

IBM Content Manager VideoCharger for
Multiplatforms



Administrator's Guide and Reference

Version 8 Release 1

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Multiplatforms



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Version 8 Release 1

Note

Before using this information and the product it supports, read the information in "Notices" on page 185.

First Edition (May 2002)

This edition applies to Version 8 Release 1 of IBM® Content Manager VideoCharger™ for Multiplatforms (product number 5724-B42) and to all subsequent releases and modifications until otherwise indicated in new editions. This edition replaces SC27-0871-00.

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About this guide

The *IBM VideoCharger Administrator's Guide and Reference* describes how to install, configure, and administer VideoCharger for AIX[®] and Windows[®] 32-bit operating systems that include Microsoft[®] Windows NT[®] 4.0 and Windows 2000.

Who should use this guide

This guide is for system administrators who are familiar with either AIX or Windows operating systems and know how to manage a network environment.

How to use this guide

The following conventions are used in this guide:

bold	Identifies commands, flags, keywords, files, directories, and other items whose names are predefined by the system.
<i>italics</i>	Identifies parameters with actual names or values that you must supply.
monospace	Identifies examples of specific data values, examples of text similar to what you might see displayed, examples of portions of program code similar to what you might write, messages from the system, or information you should actually type.

The general term “Windows” applies to Microsoft Windows NT 4.0 and Windows 2000.

Information in this guide applies to both the VideoCharger Server for AIX and the VideoCharger Server for Windows unless specifically indicated otherwise. Information pertaining only to AIX is entitled “... on AIX” or **For AIX**. Information pertaining only to Windows is entitled “... on Windows” or **For Windows**.

Make sure to examine the VideoCharger readme file for additional information.

- **For AIX:** See `/usr/lpp/avs/README.vc`.
- **For Windows:** See `install-directory/readme.txt` where `install-directory` is the directory in which you installed the VideoCharger.

Product publications

You can view the following documentation from the VideoCharger Web site at <http://www.ibm.com/software/data/videocharger/library.html>:

- *Administrator's Guide and Reference* (this guide)
- *Programmer's Reference*, for those who want to write their own interface to VideoCharger.
- *IBM VideoCharger 101*

To install the Acrobat Reader, download the appropriate program files for your operating system from <http://www.adobe.com/products/main.html> and follow the provided installation instructions.

Related publications

The following publications contain information related to VideoCharger operating platforms:

For AIX:

- *AIX Installation Guide*
- *AIX System Management Guide: Communications and Networks*
- *AIX System Management Guide: Operating System and Devices*
- *AIX Commands Reference*
- *IBM Internet Connection Secure Server for AIX: Up and Running*, if you are running this product as your Web server
- *NetView® for AIX Administrator's Guide*, for those that wish to manage the network used by the VideoCharger
- *AIX Problem Solving Guide and Reference*, for general information on trace, dump, and other problem-solving tools
- *Performance Tuning Guide*, for information on AIX general performance guidelines and commands
- *IBM HTTP Server V1.3.12.2 powered by Apache User Assistance*

For Windows NT:

- *Windows NT Server Networking Guide*
- *Windows NT Server Internet Guide*
- *Windows NT Server Resources Guide*

For Windows 2000:

- *Windows 2000 Server Networking Guide*
- *Windows 2000 Server Internet Guide*
- *Windows 2000 Server Resources Guide*

How to send your comments

Your feedback helps IBM to provide quality information. Send any comments that you have about this book or other VideoCharger documentation. You can use either of the following methods to provide comments:

- Send your comments from the Web. Visit the online Readers' Comment Form (RCF) for IBM Data Management page at:

<http://www.ibm.com/software/data/rcf>

You can use the page to enter and send comments.

- Send your comments by e-mail to comments@vnet.ibm.com. Be sure to include the name of the product, the version number of the product, and the name and part number of the book (if applicable). If you are commenting on specific text, please include the location of the text (for example, a chapter and section title, a table number, a page number, or a help topic title).

What's new in VideoCharger Version 8.1

VideoCharger Version 8.1 for AIX adds the following functionality to Version 7.1:

Accessibility features. Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. See "Accessibility features" on page 183 and the VideoCharger Player online help for complete information.

Automatic configurations in the data pump/controller. VideoCharger Version 8.1 now automatically configures the AIX shell inetd subserver (if needed) and creates the .rhosts file whenever you install the data pump on the same machine as the controller. See "Configuring the data pumps" in *Planning and Installing VideoCharger*.

Automatic Distributed Computing Environment remote procedure call (DCE RPC) configuration. VideoCharger Version 8.1 now automatically configures the DCE RPC client. You can customize your own DCE RPC client configuration before or after installing VideoCharger using the directions in "Configuring the DCE RPC client" on page 5.

Bundled controller and data pump. VideoCharger Version 8.1 now automatically installs one data pump with the control server when you install a controller bundle. See "Deciding the best VideoCharger Server configuration" in *Planning and Installing VideoCharger*.

Change stripe group attributes. VideoCharger Version 8.1 now allows you to change stripe group attributes. You can either use the revised configuration and administration form (see Chapter 1, "Configuring VideoCharger on AIX" on page 3) or the chvssg AIX command (see "chvssg command" on page 42).

Export an asset. VideoCharger Version 8.1 can now export assets from the VideoCharger Server to any machine with an FTP daemon. You can either use the revised content management form (see "Managing assets" on page 7) or the vsexport AIX command (see "vsexport command" on page 76).

License VideoCharger during installation. VideoCharger Version 8.1 now lets you accept the VideoCharger license *during* installation instead of before the installation. See "Installing VideoCharger on AIX" in *Planning and Installing VideoCharger*.

MPEG-4 support. VideoCharger Version 8.1 now supports MPEG-4. See *Planning and Installing VideoCharger*.

Multimedia File System (MMFS) dependency eliminated. VideoCharger Version 8.1 can now store assets using any file system, not just MMFS. See "Determining AIX file system requirements" in *Planning and Installing VideoCharger*.

System restart unnecessary. After you install VideoCharger Version 8.1 on your AIX machines, you are not required to restart the machines.

Tivoli® readiness. Tivoli Storage Manager (TSM) can now help administer and monitor VideoCharger Version 8.1 components. See "Integrating VideoCharger in a Tivoli environment" in *Planning and Installing VideoCharger*.

Unicode support. VideoCharger Version 8.1 now supports unicode.

VideoCharger Version 8.1 for Windows adds the following functionality to Version 7.1:

Accessibility features. Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. See “Accessibility features” on page 183 and the VideoCharger Player online help for complete information.

Export an asset. VideoCharger Version 8.1 can now export assets from the VideoCharger Server to any machine with an FTP daemon. You can either use the revised content management form (see “Managing assets” on page 99) or the vsexport Windows command (see “vsexport command” on page 142).

MPEG-4 support. VideoCharger Version 8.1 now supports MPEG-4. See *Planning and Installing VideoCharger*.

Player Software Development Kit available. The VideoCharger Version 8.1 installation launchpad now lets you install the VideoCharger Player Software Development Kit. See “Installation from CD-ROM launchpad” in *Planning and Installing VideoCharger*.

Tivoli readiness. Tivoli Storage Manager (TSM) can now help administer and monitor VideoCharger Version 8.1 components. See “Integrating VideoCharger in a Tivoli environment” in *Planning and Installing VideoCharger*.

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Chapter 1. Configuring VideoCharger on AIX

As your needs change, you must update your configuration. When you add an adapter, for example, you must update your configuration to reflect the additional ports available.

Use the Configuration and Administration page on your VideoCharger admin Web site to update or alter the following components of the complex:

- Data pumps
- Ports
- Stripe groups
- Application server

In addition, you can change the configuration of your VideoCharger components as directed in “Changing your VideoCharger Server configuration on AIX”. To change the configuration of your Distributed Computing Environment remote procedure call (DCE RPC) client, refer to “Configuring the DCE RPC client” on page 5. You can also back up VideoCharger as instructed in “Backing up your VideoCharger system” on page 5.

Attention: VideoChargerVersion 8.1 will not function properly if your system uses a BSD style configuration on any of its networking subsystems.

Changing your VideoCharger Server configuration on AIX

You can change the configuration of your VideoCharger components in the following ways:

- “Changing the system host name”
- “Changing from option 1 to option 2” on page 4
- “Adding additional data pumps” on page 4

Changing the system host name

To change your VideoCharger system’s host name, re-configure the system by completing the following steps:

1. Change the host name or the IP address (or both).
2. Change the data pump host information by entering:

```
chvsdp -l dp1 -h new_hostname -f new_hostname
```

where *new_hostname* represents the new host name. For more information, refer to the `chvsdp`, `chvsas`, `rmvsport`, and `mkvsport` commands in Chapter 4, “System management commands for VideoCharger on AIX” on page 19.

3. Change the application server host information by entering:

```
chvsas -l DEFAULT -i new_hostname
```

4. Stop the VideoCharger server by entering:

```
stopsrc -g vs
```

5. Restart the system to reset DCE RPC mapping.

6. Remove the old port by entering:

```
rmvsport -l old_port_name  
rmvsport -l old_port_name -d
```

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If you have more than one interface, repeat these two commands for each one.

7. Remake the port with the new interface name by entering:

```
mkvSPORT -l new_interface_name -h physical_port -t porttype -p dpname
```

where *new_interface_name* represents the new interface name, *physicalport* represents the AIX port device name, *porttype* represents the port type, and *dpname* represents the logical name of the data pump.

You might also want to change from one type of configuration to another. The following sections outline the tasks involved in changing from one option to another.

Changing from option 1 to option 2

You can offload activity from the presentation formatter server/controller by establishing a separate presentation formatter server. This presentation formatter server will be your primary Web server, while the Web server that continues to run on the controller will be the Web server for VideoCharger administration or content loading. Again, the easiest way to establish a presentation formatter server is to maintain the existing machine as your controller, and configure the additional machine as the Web interface.

