes     :          0
Ignore Query String  :          0

Proxy Streaming
-----
Current Connections   :          0
Total Connections    :          0
UpStream BW          :          0 Kbps
DownStream BW        :          0 Kbps
UpStream Bytes       :          0
DownStream Bytes     :          0

Rules
-----
Action Allow         :          0
Action Block         :          0
Validate url Sign    :          0
URL Signing errors:
  Invalid Client     :          0
  Invalid Signature  :          0
  No signing         :          0
  Expired URL       :          0
Auth server validation:
  Auth Server Allow  :          0
  Auth Server Deny  :          0

SWF Verification :
-----
Requests
  Performed          :          0
  Failed             :          0
  Successful         :          0
  Bypassed           :          0
  Memory Hash Hit    :          0
  Memory Hash Calculated:    0
  Local SWF Hit      :          0
  Preposition SWF    :          0
  SWF Cache Hit      :          0
  SWF Cache Miss     :          0
  SWF Proxy          :          0
Errors
  SWF Fetch Error    :          0
  Local SWF Read Error :    0

```



```

Cached SWF Read Error : 0
SWF File not found : 0
SWF Incorrect Depth : 0
SWF Hash Match Fail : 0
SWF Hash Partial : 0
Edge SWF Cache Miss : 0
SWF Response Timeout : 0
SWF Client Unsupported: 0
SWF Wrong Version : 0

Error
-----
Disk Error
    File Open Error : 0
    File Read Error : 0
    File GetAttributes Error : 0
    File Close Error : 0

HTTP Error
    Invalid Error : 0
    Server Error : 0
    Media Not Found : 0
    Media Unauthorize : 0
    Invalid Request : 0
    Bad Gateway : 0
    Service Unavailable : 0
    Gateway Timeout : 0
    Request Failed : 0
    Invalid Response : 0
    Too many Redirect : 0
    Invalid Redirect : 0
    Invalid Cache Type : 0

Server
-----
Total UpStream BW : 0 Kbps
Total DownStream BW : 0 Kbps
Total UpStream Bytes : 0
Total DownStream Bytes : 880668
Total Server Bytes : 880668

Performance
-----
Server Up Time : 816 S
Mem Usage : 5 %
Max Mem Usage : 5 %
Total Messages Dropped: 0

Num of Active VOD Instances : 1
Num of Active Live Instances : 0
Num of Active DVRCast Instances : 0

Flash Video Cache Statistics
-----
Hits : 0
Misses : 0
Released : 0
Bytes in cache : 0
Bytes in use : 0
Disk Usage : 4096

```

## Verifying Flash Media Streaming Dynamically Ingested Content



### Note

Verifying dynamically ingested content for Flash Media Streaming includes cache miss scenarios and live streaming scenarios. Flash Media Streaming uses RTMP to stream live content by dynamic proxy. Configuration of live or rebroadcast programs is not required. When the first client requests live streaming content, the stream is created.

**Step 1** SSH to NE-DEMO-SE1 and use the **show cache content** command to verify there is no cached content.

```
NE-DEMO-SE2# show cache content
Max-cached-entries is set as 20000000
Number of cal cached assets: 0
Eviction protection is disabled.
Cache eviction-preferred-size configured is large
-----
Size          URL
-----
```

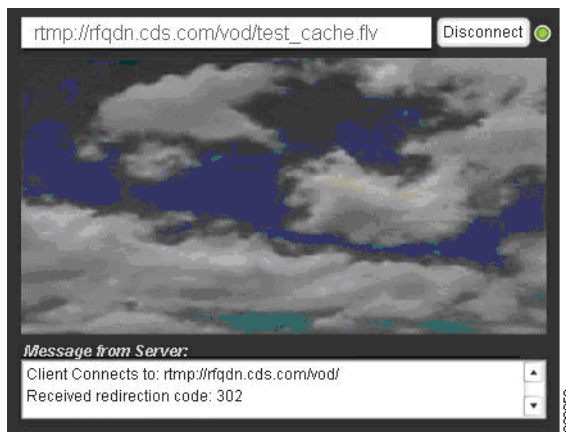
**Step 2** On the client PC, start the Adobe Flash Player.

**Step 3** Enter the URL of the flash file in the text box (Figure K-19) and click **Go**. In the example, this is “rtmp://rfqdn.cds.com/vod/test\_cache.flv.”

The RTMP call is routed to a Service Engine by the Service Router.

The FLV file has been cached on the SEs. The video begins to play.

**Figure K-19** Flash Player



**Step 4** To view the Flash Media Streaming statistics, enter the **show statistics flash-media-streaming** command on the SEs.

There is one concurrent connection on NE-DEMO-SE2, which means there is an active connection to this SE. The statistics also show a Cache Miss of 1, which means the content was not found on this SE.

