

# **OPERA**

## **Content Management Server (CMS)**

### **User Guide**

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## 1. Preview

Content Management Server (CMS) is a part of Open Platform for Multimedia Resource Exchange (OPERA). CMS is a management system for multimedia video chip files. CMS can update the updated list of universal multimedia resource link (UMRL) to Multimedia Name Server (MNS). It can also directly connect with Content Management Agent (CMA) to transfer video chip files to correct and suitable video streaming server by scheduling in OPERA.

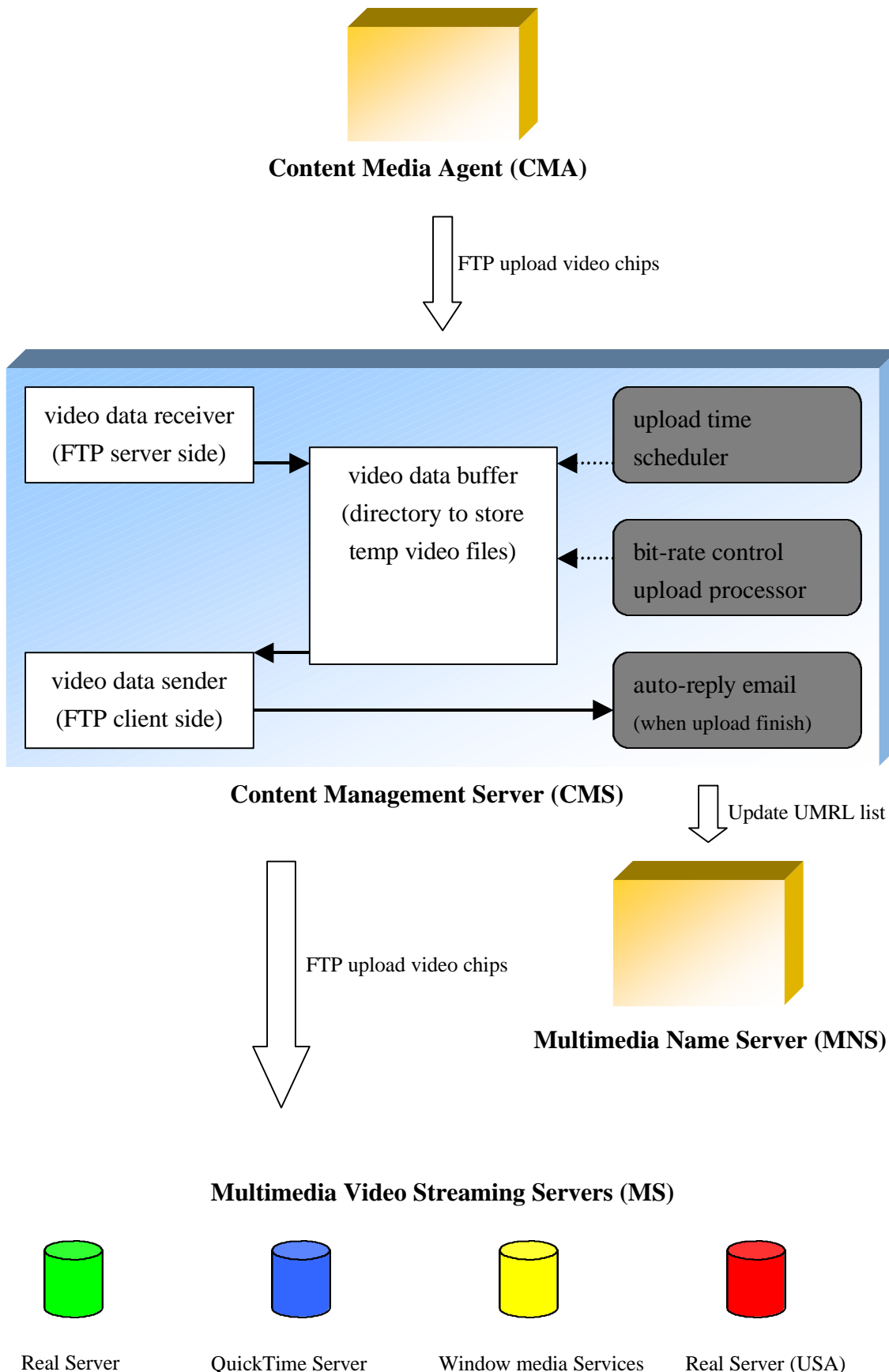
### Requirement:

The beta version 1.0 of the Content Management Server (CMS) is for Solaris 2.6(7) OS or Intel Platform PC which has been install Java 1.2 and Java mail 1.1.3.

If other platform such as Linux and Macintosh can support Java 1.2 and Java mail 1.1.3, those OS also can run CMS.

## 2. System Architecture

The following is the flow of CMS:



**About the components:****Content Management Server (CMS):**

Content Management Server (CMS) is a management system of video chip files. It divided into six components:

- a. video data receiver - FTP server to receive the files from the clients
- b. video data sender - FTP client to upload the files to correct server
- c. video data buffer - Receive files storage and waiting to send to video server
- d. upload scheduler - To schedule the time to upload to video server
- e. bit-rate controller - To do a bit-rate control when doing a upload process
- f. auto-reply email - When the upload processes are finish, it will email to clients

**Content Management Agent (CMA):**

Content Management Agent (CMA) is a GUI client program on multiple windows platforms allowing content managers (either in ICP or ISP) to easily maintain aggregates of their web sites and video clips.

As CMA is the bridge from Users to CMS and MNS server in an OPERA system, it provides helper functions.

Using CMA, a content provider can visually construct and associate their web sites on local storage and apply the OPERA umrl concept easily on their web pages to provide a distributed storage / delivery system for multimedia contents. As detail please see the user manual of Content Management Agent (CMA).

**Multimedia Name Server (MNS):**

Multimedia Name Server (MNS) function just like a domain name server (DNS). When there is an UMRL request to the MNS, MNS search the video list and reply to the client with his own configuration setting. MNS redirect the request of video chips to correct and suitable video streaming server.

**Multimedia Video Streaming Servers (MS):**

These media servers have installed different streaming format services such as Real Player streaming server, QuickTime streaming server, or Windows Media Services. These kind of servers maybe located in anywhere even at foreign country.

**About the programming flow:**

When a user design their web content with multimedia video chip files. They can do it separately with using web authoring software and FTP client software to upload their video chips to the streaming server. Or they can use CMA to check their UMRL content and send the video chip files to CMS.

CMS works as a FTP server to receive the video files form CMA. It will also upload an information file of all the UMRL contents for updating the MNS video list table. When CMS receive all the files, it will store it on a temperate directory. The upload scheduler will determine when to upload the files to the streaming server. Also, there is a matching process to find which file should upload to which server.

When it is on time in the upload scheduler setting, the files will be upload to the correct server which has already match by matching process. There is a bit-rate controller to keep the upload bit-rate remain in a low or constant transfer speed such that can take no effect on the streaming process on the server. Different video format should send to different streaming server such as Real Player server, QuickTime server, or Microsoft window media services.

When all the upload procedure are finish, CMS will send an update video list to the user MNS which already configured in CMS. MNS can reply and redirect to the client with update video URL.

Finally, CMS will make a log file to store the total time, process time, all upload files and download files and unexecuted files. User can also set CMS to send an email to him when all the processes are finished. User can check the file list or can upload another set of UMRL from CMA.

### 3. Configuration

There is a configuration text file for Content Management Server (CMS) called **cmsconfig**. It divided into three parts and a system parts for Internet Service Provider (ISP) users to easily setup and maintain.

The main parts are as the following:

- a. Information of the CMS
- b. Information of media servers
- c. CMS to Multimedia Name Server (MNS)
- d. CMS to media servers

There are some guidelines and example of each parts of the configuration. Users just need to fill the data into correct row.

a. Information of the CMS

The basic information of the cms, let the cma user easily connect to the cms server with correct hostname and port. The email server and email address are use for the cms to send the email when the upload process are finished. The basepath is a directory to store the upload files of each virtual host and users.