1. Install the Media-Defined and Video-Pres-Formatter bundle on the machine that will serve as the presentation formatter server. See "Installing VideoCharger on AIX" in *Planning and Installing VideoCharger*.
2. Configure the presentation formatter as discussed in *Planning and Installing VideoCharger*.
3. In the Configuration and Administration page under Change Configuration, click **Add/Change/Remove Systems** to change the host name of the presentation formatter server.
4. Use FTP to copy the ISC.INI file from the controller to the `/var/avs/config` directory on the new presentation formatter server.
5. Start the `vssy` daemon on the new presentation formatter server by entering the following command:

```
startsrc -g vs
```

The system is now operational and you can have your clients access the new server using the new Web address.

Adding additional data pumps

To add additional data pumps:

1. Install the Media-Defined and Video-Data-Pump bundle on the new system as described in "Installing VideoCharger on AIX" in *Planning and Installing VideoCharger*.
2. License the additional data pumps as instructed in "Licensing more than one data pump" in *Planning and Installing VideoCharger*.
3. Configure the data pump as discussed in *Planning and Installing VideoCharger*.
4. In the Configuration and Administration page under Change Configuration, click **Add/Change/Remove Systems** to add the new data pump.

The creation of the stripe group on the new data pump begins the cloning operation. The content on one of the existing data pumps is replicated to the new data pump. For this to work, the asset group must be active and at least one of the existing data pumps must be active. This cloning operation can take

a significant amount of time, depending upon the number of assets to copy and the current load on the systems and networks.

Configuring the DCE RPC client

The DCE remote procedure call (RPC) enables client-to-server communication. To customize the DCE RPC client configuration, complete the following steps:

1. Invoke SMIT as root with the `smit mkdce` fast path, then select the following menus:

```
Configure DCE/DFS Clients
  1 full configuration for this machine
```

2. Enter information for the following fields:

CLIENTS to configure

Specify List, then `rpc`.

CELL Name

Specify your local host name, such as `/.../unique_cell_name`.

Machine's DCE HOSTNAME

Specify your local host name.

MASTER SECURITY Server

Specify your local host name.

3. Use the default values listed for all other fields and press Enter.
4. When the configuration completes, press Enter to continue.
5. Click **Cancel** to return to the main DCE menu.
6. Select **DCE/DFS Start options**. A menu similar to the following appears:

```
Start DCE now                Yes
Start DCE at system restart  No
Clear DCE files at system reboot No
```
7. Change the value for "Start DCE at system restart" to yes.
8. Click **OK**.
9. Exit from SMIT.

Backing up your VideoCharger system

System backups serve as snapshots to ensure that your system configuration does not get lost. Given the storage requirements of assets, it is often not practical to back up them all up; however, you can keep records of your multimedia assets.

Recommendation: Back up your system when no loading or deleting of assets is occurring to ensure that the control server's catalog of assets is up to date.

For AIX VideoCharger, back up the following information:

- System configuration information regarding the VideoCharger complex using the Configuration and Administration page.
- System image (operating system and licensed program products) through `mksysb` system backup, in case the system becomes corrupted, or you want to transfer the configured VideoCharger software to another system. This backs up the control server catalog that contains a list of assets and the metadata about their attributes. This comprehensive backup is discussed in the *AIX System Management Guide: Operating System and Devices*.

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Check the VideoCharger Web site at
<http://www.ibm.com/software/data/videocharger/> for updates to backing up
your system.

Chapter 2. Managing VideoCharger content on AIX

You can manage AIX VideoCharger content in the following ways:

- “Managing content from your VideoCharger home page”
- “Managing content with commands” on page 11
- “Managing content with FTP” on page 11
- “Writing your own custom content loader” on page 13

You can also create additional content-loading IDs at “Creating additional content-loading IDs” on page 13.

Managing content from your VideoCharger home page

To manage your content using the Web forms, login to your VideoCharger admin home page and click **CONTENT MANAGEMENT**. You can then click **Manage Content** to add or manage your assets. Or, you can click **Manage Multicast** to schedule the broadcast of an asset.

Managing assets

From the Content Management page, click **Manage Content** and type in an asset name (for example, *dog.mpg*) in the asset field and select one of the following operations:

Add a new asset

Adds a new asset to the VideoCharger Server.

Modify information for an existing asset

Modifies the asset attributes. For example: bit rate, duration, file type, resolution, video standard, and stream type. See online help for details.

Delete an asset

Deletes an asset from the VideoCharger Server.

Stage an asset

Copies an asset from one server to another. For example, from the VideoCharger Server to another Server, from the VideoCharger Server to the Multimedia Archive, or vice versa. Ignore **Asset Group Name**. Selecting **Load and Play** allows other clients to stream the asset while the asset loads. **Load rate** specifies how many bits per second to load. Default is Best Effort mode (utilizing all available network bandwidth for transfer). If the asset's bit rate exceeds this value, the streaming terminates abnormally.

Export existing asset

Exports an asset from the VideoCharger Server to any machine with an FTP daemon. See online help for details.

List existing assets

If the **Asset Name** field is left blank, this option lists all available assets on the VideoCharger Server. If you specify an asset in the field, this option displays all attributes for the asset such as bit rate, duration, and type.

After you select an operation and click **Continue**, you might need to specify the asset's Server, name, and type if the Server has not done so already. Fields marked

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with an asterisk (*) are mandatory. Ignore **Asset Group** fields because they should always specify AG. See the online help for additional information for each of these operations.

Attention: Content Management routines use /tmp as a working directory to create Web forms. If this directory becomes full, performance problems can occur. You can fix this by removing unnecessary files from the /tmp directory or by extending the /tmp file system.

Multicasting assets

From the Content Management page, click **Manage Multicast**. You can schedule a *multicast* (streaming an asset to multiple clients at the same time) using the following operations:

List Displays the currently scheduled multicast jobs.

Add Schedules a multicast job. See “Scheduling a multicast event” for details.

Change

Modifies the settings for a scheduled multicast job.

Remove

Removes a scheduled multicast job.

Use the detailed online help for guidance in completing each form.

Scheduling a multicast event

To multicast an existing asset, click **Add** from the manage multicast page and fill in all asterisk-marked fields (shown in Figure 1 on page 9).

Add a Multicast Job

Supply information in the fields provided. Fields marked with "*" are required.

Asset Group Name *:

Asset Name *:

Content Description:

Destination Address *:

Destination Port *:

Bit Rate *:

Transport Protocol: RTP TCP

Send Interfaces *:

Join Interfaces:

Time To Live:

Loopback Transmission: Disabled Enabled

Transmission Time: Schedule Now

CC: YY: MM: DD: hh: mm: SS:

Loop Count:

Figure 1. Add a Multicast Job form

Field descriptions are as follows:

Asset Group Name (required)

Specifies the name of the asset group to which the asset belongs. For example, AG.

Asset Name (required)

Specifies the name of the asset. For example, spacewalk.mpg.

Content Description

Briefly describes the content. For example, space walk movie.

Destination Address (required)

Specifies the Internet Protocol (IP) address to which you want the asset played. You can enter either:

- A valid dotted decimal network address within the Class D Internet multicast group addresses. The multicast group addresses range from 224.0.0.0 through 239.255.255.255. However, do not use any addresses between 224.0.0.0 and 224.0.0.255 (inclusive) because they are reserved for routing protocols.
- A valid dotted decimal network address or host name within the Class A, B, or C Internet address range (such as 124.35.0.3) if you want to stream an asset to only one client.

Destination Port (required)

Specifies the User Datagram Protocol (UDP) or Transmission Control Protocol (TCP) port number to which the content is to be played. Although valid ports range from 0 to 65536, users should pick the user-developed range between 5001 and 65536.

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Bit Rate (required)

Specifies the bits per second to play the asset. For example, 50000 bits per second. To determine the asset's bit rate, select **List existing assets** for it in the Manage Content page.

Transport Protocol

Specifies the transport protocol for playing the asset. The default, Real Time Protocol (RTP), is required for multicasting. RTP also works for unicast jobs (streaming to one client). TCP only works on unicast jobs. If you select it, you must also specify a unicast address in the Destination Address field.

Send Interfaces (required for multicasting)

Specifies up to five valid IP interfaces, by name or by dotted-decimal form, to multicast the asset. Separate each interface by a space. The VideoCharger Server contacts the interfaces randomly until it reaches one that can successfully transmit the asset. To receive loopback packets, the sending interface has to join the multicast group and enable the loopback transmission.

Join Interfaces

Specifies up to five valid IP interfaces, by name or by dotted-decimal form, to join the multicast group specified in the Destination Address field. Joining a multicast group allows an interface to receive transmissions sent to the multicast group.

Time To Live

Specifies how many multicast routers a network packet can pass before termination. For example, a Time To Live (TTL) value of 16 indicates that the asset can survive 16 interim multicast routers (assuming they all use a TTL threshold of 1) in an attempt to reach the final destination. Each multicast router decrements the packet TTL by one. Whenever the packet TTL decrements below the router's TTL threshold, the router discards that packet.

Loopback Transmission

Specifies whether the multicast diagram is looped back to the interface that streamed the asset. The default is Disabled. When loopback is Disabled, packets do not loop back even if the interface joined the multicast group. If loopback is Enabled and the interface has joined the multicast group, the packets loop back to the interface.

Transmission Time

Schedules what time to stream the asset. If you choose to **Schedule** rather than multicast **Now**, fill in the following fields:

CC First two digits of the year (the century).

YY Last two digits of the year. Valid years (combining CC and YY) range from 1996 to 2037.

MM Month of the year. Ranges from 01 to 12.

DD Day of the month. Ranges from 01 to 31.

hh Hour of the day. Ranges from 00 to 23.

mm Minute of the hour. Ranges from 00 to 59.