```
NE-DEMO-SE2# show statistics flash-media-streaming
Flash Media Streaming Statistics
Statistics were last cleared on Thursday, 06-Dec-2007 37:22:58 UTC.

Connections
-----
Current Connections
```

```

Total          :          1
VOD           :          1
LIVE          :          0
DVRCast       :          0
Proxy         :          0
Max Concurrent :          1
Total Connections
Total         :          1
VOD          :          1
LIVE         :          0
DVRCast      :          0
Proxy        :          0

VOD Streaming
-----
Current Connections :          1
Total Connections  :          1
DownStream Bytes   :          0
UpStream Bytes     :          0
DownStream BW      :          0 Kbps
Preposition Hit    :          0
External Hit       :          0
Cache Hit          :          0
Cache Miss         :          1
Proxy Case         :          0
Cache Hit Percentage :          0.00
Local Disk Reads   :          2
HTTP Based Reads   :          1
Bytes From Local Disk:          587112
Bytes Through HTTP :          293556
Ignore Query String :          0

Live Streaming
-----
Current Connections :          0
Total Connections  :          0
UpStream BW        :          0 Kbps
DownStream BW      :          0 Kbps
UpStream Bytes     :          0
DownStream Bytes   :          0
Downstream CDS-IS total conn.:          0
Ignore Query String :          0

DVRCast Streaming
-----
Current Connections :          0
Total Connections  :          0
UpStream BW        :          0 Kbps
DownStream BW      :          0 Kbps
UpStream Bytes     :          0
DownStream Bytes   :          0
Ignore Query String :          0

Proxy Streaming
-----
Current Connections :          0
Total Connections  :          0
UpStream BW        :          0 Kbps
DownStream BW      :          0 Kbps
UpStream Bytes     :          0
DownStream Bytes   :          0

Rules
-----

```

```

Action Allow          :          0
Action Block         :          0
Validate url Sign    :          0
URL Signing errors:
  Invalid Client      :          0
  Invalid Signature   :          0
  No signing          :          0
  Expired URL         :          0
Auth server validation:
  Auth Server Allow   :          0
  Auth Server Deny   :          0

SWF Verification :
-----
Requests
  Performed          :          0
  Failed             :          0
  Successful         :          0
  Bypassed          :          0
  Memory Hash Hit    :          0
  Memory Hash Calculated:      0
  Local SWF Hit      :          0
  Preposition SWF    :          0
  SWF Cache Hit      :          0
  SWF Cache Miss     :          0
  SWF Proxy          :          0
Errors
  SWF Fetch Error    :          0
  Local SWF Read Error :      0
  Cached SWF Read Error :      0
  SWF File not found :      0
  SWF Incorrect Depth :      0
  SWF Hash Match Fail :      0
  SWF Hash Partial   :      0
  Edge SWF Cache Miss :      0
  SWF Response Timeout :      0
  SWF Client Unsupported:      0
  SWF Wrong Version  :      0

Error
-----
Disk Error
  File Open Error    :          0
  File Read Error    :          0
  File GetAttributes Error :      0
  File Close Error   :          0

HTTP Error
  Invalid Error      :          0
  Server Error       :          0
  Media Not Found    :          0
  Media Unauthorize  :          0
  Invalid Request    :          0
  Bad Gateway        :          0
  Service Unavailable :          0
  Gateway Timeout    :          0
  Request Failed     :          0
  Invalid Response   :          0
  Too many Redirect  :          0
  Invalid Redirect   :          0
  Invalid Cache Type :          0

Server
-----

```

```

Total UpStream BW      :                0 Kbps
Total DownStream BW    :                0 Kbps
Total UpStream Bytes   :                0
Total DownStream Bytes :            587112
Total Server Bytes     :            587112

```

## Performance

```

-----
Server Up Time        :            933 S
Mem Usage             :                5 %
Max Mem Usage         :                5 %
Total Messages Dropped:                0

```

```

Num of Active VOD Instances :        1
Num of Active Live Instances :        0
Num of Active DVRCast Instances :      0

```

## Flash Video Cache Statistics

```

-----
Hits                  :                0
Misses                :                0
Released              :                0
Bytes in cache        :                0
Bytes in use          :                0
Disk Usage            :            4096

```

**Step 5** To verify that the content has been cached after it was requested, enter the **show cache content** command.