Guidelines:

<b>cmsid</b>	id of the content management server
<b>name</b>	name of the content management server
<b>port</b>	cms server port for cma to connect
<b>server</b>	hostname of the cms server for cma to connect
<b>basepath</b>	base path of the cms server, the temp directory to store the upload files.
<b>mailhost</b>	mailhost address for cms to send email to user
<b>email</b>	email address of cms, to be a sender

Example:

```
cmsid=1
name=CMS
port=8021
server=mns.hkcl.org
basepath=/export/home/kho/content
mailhost=mail.hkcl.org
email=info@hkcl.org
```

Information of media servers

The basic information of each media servers, provide these information so that cms can upload different video chips to different media server to delivery.

Guidelines:

<b>mediaid</b>	id of the media server
<b>name</b>	name of the media server
<b>server</b>	hostname of the media server
<b>basepath</b>	base path of the media server, the directory to store and delivery the video chips and file
<b>mediatype</b>	The media type of the video server
<b>format</b>	The format that the video server delivery

Example:

```
mediaid=1
name=Real
server=realserver.hkcl.org
basepath=/realcontents
mediatype=real
format=.rm
```

```
mediaid=2
name=QuickTime
server=qtserver.hkcl.org
basepath=/QT_HD/Movie
mediatype=quicktime
format=.mov
```

```
mediaid=3
name=MediaServer
server>windowmedia.hkcl.org
basepath=
mediatype=mediaplayer
format=.asf
```

b. CMS to Multimedia Name Server (MNS)

Provide MNS information for different user and different host to connect. When the user finish to upload their video chip files to CMS. Next, the CMS will upload those files to the media server and then need to pass the update video table to the MNS.

Guidelines:

<b>mnsid</b>	id of the multimedia name server
<b>server</b>	hostname of the mns
<b>website</b>	virtual host of the umrl files that the web site provide
<b>user</b>	login user of mns, confirm only right user can change the database or video matching table
<b>password</b>	login password to mns
<b>port</b>	mns server port for cms to connect

Example:

```
mnsid=1
server=ultra.hkcl.org
website=www.hkcl.org
user=opera
password=world
port=8888
```

```
mnsid=2
server=ultra.hkcl.org
website=www.hkcl.org
user=opera
password=world
port=8888
```

```
mnsid=3
server=ultra.hkcl.org
website=hkac.hkcl.org
user=opera
password=world
port=8888
```

c. CMS to media servers

Provide enough information for the cms user to connect to each media server.

Then they can upload the video chip files for the media server delivery.

Guidelines:

<b>userid</b>	id of the user in cms
<b>user</b>	user login name of the cms
<b>password</b>	login password to cms
<b>homeonly</b>	can user change to other directory rather than home path?
<b>homepath</b>	user home path in cms , this home path must combine with base path in cms
<b>email</b>	cms will send a email to user when the upload process are finish
<b>mediaserver - user</b>	user login name of media servers in order
<b>mediaserver - password</b>	user password of media servers in order
<b>mediaserver - homepath</b>	user home path in media servers in order

Example:

```
userid=1
user=richard
password=cyber
homeonly=true
homepath=/richard
email=kho@hkcl.org
mediaserver1=richard;cyber;/content
mediaserver2=richard;cyber;/content
mediaserver3=richard;cyber;/content
```

```
userid=2
user=kho
password=ken
homeonly=true
homepath=/kho
email=kho@hkcl.org
mediaserver1=kho;real;/kho
mediaserver2=kho;quicktime;/kho
mediaserver3=kho;media;/Kenneth/content
```

#### **4. Trouble Shooting and FAQ.**

About the trouble shooting and FAQ of CMS, there is a Java Class HELP file of CMS on the web site <http://www.hkcl.org/> . Or if you have any counter problem on OPERA, you are welcome to go to our web site to get your information.