SS Second of the minute. Ranges from 00 to 59.

Loop Count

Specifies how many times to play the asset. Default is 1. Input 0 to play the asset forever.

To submit the form, click **Add**. To clear the fields on the form, click **Reset**.

Managing content with commands

You can use content management commands either (a) at the AIX prompt, or (b) within AIX shell scripts for batch loading. The commands require vsadmin or vsloader authority.

Table 1. Common content management commands

Command	Purpose
vslist	Lists the attributes of an asset, lists all assets in default asset group, or lists all the existing asset groups.
vsload	Loads an asset from a host running an FTP daemon that supports the "size" command.
vsparse	Updates frame rate, play rate, duration, and type attributes for an asset.
vsupdate	Updates an asset's attributes.
vsdelete	Deletes an asset.
vsstage	Stages (copies) an asset from one server to another.

For full details on all content management commands, refer to Table 1. For details about reading syntax statements, see "Reading syntax statements" on page 20.

Managing content with FTP

FTP can be used with the AIX VideoCharger Server to copy an asset to a data pump. FTP traditionally communicates with the ftp daemon, but, in the case of multimedia file transfer, FTP communicates with a special video import daemon (VIP). The VIP runs alongside the FTPd on the data pump and, unless reassigned through the /etc/services file, VIP will attempt to run on port 4324.

FTP requirements

1. You must know the password for the vsloader content-loading ID.
2. You must have read permission for any files that you are going to transfer to a VideoCharger.

The read and write permissions for files and directories on a remote host are determined by the login name used.

Using the site subcommand to add an asset and its attributes

Each piece of basic information relating to an asset, such as copy rate and encoding type, is called an *attribute*. The attributes for each file are stored in catalogs on the control server.

Requirement: You must use the binary transfer type to copy multimedia assets. The default transfer type for FTP is ASCII.

To add an asset and its attributes:

1. Make sure you are in the directory where the asset resides.

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2. Start an FTP session with the host (data pump) that is receiving the asset.
Important: You must indicate port 4324 because your FTP request needs to communicate with the special VIP daemon (rather than FTPd on the controller).

```
ftp
open hostname 4324
```

Enter the content loading ID (default is vsloader) and its password when prompted.

3. To ensure that your file is copied using binary image type, enter:
binary
4. To pass the attribute associated with the file, use the site subcommand:
site avs attr *attribute=value*

You can pass any of the following attributes:

title Name of the asset to be updated. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks ("). This attribute is required.

playrate Rate (in bits per second) to play the asset.

type Type of asset. For the valid values for the *type* attribute, see "vsload command" on page 66 for AIX.

framerate Number of frames per second.

assetgroup Name of the asset group.

copyrate Rate at which the asset will be written to disk (in bits per second).

duration Duration of the asset; for example, 01:30:20:14, where:

01	1 hour
30	30 minutes
20	20 seconds
14	14 frames

5. To copy the file to the VideoCharger, enter:
put Source_asset_filename

The file is placed in the default asset group (typically, ag0), unless you specify a different asset group using the site subcommand.

The following example shows how to use the FTP and site subcommand transfer an asset, for example, *A Room with a View*, along with its attributes.

Requirement: When you specify the attributes for the site subcommand, do not insert a space before or after the equal sign (=).

```
$ FTP VideoCharger1 4324
Connected to VideoCharger1.stl.ibm.com.
220 VideoCharger1.stl.ibm.com Multimedia Video Transfer
server (Version 4.1 Sat May 2 23 12:52:09 CST 1996) ready.
```



```

Name (datapump1:dee): vsloader
331 Password required for vsloader.
Password:
230 User vsloader logged in.
FTP> binary
200 Representation type is IMAGE.
FTP> site avs attr title="A Room with a View"
FTP> site avs attr playrate=1200000
FTP> site avs attr type=MPEG1+SYSSTR
FTP> put roomview.mpg
200 PORT command successful.
150 Opening data connection for roomview.mpg (128.11
4.4.99,14
12).
226 Transfer complete.
FTP> quit
211 Goodbye.
$

```

Deleting an asset

After you have established an FTP session, run the delete subcommand to remove an asset from the VideoCharger. Enter:

```
delete assetname
```

The following example shows how to use FTP to delete an asset, for example, *Supercop*, from VideoCharger1. The attributes for the asset are automatically deleted at the same time.

```

$ FTP VideoCharger1 4324
Connected to VideoCharger1.stl.ibm.com.
220 VideoCharger1.stl.ibm.com Multimedia Video Transfer
server (Version 4.1 Sat May 2 23 12:52:09 CST 1996) ready.
Name (datapump1:dee): vsloader
331 Password required for vsloader.
Password:
230 User vsloader logged in.
FTP> delete supercop
250 DELE command successful.
FTP> quit
221 Goodbye.
$

```

Listing assets

After you have established an FTP session, run the dir subcommand to list assets on VideoCharger in the specified asset group or the default asset group. Enter:

```
dir
```

Writing your own custom content loader

Write your own content loader using VideoCharger APIs if (a) you want a customized loader, or (b) you want to record assets directly from a stream.

Creating additional content-loading IDs

VideoCharger allows you to create additional content-loading IDs to track what a group of content creators have loaded onto the system. You can also create additional content-loading IDs on a data pump in the same way. To add content-loading IDs in SMIT:

1. Use the `smit mkuser` fast path to access the Create User menu.
2. In this menu, enter the information for the new user.

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Important: Select `vsasset` as the group, so that the ID is included in the content management group.

3. When you have finished making entries for the new user, select **Do** to add the user to the system.
4. You must also create Web administration IDs to match each new AIX ID, as detailed in "Changing passwords for the Web administration IDs" in *Planning and Installing VideoCharger*.
5. Edit the `/etc/http.conf` file and add the new user ID on the same lines where `vsloader` occurs. For more information, see *IBM Internet Connections Secure Server for AIX: Up and Running*.
6. Stop and restart the Web server.

To create Web administration IDs for Netscape FastTrack Server, see "Manually configuring Netscape FastTrack server" in *Planning and Installing VideoCharger*.

Chapter 3. Monitoring the VideoCharger Server on AIX

You can monitor the performance and check the status of your VideoCharger Server using AIX tools. For information about standard system commands and general performance guidelines, see the *AIX Performance Tuning Guide*.

You can use existing AIX resources to monitor VideoCharger on AIX. The following sections explain:

- “Monitoring VideoCharger performance”
- “Getting status with the system resource controller”
- “Network managing with SNMP-based tools”
- “Enabling optional NetView for AIX” on page 16
- “Configuring the snmpd.conf file” on page 17

Monitoring VideoCharger performance

You can monitor your overall system performance using either AIX commands or performance-monitoring tools. This section focuses on available tools. For information on commands shown in Table 2, see the *AIX Performance Tuning Guide*.

Tip: Keep usage below 80% for the best performance.

Table 2. AIX commands for monitoring your server

Command	Purpose	Location
<code>iostat</code>	Disk I/O and CPU usage.	<code>bos.acct</code> package
<code>lssrc</code>	Subsystem status.	
<code>vmstat</code>	Memory and CPU usage.	
<code>netstat</code>	Network I/O information.	<code>bos.net.tcp.client</code> package
<code>netpmon</code>	Network I/O information.	<code>perfagent.tools</code> package

Getting status with the system resource controller

Use the `lssrc` command to obtain subsystem status. For a list of subsystems, see “Starting and stopping VideoCharger components” in *Planning and Installing VideoCharger*.

To obtain information about all subsystems, enter:

```
lssrc -g vs
```

To obtain information about a particular subsystem, enter:

```
lssrc -s subsystemname
```

Network managing with SNMP-based tools

VideoCharger supports the Simple Network Management Protocol (SNMP), a TCP/IP-based protocol that is widely used to manage network-attached devices. SNMP support includes a management agent and Management Information Base (MIB) extensions that follow the SNMP used in AIX.

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For VideoCharger, SNMP is automatically enabled, and provides status information about the control server, and data pump or pumps.

Tip: SNMP does not monitor the activity of the application server; use the `lssrc` command to monitor it.

Network-based system management is made easier by applications such as NetView for AIX, which provide tools for viewing, monitoring, and responding to information provided by SNMP. Separately purchasable, NetView for AIX is a comprehensive family of network management tools that allows you to manage your entire network, including most workstations.

The graphical interface for NetView for AIX provides the ability to:

- Invoke network configuration, fault, security, and performance-management functions
- Manage SNMP Management Information Base (MIB) information
- Monitor and graph network performance statistics
- View and modify network maps
- View problems and changes in the network as they occur

For VideoCharger, it is best to run NetView for AIX on a separate machine.

Enabling optional NetView for AIX

Use FTP to enable NetView for AIX for VideoCharger by following these steps on the system management workstation where NetView for AIX is installed:

1. Enter `cd /usr/OV/snmp_mibs`
2. Connect to the controller by entering:
`FTP controller_hostname`
3. Log in as root user.
4. Change the directory by entering:
`cd /usr/samples/snmpd`
5. Get the four MIB files by entering:
`get ibm-vs.my ibm-vs.mib`
`get ibm-vs.cs.my ibm-vs.cs.mib`
`get ibm-vs.de.my ibm-vs.de.mib`
6. Exit FTP by entering:
`quit`
7. Change file permission mode for the four MIB files by entering:
`chmod 444 ibm-vs.mib`
`chmod 444 ibm-vs.cs.mib`
`chmod 444 ibm-vs.de.mib`
8. Change ownership to bin for the four MIB files by entering:
`chown bin.bin ibm-vs.mib`
`chown bin.bin ibm-vs.cs.mib`
`chown bin.bin ibm-vs.de.mib`

You must also configure the `/etc/snmpd.conf` file if you are going to use SNMP to set MIB values. See “Configuring the `snmpd.conf` file” on page 17 for further information.