```

NE-DEMO-SE2# show cache content
Max-cached-entries is set as 20000000
Number of cal cached assets: 1
Eviction protection is disabled.
Cache eviction-preferred-size configured is large
-----
Size      URL
-----
293556    http://ofqdn.cds.com/vod/test_cache.flv

```

## Verifying Flash Media Streaming—Live Streaming

Flash Media Streaming uses RTMP to stream live content by dynamic proxy. Configuration of live or rebroadcast programs is not required. When the first client requests live streaming content, the stream is created. There are no limits to the number of live streams other than the system load. Live streaming uses distributed content routing to distribute streams across multiple Service Engines.

**Step 1** Set up a Flash Media encoder. Enter the following information:

- FMS URL—Origin Server URL (Origin Server cannot be a CDS device.)
- Stream—Stream name for the client's request
- Video—Choose VP6 or H.264

**Step 2** Click **Start** to publish the stream to the Origin Server.

**Step 3** In a web browser on the client PC, enter the URL `rtmp://<edge SE IP address>/live/<publish stream name>`.

For example, if the URL was `rtmp://Temp4.fmslive.com/live/livestream`, *Temp4* is the SE assigned under the delivery service, the *live* directory indicates that it is a live stream, and *livestream* is the published name on the Flash Media Encoder.

- Step 4** On the Edge SE enter the **show statistics flash-media-streaming** command to view the Flash Media Streaming statistics.

```
NE-DEMO-SE2# show statistics flash-media-streaming
Flash Media Streaming Statistics
Statistics were last cleared on Thursday, 06-Dec-2007 37:22:58 UTC.
```

```
Connections
-----
Current Connections
Total           :           1
VOD             :           0
LIVE           :           1
DVRCast        :           0
Proxy          :           0
Max Concurrent :           1
Total Connections
Total           :           3
VOD             :           0
LIVE           :           1
DVRCast        :           0
Proxy          :           0
```

...Omitted contents

```
Live Streaming
-----
Current Connections      :           1
Total Connections       :           1
UpStream BW             :           0 Kbps
DownStream BW           :           274 Kbps
UpStream Bytes          :           3194
DownStream Bytes        :          124362967
Downstream CDS-IS total conn.:           1
```

...Omitted contents

- Step 5** Enter the **show flash-media-streaming stream-status live** command.

```
NE-DEMO-SE2# show flash-media-streaming stream-status live
Display flash-media-streaming livestreams
```

Display maximum 4 applications, 8 forwarders, and 8 client stream info

```
Forwarder
-----
OsUrl           : rtmp://Temp4.se.fmslive.com/live/livestream
path2OS         : 2.225.2.65->2.225.2.62
reqFwdUrl       : rtmp://2.225.2.65/live/cds_fms_proxy/2.225.2.62/live/livestream
Upstream BW (Kbps) : 0
Downstream BW (Kbps) : 267
Upstream Bytes   : 3487
Downstream Bytes : 138278573
numClient        : 1
```

...Omitted contents

- Step 6** On the Content Acquirer in the delivery service, enter the **show statistics flash-media-streaming** command. The command shows one session connecting from the edge SE.

```

NE-DEMO-SE2# show statistics flash-media-streaming
Flash Media Streaming Statistics
Statistics were last cleared on Thursday, 06-Dec-2007 37:22:58 UTC.

      Current Connections
Total      :                1
VOD        :                0
LIVE       :                1
DVRCast    :                0
Proxy      :                0
Max Concurrent :            1
Total Connections
Total      :                1
VOD        :                0
LIVE       :                0
DVRCast    :                0
Proxy      :                0

...Omitted contents

Live Streaming
-----
UpStream BW      :                0 kbps
DownStream BW    :                274 kbps
UpStream Bytes   :                3487
DownStream Bytes :            149456451
Num of Instance Load :            1

...Omitted contents

```

**Step 7** Enter the **show flash-media-streaming stream-status live** command. The command shows the client request URL connecting from the edge SE.

```

NE-DEMO-SE2# show flash-media-streaming stream-status live
Display flash-media-streaming livestreams

Display maximum 4 applications, 8 forwarders, and 8 client stream info

Forwarder
-----
OsUrl           : rtmp://2.225.2.65/live/cds_fms_proxy/2.225.2.62/live/livestream
path2OS         : 2.225.2.62
reqFwdUrl       : rtmp://2.225.2.62/live/livestream
Upstream BW (Kbps) : 0
Downstream BW (Kbps): 261
Upstream Bytes   : 3337
Downstream Bytes : 155736798
numClient        : 1

```