For assistance with the following tasks, see *NetView for AIX Administrator's Guide*.

- Starting NetView for AIX
- Loading the MIBs to NetView for AIX
MIBs must be loaded in the order indicated in Step 8.
- Using the MIB browser

Configuring the `snmpd.conf` file

To use the set capabilities of the VideoCharger MIB files, you must add one entry to the `etc/snmpd.conf` file on each VideoCharger Server.

The `community` entry specifies the communities, associated access privileges, and MIB views that the **snmpd** agent allows. For example:

```
community vsadmin hostname NetMask readWrite
```

hostname

Host name of the NetView management workstation

NetMask

Name of the network mask of the NetView management workstation, in dotted decimal notation

The `community` entry can be placed anywhere in the `snmpd.conf` file, because there is no order dependency.

After you add the line to the `snmpd.conf` file, you must refresh to make the `community` entry active. To refresh, enter:

```
refresh -s snmpd
```

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Chapter 4. System management commands for VideoCharger on AIX

The following chapters of this book contain lists of commands available for configuring and managing your server. Although some commands can be entered by simply typing one word, other commands use flags and parameters. Each command has a syntax that designates the required and optional flags and parameters. The general format for a command is:

```
CommandName flags parameters
```

Some general rules about commands are:

- To run a command, type the command name at the system prompt, and press Enter.
- After the command name, there can be a number of flags. Flags are also called *options*. Flags are separated by spaces or tabs and usually start with a hyphen (-). For example, in the following command:

```
mkvsdp -d
```

mkvsdp is the command name and -d is the flag.

- After the command name, there can be a number of flags, followed by parameters. Parameters are also called *arguments* or *operands*. Parameters specify information the command needs to run. If you don't specify a parameter, the command might assume a default value. For example, in the following command:

```
lsvspg -l pg0
```

lsvspg is the command name, -l is the flag, and pg0 is the parameter. This command displays the attributes of port group pg0. In the following example:

```
lsvspg
```

No parameter is given so the default value is assumed and all existing port groups are listed.

For parameters that are or contain a numeric value, the number is interpreted as a decimal integer, unless otherwise specified.

- Spaces between commands, flags, and parameters are significant.
- Two commands can be entered on the same line by separating the commands with a semicolon (;). For example:

```
$ CommandOne;CommandTwo
```

The commands are run sequentially.

- Commands are case sensitive, so mkvssg is not the same as MKVSSG or Mkvssg.
- A very long command can be entered on more than one line by using the backslash (\) character. A backslash signifies line continuation. The following example is one command that spans two lines:

```
$ mkvsdp -l dp1 -h amelia -i usr1 \      (press Enter)
> -w pw -f myhost -d                    (the > prompt appears)
```

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The > character is your secondary prompt (\$ is the non-root user's default primary prompt), indicating that the current line is the continuation of the previous line.

Reading syntax statements

Syntax statements tell you how to enter commands from the command line. The statements consist of symbols such as brackets ([]), braces ({}), and vertical bars (|).

The following conventions are used in the command syntax statements:

- Items that must be entered literally on the command line are in **bold**. These include the command name, flags, and literal characters.
- Items representing variables that must be replaced are in *italics*.
- Parameters not enclosed in brackets are required.
- Parameters enclosed in brackets are optional.
- A vertical bar signifies that you choose only one parameter. For example, a | b indicates that you can choose a or b.
- Ellipses (...) signify that the parameter can be repeated on the command line.
- The hyphen (-) represents standard input.

The following sample is a syntax statement for the rmvsag command:

```
rmvsag -l agname [ -d | -q ]
```

In this example, the -l flag and its parameter *agname* are required. Either the -d or the -q flag can be used, but neither one is required.

Displaying information about a command

The man command displays information about commands, subroutines, and files. The general format for the man command is:

```
man CommandName
```

System management commands on AIX

This section describes the system management commands for the VideoCharger Server for AIX.

Requirement: All system management commands require root authority and must be entered from the system where the Control Server resides.

Configuring system components

Use the following commands to configure system components:

mkvsdp	Create and configure a data pump
mkvspg	Create a port group
mkvsport	Create a port
mkvsag	Create an asset group
mkvssg	Create a stripe group
mkvsar	Define a Multimedia Archive to archive controller

mkvsas	Create a configuration information for an application server
---------------	--

Modifying system component attributes

Use the following commands to modify system component attributes:

chvsdp	Change data pump attributes
chvspg	Change port group attributes
chvsport	Change port attributes
chvsag	Change asset group attributes
chvsar	Change attributes of Multimedia Archive
chvsas	Change configuration information for an application server
chvssy	Change attributes of log file shared by Application Requestor and application server
chvssg	Change stripe group attributes

Removing system components

Use the following commands to remove system components:

rmvsport	Remove a port
rmvspg	Remove a port group
rmvssg	Remove a stripe group
rmvsag	Remove an asset group
rmvsdp	Remove a data pump
rmvsas	Remove a configuration information for an Application Server

Listing system components and attributes

Use the following commands to list system components and attributes:

lsvsdp	List data pump attributes
lsvspg	List port group attributes
lsvsport	List port attributes
lsvsag	List asset group attributes
lsvssg	List stripe group attributes
lsvsstat	List status information for a control server and data pump
lsvsar	List information for a Multimedia Archive
lsvsas	List configuration information for an application server
lsvssy	List attributes of log file shared by Application Requestor and application server

Recommended order to run commands

To configure the system, run the commands in the following sequence:

1. mkvsdp
2. mkvspg
3. mkvsport

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4. mkvsag
5. mkvssg

To remove the system, run the commands in the following sequence:

1. `rmvsport -l portname`
2. `rmvsport -l portname -d`
3. `rmvspg -l portgroup`
4. `rmvspg -l portgroup -d`
5. `rmvsag -l agname`
6. `rmvssg -l sname`
7. `rmvssg -l sname -d`
8. `rmvsag -l agname -d`
9. `rmvsdp -l dpname`
10. `rmvsdp -l dpname -d`

Tip: Before the ports, port groups, stripe groups, asset groups, and data pump can be removed, they must first be made inactive by running the appropriate command without the **-d** flag. For further details, see the command descriptions in the following sections.

mkvsdp command

Description

This command creates and configures the data pump.

Syntax

```
mkvsdp -l dpname -h dphost -i cmid -w cmpw [-p cmpport ] [-f cmhost ]
[-r bw ] [-n prognum ] [-d ] | -?
```

Flags

-l <i>dpname</i>	Logical name of data pump.
-h <i>dphost</i>	Network host name of data pump. Use the host name (for example, <i>eternal</i>), not the dotted decimal identification for the machine.
-i <i>cmid</i>	User ID for content management.
-w <i>cmpw</i>	User password for content management.
-p <i>cmpport</i>	Port number for content management transfers during content loading. The default is 4324..
-f <i>cmhost</i>	Network host name for asset transfers during content loading.

If you have two different network connections, it is possible that you might choose to use a different host name (network connection) for content loading from the network connection for Control Server to data pump communication. If no *cmhost* is specified, the default is the network host name of the data pump (*dphost*) that you enter for the **-h** flag.

-r <i>bw</i>	Real-time bandwidth limit is the maximum amount of CPU resources that you want dedicated to the delivery of assets. This is an actual hard limit and is expressed in megabits, kilobits, or bits per second. For example:
--------------	---

100m megabits per second (the *m* is not case-sensitive)

100000k
kilobits per second (the *k* is not case-sensitive)

1000000
bits per second

You can set the real-time bandwidth higher (or lower) to get maximum efficiency; you might set this as a temporary limit under unusual circumstances, for example. However, the system can go no higher than what you set. Requests that exceed the data pump's maximum are rejected.

Setting the real-time bandwidth limit higher provides more resource for real-time streams and paced content loading.

-n <i>prognum</i>	Port mapper program number used to access the data pump.
-d	Creates data pump in inactive state.
-?	Display help for this command.

Error Codes

This command fails with an error message if the *dpname* (logical name of data pump) is:

- Not unique
- Too long (It must be less than 40 characters.)

Examples

1. To create an active data pump called *dp0* with a host name of *eternal*, enter:

```
mkvsdp -l dp0 -h eternal -i usr1 -w pw -f myhost
```

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2. To create an inactive data pump called dp1 with a host name of amelia, with a real-time bandwidth setting, enter:

```
mkvsdp -l dp1 -h amelia -i usr2 -w pw -f myhost -r 80m -d
```

3. To activate (make available for use) the previously created Data Pump dp1, enter:

```
mkvsdp -l dp1
```

mkvspg command

Description

This command creates and activates a port group.

Syntax

```
mkvspg -l pgname -t pgtype [-f ] [-d ] | -?
```

Flags

-l <i>pgname</i>	Logical name of port group.
-t <i>pgtype</i>	Type of port group. Enter <code>inet</code> or <code>CL</code> (for content loading only).
-f	Indicator that port group <i>pgname</i> is to be the default. If the <code>-f</code> flag is used, <i>pgname</i> becomes the default and replaces the previously set default, if any. One default port group can exist for each port group type.
-d	Defines port group in inactive state.
-?	Display help for this command.

Error Codes

This command fails with an error message if any of the following conditions is true:

- *pgname* (logical name of port group) is not unique.
- *pgname* is too long. It must be less than 40 characters.
- *pgtype* (port group type) is not valid.

Examples

1. To create an active port group `pg0` of type `inet`, enter:

```
mkvspg -l pg0 -t inet
```
2. To create an inactive port group `pg1`, enter:

```
mkvspg -l pg1 -t inet -d
```
3. To activate (make available for use) the previously created port group `pg1`, enter:

```
mkvspg -l pg1
```

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mkvsport command

Description

This command creates and activates a port for a specific data pump and a specific port group.

Syntax

```
mkvsport -l portname -h physicalport -t porttype -p dpname [-g pgname ]  
[-r bw ] [-s streams] [ -d ] | -?
```

Flags

-l *portname*

If the system has a single network interface, this is the system's host name. If the system has multiple network interfaces, then this is the host name of the interface used for the specific port.

-h *physicalport*

AIX port device name. To obtain the AIX port device name, run the `lsdev` command with the `-C` flag. Locate the device name in the first column of the output. Enter:

```
lsdev -C
```

-t *porttype*

Type of port. Enter `inet` or `CL` (for content loading only).

-p *dpname*

Logical name of data pump.

-g *pgname*

Logical name of port group.

-r *bw*

Maximum amount of data that can be streamed over the network interface. Setting such a limit helps the system avoid overruns or overcommitting the capacity of the network adapter or downstream network capabilities.

You can set bandwidth differently for each port, based on that port's function. For example, you might set the limit lower for a port that handles content loading and playing. You might also set this as a temporary limit under unusual circumstances.

This is an actual hard limit and is expressed in megabits, kilobits, or bits per second. For example:

100m	megabits per second (the <i>m</i> is not case-sensitive)
100000k	kilobits per second (the <i>k</i> is not case-sensitive)
1000000	bits per second

-s *streams*

Defines maximum number of streams that can be supported by this port. The maximum is 32 K.

-d Defines port in inactive state.

-? Display help for this command.

Error Codes

This command fails with an error message if any of the following conditions is true:

- Port type is not valid.

- Data pump does not exist.
- Port group does not exist.
- *bw* (maximum port bandwidth) value is not valid.
- *portname* (logical name of port) is too long. It must be less than 40 characters.

Examples

1. To create an active port called `eternal` of type `inet` and belonging to data pump `dp0` and port group `pg0`, enter:

```
mkvsport -l eternal -h atm0 -t inet -p dp0 -g pg0
```
2. To create an inactive port called `eternal` of type `inet` and belonging to data pump `dp0` and Port Group `pg0`, enter:

```
mkvsport -l eternal -h atm0 -t inet -p dp0 -g pg0 -d
```
3. To activate (make available for use) the previously created port `eternal`, enter:

```
mkvsport -l eternal
```

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mkvsag command

Description

This command creates and activates an asset group.

Syntax

```
mkvsag -l agname [-f ] [-d ] | -?
```

Flags

-l <i>agname</i>	Logical name of asset group.
-f	Indicator that asset group <i>agname</i> is to be the default. If the -f flag is used, <i>agname</i> becomes the default and replaces the previously set default, if any.
-d	Defines asset group in inactive state. The asset group cannot be in an active state unless all of the stripe groups belonging to it are also in an active state; an asset group can be in an active state if it contains no stripe groups.
-?	Display help for this command.

Error Codes

This command fails with an error message if either of the following conditions is true:

- No memory available.
- *agname* (logical name of asset group) is too long. It must be less than 40 characters.

Examples

1. To create an active asset group called ag0, which is to be the default asset group, enter:
mkvsag -l ag0 -f
2. To create an inactive asset group called ag0, which is to be the default asset group, enter:
mkvsag -l ag0 -f -d
3. To activate (make available for use) the previously created asset group ag0, enter:
mkvsag -l ag0

mkvssg command

Description

This command creates and activates a stripe group for a specific data pump and a specific asset group. A stripe group can belong to only one asset group.

Requirements:

- A file system must exist and have the proper file ownership and permissions set before running this command.

Syntax

```
mkvssg -l sgname -n dpname -p tspath [-g agname ] [-d ] | -?
```

Flags

-l <i>sgname</i>	Logical name of stripe group.
-n <i>dpname</i>	Logical name of data pump.
-p <i>tspath</i>	File system path. For example, <i>/mmfs/sg0</i> .
-g <i>agname</i>	Logical name of asset group. If not specified, the default is used. If a default has not been set up, you receive an error message. See chvsag for information about how to set up a default asset group.
-d	Define stripe group in inactive state. The stripe group cannot be in an inactive state unless the asset group is also inactive.
-?	Display help about this command.

Error Codes

This command fails with an error message if any of the following conditions is true:

- Data pump does not exist.
- Asset group does not exist.
- *sgname* (stripe group name) is not unique.
- *sgname* is too long. It must be less than 40 characters.
- Asset group to which the stripe group belongs is active at the time the attempt is made to create an inactive stripe group.

Examples

1. To create an active stripe group called *sg0* belonging to Data Pump *dp0* and asset group *ag0*, enter:

```
mkvssg -l sg0 -n dp0 -p /mmfs/sg0 -g ag0
```
2. To create an inactive stripe group called *sg1* belonging to data pump *dp0* and asset group *ag0*, enter:

```
mkvssg -l sg1 -n dp0 -p /mmfs/sg0 -g ag0 -d
```
3. To activate (make available for use) the previously created stripe group *sg1*, enter:

```
mkvssg -l sg1
```

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mkvsar command

Description

This command defines the Multimedia Archive to the archive controller. The command only becomes available when you install the Multimedia Archive.

Syntax

```
mkvsar -l arname -h arhost -i cmid -w cmpw | -?
```

Flags

-l <i>arname</i>	Logical name of Multimedia Archive.
-h <i>arhost</i>	Full domain name of Multimedia Archive.
-i <i>cmid</i>	User ID for content management (for file transfer protocol).
-w <i>cmpw</i>	User password for content management.
-?	Display help for this command.

Error Codes

This command fails with an error message if either of the following conditions is true:

- *arname* (Multimedia Archive name) is not unique.
- *arname* is too long. It must be less than 40 characters.

Examples

To define the Multimedia Archive ar0 to server eternal, enter:

```
mkvsar -l ar0 -h eternal -i usr1 -w pw
```

mkvsas command

Description

This command creates the configuration information for an application server.

Syntax

```
mkvsas -l server_name [ -u uid ] [ -i hostname | ipaddr ] [-p
passticket_timeout ] [-t session_timeout ] [-o stopped_timeout ] [-r
process_userdata_flag ] [-k process_userdata_kill ] [-c
process_userdata_log_kill ] [-h mm_archive_host_name ] | [-m
client_multiview ] | [-v asset_group ] [-I ms_hostname ] | -?
```

Flags

-l <i>server_name</i>	Logical name of application server. Any string value without blanks is acceptable, except DEFAULT.
-u <i>uid</i>	Not used.
-i <i>hostname</i> <i>ipaddr</i>	Host name or the IP address of the host.
-p <i>passticket_timeout</i>	The default value is the local host name. Time-out value for an unopened passticket. A <i>passticket</i> is a server-provided authorization for a client to view a specific video. If a user does not open it in the time specified, the ticket is discarded and the session is terminated. Values are in seconds; the recommended value is between 240 seconds (4 minutes) and 1200 seconds (20 minutes).
-t <i>session_timeout</i>	Default is 1200 seconds. Time-out value for the maximum time a user session can be open while playing a video. If the session time exceeds the value specified, the session is ended. Values are in seconds; the recommended value for videos that run between 15 and 30 minutes is 3600 to 7200 seconds (1 to 2 hours). The maximum value is 86400 seconds (24 hours).
-o <i>stopped_timeout</i>	Time-out value for the maximum time a video has been left in stopped or paused state <i>after</i> it has been played until the end. If the stopped time exceeds the value specified, the session is ended. Values are in seconds; an extremely low value significantly increases system overhead. Default is 3600 (1 hour).
-r <i>process_userdata_flag</i>	Defines whether the process user data (PUD) system will be used (to gather billing or marketing information, for example), and if so, whether it must be running before a session is started. Values can be: <ul style="list-style-type: none"> 0 Indicates no support of the PUD system is desired. This is the default. 1 Indicates that the PUD system will be used and must be running when the application server is started or running. 2 Indicates that the PUD system will be used, but is not required to be running when the application server is started or running.

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<code>-k process_userdata_kill</code>	Defines whether the application server should terminate or continue if the process user data system disappears. This entry is only valid if the <code>-r</code> flag is 1. Value is an integer, where 0 indicates that current sessions will not be terminated, but that new sessions will not be started until the process user data system is restarted, and 1 indicates system termination. Default is 0.
<code>-c process_userdata_log_kill</code>	This entry defines whether the Application Server should terminate or continue if the system cannot write to the billing log file. Values can be: 0 Indicates that the current sessions should not be stopped but that new sessions will not be started until the process user data system is running. This is the default. 1 Indicates that the process user data system should be terminated. 2 Indicates the process user data system should continue as before.
<code>-v asset_group</code>	This entry is used to define the asset group used by application server. The value should be the name of an asset group available in the VideoCharger complex. If this flag is not specified, the default asset group will be used.
<code>-h mm_archive_host_name</code>	Host name for the multimedia archive.
<code>-m client_multiview</code>	Specifies whether client multiview is enabled. Enabling multiview allows unrestricted playing of video assets. If you want to keep track of the users of video assets, disable this option. Value is an integer: 1 enables multiview, 0 disables multiview. Default is 1.
<code>-v asset_group</code>	This entry is used to define the asset group used by application server. The value should be the name of an asset group available in the VideoCharger system. If this flag is not specified, the default asset group will be used.
<code>-I ms_hostname</code>	Not used.
<code>-?</code>	Display help for this command.

Error Codes

This command fails if an application server with the same logical name already exists.

Examples

- To create an application server named `smergle`, and use all the defaults:
`mkvsas -l smergle`
- To create an application server named `smergle`, with a `passticket` time-out of 10 minutes:
`mkvsas -l smergle -p 600`

chvsdp command

Description

This command changes attributes of a specified data pump.

Syntax

```
chvsdp -l dpname [-h dphost ] [-i cmid ] [-w cmpw ] [-f cmhost ] [-p
cmport] [-r bw ] [-n prognum ] [-d ] | -?
```

Flags

-l <i>dpname</i>	Logical name of data pump.
-h <i>dphost</i>	Network host name of data pump. Use the host name (for example, pipeline), not the dotted decimal identification for the machine.
-i <i>cmid</i>	User ID for content management (for file transfer protocol).
-w <i>cmpw</i>	User password for content management.
-f <i>cmhost</i>	Network host name for asset transfers during content loading.
	If you have two different network connections, it is possible that you might choose to use a different host name (network connection) for content loading from the network connection for Control Server to data pump communication.
-p <i>cmport</i>	Port number for content management transfers during content loading. The default is 4324.
-r <i>bw</i>	Real-time bandwidth limit is the maximum amount of CPU resources that you want dedicated to the delivery of assets. This is an actual hard limit and is expressed in megabits, kilobits, or bits per second. For example: 100m megabits per second (the <i>m</i> is not case-sensitive) 100000k kilobits per second (the <i>k</i> is not case-sensitive) 1000000 bits per second You can set the real-time bandwidth higher (or lower) to get maximum efficiency; you might set this as a temporary limit under unusual circumstances, for example. However, the system can go no higher than what you set. Requests that exceed the data pump's maximum are rejected. Setting the real-time bandwidth limit higher provides more resource for real-time streams and paced content loading.
-n <i>prognum</i>	Port mapper program number used to access the data pump.
-d	Defers change until the next data pump restart or until the next time the command is run without the -d flag.
-?	Display help for this command.

After the chvsdp command completes successfully, the following information is updated immediately (unless the -d flag is used):

- User ID for content management.
- User password for content management.

Error Codes

This command fails with an error message if *dpname* does not exist, or if any other specified value is invalid.

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Examples

To change network host name of data pump dp0 to pipeline, enter:

```
chvsdp -l dp0 -h pipeline
```

chvspg command

Description

This command changes whether a specified port group is the system default.

Syntax

```
chvspg -l pgname [-f {y | n } ] [-d ] | -?
```

Flags

-l <i>pgname</i>	Logical name of port group.
-f { <i>y</i> <i>n</i> }	Indicator that port group <i>pgname</i> is to be the default (<i>y</i> is yes, <i>n</i> is no).
-d	Defers change until the next Control Server restart or until the next time the command is run without the -d flag.
-?	Display help for this command.

After the chvspg command completes successfully, the status of the port group as the system default is updated immediately (unless the -d flag is used to defer the change).

Error Codes

This command fails with an error message if *pgname* (logical name of port group) is not valid.

Examples

To make port group pg0 the system default and defer the change until the next Control Server restart, enter:

```
chvspg -l pg0 -f y -d
```

chvsport command

Description

This command changes the attributes of a specified port.

Syntax

```
chvsport -l portname [-r bw ] [-m streams ] [-d ] [ -b interface bandwidth ] | -?
```

Flags

-l <i>portname</i>	Logical name of the port.
-r <i>bw</i>	Lets you set your own data limit for network interface streaming. Setting such a limit helps the system avoid overruns or overcommitting the capacity of the network adapter or downstream network capabilities. You can set bandwidth differently for each port, based on that port's function. For example you might set the limit lower for a port that handles content loading and playing. You might also set this as a temporary limit under unusual circumstances. This is an actual hard limit and is expressed in megabits, kilobits, or bits per second. For example: 100m megabits per second (the <i>m</i> is not case-sensitive) 100000k kilobit per second (the <i>k</i> is not case-sensitive) 1000000 bits per second
-m <i>streams</i>	Defines maximum number of streams that can be supported by this port. For <i>porttype</i> of <i>inet</i> , it can be up to 32 K.
-d	Defers change until the next Control Server restart or until the next time the command is run without the -d flag.
-b	The absolute maximum bandwidth that the network interface card can stream (as rated by the hardware manufacturers). You can limit your bandwidth further using the -r flag.
-?	Display help for this command.

After the `chvsport` command completes successfully, the real-time limit of the port's maximum bandwidth is updated immediately (unless the `-d` flag is used to defer the change).

Error Codes

This command fails with an error message if any of the following conditions is true:

- Port stream limit is not valid.
- *bw* (real-time bandwidth limit) value is not valid.

Examples

1. To change the real-time bandwidth limit of port `p1`, enter:

```
chvsport -l p1 -r 1.5m
```
2. To change the maximum number of streams for `inet` port `p1`, enter:

```
chvsport -l p1 -m 32K
```


chvsag command

Description

This command changes attributes of an asset group. This command also allows the user to designate a particular asset group as the system default.

Syntax

```
chvsag -l agname [-f {y |n}] [-d ] | -?
```

Flags

-l <i>agname</i>	Logical name of asset group.
-f { y n }	Indicator that asset group <i>agname</i> is to be the default (y is yes, n is no).
-d	Defers change until the next control server restart or until the next time the command is run without the -d flag.
-?	Display help for this command.

After the chvsag command completes successfully, the status of this asset group as the default of the system is updated immediately (unless the -d flag is used to defer the change):

Error Codes

This command fails with an error message if either of the following conditions is true:

- *agname* (asset group name) does not exist.
- *agname* (asset group name) is not valid.

Examples

To make asset group ag0 the default asset group, enter:

```
chvsag -l ag0 -f y
```

VideoCharger Server for AIX

chvsar command

Description

This command updates attributes for the Multimedia Archive. Use this command to change the password of the content loading user ID for the Archive. The command only becomes available when you install the Multimedia Archive.

Syntax

```
chvsar -l arname [-h arhost ] [-i cmid ] [-w cmpw ] [-p cmport ] | -?
```

Flags

-l <i>arname</i>	Multimedia Archive name.
-h <i>arhost</i>	Full domain name of Multimedia Archive.
-i <i>cmid</i>	User ID for content management (the file transfer protocol) for the Archive.
-w <i>cmpw</i>	User password for content management.
-p <i>cmport</i>	Port number for content management transfers during content loading.
-?	Display help for this command.

After the `chvsar` command completes successfully, the Multimedia Archive attributes are updated immediately.

Error Codes

This command fails with an error message if any of the following conditions is true:

- *arname* does not exist.
- *arhost* is invalid.
- *cmid* or *cmpw* is invalid.

Examples

To change Multimedia Archive `ar0` host name to `eternal`, enter:

```
chvsar -l ar0 -h eternal
```

chvsas command

Description

This command changes the configuration information for an application server. Changes take effect the next time the daemon is started.

Syntax

```
chvsas -l server_name [ -u uid ] [-i hostname | ipaddr ] [-p
passticket_timeout ] [-t session_timeout ] [-o stopped_timeout ] [-r
process_userdata_flag ] [-k process_userdata_kill ] [-c
process_userdata_log_kill ] [-h mm_archive_host_name ] | [-m
client_multiview ] | [-v asset_group ] [-I ms_hostname ] | -?
```

Flags

All `chvsas` invocations must specify the `-l server_name` flag and at least one other flag. For complete information about these flags, see the “`mkvsas` command” on page 31.

Error Codes

This command fails if the configuration information for an Application Server with the logical name does not exist, or if no flag other than `-l` is specified.

Examples

1. To change the IP address for an application server named `smergle`:


```
chvsas -l smergle -i fergle.raleigh.ibm.com
chvsas -l smergle -i 9.67.123.456
```
2. To change the `passticket` time-out value to 30 minutes for an Application Server named `smergle`:


```
chvsas -l smergle -p 1800
```

VideoCharger Server for AIX

chvssy command

Description

This command changes the attributes of the log file that is shared by both Content Management and the application server. Changes to the log file name or file size for the `-l` flag take effect on the next ISCSYSDM daemon start-up; all other changes take effect when the daemon that uses the utilities starts.

Syntax

```
chvssy [-l log_file ] [-k backup_log_file ] [-b billing_file ] [-a backup_billing_file ] [-x log_file_size ] [-y billing_file_size ] [-s stdout_flag ] [-m enable_msg_option ] [-n disable_msg_option ] [-t enable_trace_option ] [-u disable_trace_option ] [-c enable_component_option ] [-d disable_component_option ] [-o enable_tracedata_option ] [-p disable_tracedata_option ] | -?
```

Flags

<code>-l log_file</code>	Name of the log file where startup, shutdown, error, and trace messages are stored. The default is <code>isc.log</code> .				
<code>-k backup_log_file</code>	Name of the log file that is the backup of the last log file; it will be overwritten when the log file fills up again.				
<code>-b billing_file</code>	Name of the billing file; this file contains session-related messages (for example, session started, playing, end-of-stream, session stopped).				
<code>-a backup_billing_file</code>	Name of the backup billing file that is the backup of the last billing file; it will be overwritten when the billing file fills up again.				
<code>-x log_file_size</code>	Specifies the size of the log file; file sizes are in decimal notation, and the default is about 3 MB.				
<code>-y billing_file_size</code>	Specifies the size of the billing file; file sizes are in decimal notation, and the default is about 3 MB.				
<code>-s stdout_flag</code>	Specifies the standard output option; two options are supported: <table><tr><td>0</td><td>The messages/trace data are only logged in the log file.</td></tr><tr><td>1</td><td>The messages/trace data are logged in both the log file and to stdout.</td></tr></table>	0	The messages/trace data are only logged in the log file.	1	The messages/trace data are logged in both the log file and to stdout.
0	The messages/trace data are only logged in the log file.				
1	The messages/trace data are logged in both the log file and to stdout.				

Tip: Using a value of 1 for stdout on a system with an Web server will cause problems with the presentation formatter, because trace messages are sent out with the HTML output displays.

<code>-m enable_msg_option</code>	Turns on any message option; the following types are supported: ERROR Critical errors WARNING Serious problems INFO General items MISC Miscellaneous
<code>-n disable_msg_option</code>	Turns off any message option. Uses the same options as <code>-m</code> .

-t <i>enable_trace_option</i>	Turns on any trace option; the following types are supported: ERROR Error path or return code WARNING Serious problems INFO General trace messages MISC Miscellaneous DUMP Detailed hexadecimal dumps of storage
-u <i>disable_trace_option</i>	Turns off any trace option. Uses the same options as -t .
-c <i>enable_component_option</i>	Turns on any component option; the following values are supported: AS application server, which comprises the application server Interface layer, and the application server daemons (ISCARDMN and ISCASDMN). CM Content management. PF Presentation formatter. SY System utilities (logging daemon ISCSYSDM). Enabling SY , particularly if tracing is turned on, can result in a flood of messages.
-d <i>disable_component_option</i>	Turns off any component option. Uses the same options as -c .
-o <i>enable_tracedata_option</i>	Turns on trace data options; for example, the following values are supported: FN Insert the function name issuing the message; when INFO trace is enabled, it is strongly recommended that the FN option be turned on. Most of the INFO trace is useless without the FN option enabled. PID A hexadecimal representation of a process ID. TID A hexadecimal representation of a thread ID.
-p <i>disable_tracedata_option</i>	Turns off trace data options. Uses the same options as -o .
-?	Display help for this command.

Tip: Multiple **-m**, **-n**, **-t**, **-u**, **-c**, or **-d** options can be coded on the same line, but each option must be preceded by a flag (for example, `chvssy -t INFO -t ERROR`).

Error Codes

This command fails if the configuration file does not exist.

Examples

To create a new log file called `newlog` to be used after the logging daemon is restarted:

```
chvssy -l /var/adm/ras/newlog
```

VideoCharger Server for AIX

chvssg command

Description

This command changes the attributes of a specified stripe group. After the chvssg command completes successfully, the limit of the stripe group's maximum bandwidth is updated immediately (unless the -d flag is used to defer the change until the next Control Server restart or until the next time the command is run without the -d flag).

Syntax

```
chvssg -l sgname [-b bw] [-t threshold] [-d] | -?
```

Flags

-l <i>sgname</i>	Logical name of the stripe group.
-b <i>bw</i>	Maximum amount of data that can be read from or written to the file system. Setting such a limit helps the system avoid overruns or overcommitting the capacity of the disk. This is expressed in megabits, kilobits, or bits per second. For example: 100m megabits/second (the m is case-insensitive) 100000k kilobits/second (the k is not case-sensitive) 1000000 bits/second If 0 is entered for bandwidth, the system will recalibrate the file system and update the bandwidth according to the actual throughput achieved.
-t <i>threshold</i>	Defines percentage of the maximum bandwidth that will be used by VideoCharger.
-d	Defers change until the next control server restart or until the next time the command is run without the -d flag.
-?	Displays help for this command.

Error Codes

This command fails with an error message if any of the following is true:

- Threshold value is not valid.
- bw (bandwidth limit) value is not valid.

Examples

1. To change the bandwidth limit of stripegroup dp0.sg0, enter:
chvssg -l dp0.sg0 -b 100m
2. To change the bandwidth threshold for stripegroup dp0.sg0, enter:
chvssg -l dp0.sg0 -t 70

rmvsport command

Description

This command removes, inactivates, or quiesses a port.

Syntax

```
rmvsport -l portname [-d | -q ] | -?
```

Flags

-l <i>portname</i>	Logical name of the physical network interface for the adapter installed on the data pump.
-d	Remove specified port. Using the <code>rmvsport</code> command without the <code>-d</code> flag changes its state to inactive, but will not remove the port. A port cannot be removed unless it is first inactivated.
-q	Change state of port to inactive after all currently running operations on this port have been completed. If <code>-q</code> is not specified, any running streams on the port are immediately terminated.
-?	Display help for this command.

Error Codes

This command fails with an error message if the port name (*portname*) is not valid.

Examples

1. To make port p1 inactive after processes currently running on it have completed, enter:

```
rmvsport -l p1 -q
```
2. To make port p1 immediately inactive and stop streams currently running on it, enter:

```
rmvsport -l p1
```
3. To remove port p1 once it has been inactivated, enter:

```
rmvsport -l p1 -d
```

rmvspg command

Description

This command removes, inactivates, or quiesces a port group.

Requirement: All associated ports belonging to the port group must first be removed before running this command. See “rmvspport command” on page 43 for information about how to remove ports. Ports can exist in the port group if you are only using `rmvspg` to make the port group inactive.

Syntax

```
rmvspg -l pgname [-d | -q ] | -?
```

Flags

-l <i>pgname</i>	Name of port group.
-d	Remove specified port group. Using the <code>rmvspg</code> command without the <code>-d</code> flag will change its state to inactive, but will not remove the port group. To remove it, run the command a second time, using the <code>=d</code> flag.
-q	Change state of port group to inactive after all currently running operations on this port group have been completed. If <code>-q</code> is not specified, the port group is immediately inactivated, and all streams running from the port group are stopped.
-?	Display help for this command.

Error Codes

This command fails with an error message if either of the following conditions is true:

- Port group name (*pgname*) is not valid.
- Any ports associated with the port group still exist.

Examples

1. To make port group `pg0` inactive after streams currently running on it have completed, enter:

```
rmvspg -l pg0 -q
```
2. To make port group `pg0` immediately inactive and stop streams currently running on it, enter:

```
rmvspg -l pg0
```
3. To remove port group `pg0` after it has been inactivated, enter:

```
rmvspg -l pg0 -d
```


rmvssg command

Description

This command removes, inactivates, or quiesces a stripe group.

Requirements:

1. All associated assets belonging to the stripe group must first be removed before running this command. See “vsdelete command” on page 75 for information about how to remove assets. However, if the stripe group you are removing contains assets, all of which have replicas in other stripe groups, then the stripe group can be removed with `rmvssg` without first removing the assets.
2. The associated asset group must first be in an inactive state before removing or inactivating stripe groups.

Syntax

```
rmvssg -l sgname [-d | -q ] | -?
```

Flags

-l <i>sgname</i>	Name of stripe group.
-d	Remove specified stripe group. Using the <code>rmvssg</code> command without the <code>-d</code> flag will change its state to inactive, but will not remove the stripe group. To remove it, run the command a second time, using the <code>-d</code> flag.
-q	Change state of stripe group to inactive after all currently running operations on this stripe group have been completed. If <code>-q</code> is not specified, the stripe group is immediately inactivated.
-?	Display help for this command.

Error Codes

This command fails with an error message if the stripe group name (*sgname*) is not valid.

Examples

1. To make stripe group `sg0` inactive after streams currently running on it have completed, enter:


```
rmvssg -l sg0 -q
```
2. To make stripe group `sg0` immediately inactive and stop streams currently running on it, enter:


```
rmvssg -l sg0
```
3. To remove stripe group `sg0` after it has been inactivated, enter:


```
rmvssg -l sg0 -d
```
4. To reactivate asset group `ag0` (with which stripe group `sg0` had been associated), enter:


```
mkvsag -l ag0
```

VideoCharger Server for AIX

rmvsag command

Description

This command removes, inactivates, or quiesces an asset group.

Requirement: When you are deleting an asset group, all associated stripe groups belonging to the asset group must first be removed. See “rmvssg command” on page 45 for information about how to remove stripe groups.

Syntax

```
rmvsag -l agname [-d | -q ] | -?
```

Flags

-l <i>agname</i>	Name of asset group.
-d	Remove specified asset group. Using the <code>rmvsag</code> command without the <code>-d</code> flag will change its state to inactive, but will not remove the asset group. To remove it, run the command a second time, using the <code>-d</code> flag.
-q	Change state of asset group to inactive after all currently running operations on this asset group have been completed. If <code>-q</code> is not specified, the asset group is immediately inactivated, and running streams are stopped.
-?	Display usage for this command.

Error Codes

This command fails with an error message if any of the following conditions is true:

- Asset group name (*agame*) is not valid.
- All associated stripe groups belonging to the asset group have not already been removed (if you are attempting to remove an asset group).

Examples

1. To make asset group `ag0` inactive after streams currently running on it have completed, enter:

```
rmvsag -l ag0 -q
```
2. To make asset group `ag0` immediately inactive and stop streams currently running on it, enter:

```
rmvsag -l ag0
```
3. To remove asset group `ag0` after it has been inactivated, enter:

```
rmvsag -l ag0 -d
```

rmvsdp command

Description

This command removes, inactivates, or quiesces the data pump.

Requirement: All associated ports and stripe groups belonging to the data pump must first be removed before using this command to remove the data pump. See “Recommended order to run commands” on page 21.

For information about:

Removing ports	See the “rmvsport command” on page 43.
Removing stripe groups	See the “rmvssg command” on page 45.

Syntax

```
rmvsdp -l dpname [-d | -q ] | -?
```

Flags

-l <i>dpname</i>	Name of data pump.
-d	Remove specified data pump. Using the rmvsdp command without the -d flag will change its state to inactive, but will not remove the data pump.
-q	Change state of data pump to inactive after all currently running operations on this data pump have been completed. If -q is not specified, the data pump is immediately inactivated, and all streams on it are stopped.
-?	Display help for this command.

Error Codes

If you are removing the data pump, this command fails with an error message if all associated ports, port groups, stripe groups, and asset groups belonging to the data pump have not already been removed.

Examples

- To make data pump dp0 inactive after streams currently running on it have completed, enter:

```
rmvsdp -l dp0 -q
```
- To make data pump dp0 immediately inactive and stop streams currently running on it, enter:

```
rmvsdp -l dp0
```
- To remove data pump dp0 after it has been inactivated, enter:

```
rmvsdp -l dp0 -d
```

VideoCharger Server for AIX

rmvsas command

Description

This command removes the configuration information for an application server.

Syntax

```
rmvsas -l server_name [ -i hostname | ipaddr ] [-p passticket_timeout ]  
[-t session_timeout ] [-o stopped_timeout ] [-r process_userdata_flag ] [-k  
process_userdata_kill ] [-c process_userdata_log_kill ] [-h  
mm_archive_host_name ] | [-m client_multiview ] | [-v asset_group ] [-I  
ms_hostname ] | -?
```

Flags

-l <i>server_name</i>	Logical name of application server. Any string value without blanks is acceptable, except DEFAULT. Specifying -l <i>server_name</i> and one or more other flags removes only the information for the specified flags. Note that only the flag, not the values, need be specified.						
-i <i>hostname</i> <i>ipaddr</i>	Host name or the IP address of the host.						
-p <i>passticket_timeout</i>	<p>The default value is the local host name.</p> <p>Time-out value for an unopened passticket. A <i>passticket</i> is a server-provided authorization for a client to view a specific video. If a user does not open it in the time specified, the ticket is discarded and the session is terminated.</p> <p>Values are in seconds; the recommended value is between 240 seconds (4 minutes) and 1200 seconds (20 minutes).</p> <p>Default is 1200 seconds.</p>						
-t <i>session_timeout</i>	<p>Time-out value for the maximum time a user session can be open while playing a video. If the session time exceeds the value specified, the session is ended.</p> <p>Values are in seconds; the recommended value for videos that run between 15 and 30 minutes is 3600 to 7200 seconds (1 to 2 hours). The maximum value is 86400 seconds (24 hours).</p>						
-o <i>stopped_timeout</i>	<p>Time-out value for the maximum time a video has been left in stopped or paused state <i>after</i> it has been played until the end. If the stopped time exceeds the value specified, the session is ended. Values are in seconds; an extremely low value significantly increases system overhead. Default is 3600 (1 hour).</p>						
-r <i>process_userdata_flag</i>	<p>Defines whether the process user data (PUD) system will be used (to gather billing or marketing information, for example), and if so, whether it must be running before a session is started. Values can be:</p> <table><tr><td>0</td><td>Indicates no support of the PUD system is desired. This is the default.</td></tr><tr><td>1</td><td>Indicates that the PUD system will be used and must be running when the application server is started or running.</td></tr><tr><td>2</td><td>Indicates that the PUD system will be used, but is not required to be running when the application server is started or running.</td></tr></table>	0	Indicates no support of the PUD system is desired. This is the default.	1	Indicates that the PUD system will be used and must be running when the application server is started or running.	2	Indicates that the PUD system will be used, but is not required to be running when the application server is started or running.
0	Indicates no support of the PUD system is desired. This is the default.						
1	Indicates that the PUD system will be used and must be running when the application server is started or running.						
2	Indicates that the PUD system will be used, but is not required to be running when the application server is started or running.						

-k <i>process_userdata_kill</i>	Defines whether the application server should terminate or continue if the process user data system disappears. This entry is only valid if the -r flag is 1. Value is an integer, where 0 indicates that current sessions will not be terminated, but that new sessions will not be started until the process user data system is restarted, and 1 indicates system termination. Default is 0.
-c <i>process_userdata_log_kill</i>	This entry defines whether the Application Server should terminate or continue if the system cannot write to the billing log file. Values can be: 0 Indicates that the current sessions should not be stopped but that new sessions will not be started until the process user data system is running. This is the default. 1 Indicates that the process user data system should be terminated. 2 Indicates the process user data system should continue as before.
-v <i>asset_group</i>	This entry is used to define the asset group used by application server. The value should be the name of an asset group available in the VideoCharger complex. If this flag is not specified, the default asset group will be used.
-h <i>mm_archive_host_name</i>	Host name for the multimedia archive.
-m <i>client_multiview</i>	Specifies whether client multiview is enabled. Enabling multiview allows unrestricted playing of video assets. If you want to keep track of the users of video assets, disable this option. Value is an integer: 1 enables multiview, 0 disables multiview. Default is 1.
-v <i>asset_group</i>	This entry is used to define the asset group used by application server. The value should be the name of an asset group available in the VideoCharger system. If this flag is not specified, the default asset group will be used.
-I <i>ms_hostname</i>	Not used.
-?	Display help for this command.

Error Codes

This command fails if the configuration information for the specified Application Server does not exist.

Examples

1. To remove all configuration information for an application server named smergle:
smergle:
`rmvsas -l smergle`
2. To remove the IP address for an application server named smergle:
`rmvsas -l smergle -i`

lsvsdp command

Description

This command lists attributes of the data pump, such as:

- Data pump name
- State (this can be Active, Inactive, or Quiescing)
- Network host name
- Network host name for content management transfers during content loading
- Port number for content management host
- Port names
- User ID for content management
- User password for content management
- Program number
- Real-time bandwidth limit

Syntax

```
lsvsdp [ -l dpname ] | -?
```

Flags

-l <i>dpname</i>	Name of data pump
-?	Display help for this command.

If the command is run without any flags, **lsvsdp** lists all existing Data Pumps.

Error Codes

This command fails with an error message if data pump name (*dpname*) is not valid.

Examples

1. To list attributes of data pump dp0, enter:
lsvsdp -l dp0
2. To list all existing data pumps, enter:
lsvsdp

lsvspg command

Description

This command lists all attributes of a specified port group, such as:

- Port group name
- State (this can be Active, Inactive, or Quiescing)
- Port group type (this can be INET or CL)
- Whether or not it is a default port group
- Port names

Syntax

```
lsvspg [ -l pgname ] | -?
```

Flags

-l <i>pgname</i>	Name of port group.
-?	Display help for this command.

If the command is run without any flags, `lsvspg` lists all existing port groups.

Error Codes

This command fails with an error message if the port group name (*pgname*) is not valid.

Examples

1. To list all the attributes of port group `pg0`, enter:

```
lsvspg -l pg0
```
2. To list all existing port groups, enter:

```
lsvspg
```

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lsvsport command

Description

This command lists attributes of a specified port, such as:

- Port name
- State (this can be Active, Inactive, or Quiescing)
- Port Descriptor (if the port type is analog, the prefix /dev/ is added to the port descriptor when it is displayed). For INET and CL ports, a fully qualified host name is added to the port descriptor.
- Port type
- Real-time bandwidth limit
- Physical network interface bandwidth
- Maximum number of streams supported
- Port group
- Data pump

Syntax

```
lsvsport [ -l portname ] | -?
```

Flags

- | | |
|--------------------|--|
| -l <i>portname</i> | Logical name of the physical network interface for the adapter installed on the data pump. |
| -? | Display help for this command. |

If the command is run without any flags, `lsvsport` lists all existing ports.

Error Codes

This command fails with an error message if the port name (*portname*) is not valid.

Examples

1. To list attributes of port `p1`, and in particular, to learn which data pump and port group this port belongs to, enter:

```
lsvsport -l p1
```
2. To list all existing port names, enter:

```
lsvsport
```


lsvsag command

Description

This command lists all attributes of a specified asset group, such as:

- Asset group name
- State (this can be Active, Inactive, or Quiescing)
- Whether or not it is the default asset group
- Stripe group

Syntax

```
lsvsag [ -l agname ] | -?
```

Flags

-l <i>agname</i>	Name of asset group.
-?	Display help for this command.

If the command is run without any flags, `lsvsag` lists all existing asset groups.

Error Codes

This command fails with an error message if the asset group name (*agname*) is not valid.

Examples

1. To list attributes of asset group `ag0`, enter:


```
lsvsag -l ag0
```
2. To list all existing asset groups, enter:


```
lsvsag
```

lsvssg command

Description

This command lists attributes of a specified stripe group, such as.

- Stripe group name
- State (this can be Active, Inactive, or Quiescing)
- File system type
- Asset group
- Path to file system
- Data pump name
- Bandwidth
- Bandwidth threshold (in percent)

Syntax

```
lsvssg [ -l sgname ] | -?
```

Flags

- | | |
|------------------|--------------------------------|
| -l <i>sgname</i> | Name of stripe group. |
| -? | Display help for this command. |

If the command is run without any flags, lsvssg lists all existing stripe groups.

Error Codes

This command fails with an error message if the stripe group name (*sgname*) is not valid.

Examples

1. To list attributes of stripe group sg0, enter:
lsvssg -l sg0
2. To list all existing stripe groups, enter:
lsvssg

lsvsstat command

Description

This command lists status information for the control server or the data pump.

Syntax

```
lsvsstat [ -l comp_name ] | -?
```

Flags

-l <i>comp_name</i>	Logical name of the Control Server or Data Pump.
-?	Display help for this command.

If the command is run without the -l flag, status information for the Control Server and defined data pump components is listed. If the command is run with the -l flag and the component specified, more detailed status information is provided.

Error Codes

This command fails with an error message if either of the following is true:

- Logical name of Control Server or data pump (*comp_name*) is not valid.
- Simple Network Management Protocol (SNMP) subsystem is not operational for the component.

Examples

1. To list status for the Control Server and data pump, enter:

```
lsvsstat
```

The result looks similar to the following:

```
cs: Running
dp0: Running
```

2. To list status for data pump dp0, enter:

```
lsvsstat -l dp0
```

The result looks similar to the following:

```
Data Exporter on Data Pump: dp0
Description: "Data Exporter Version: 8.0.3.0"
Memo: ""
Start time: 0
State: Running
Status interval: 40
```

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lsvsar command

Description

This command lists Multimedia Archive attributes, such as:

- Network host name
- Network host name for content management transfers during content loading
- User ID for content management
- User password for content management
- Port number

The command only becomes available when you install the Multimedia Archive.

Syntax

```
lsvsar [ -l arname ] | -?
```

Flags

-l <i>arname</i>	Logical name of Multimedia Archive.
-?	Display help for this command.

Error Codes

This command fails with an error message if the Multimedia Archive name (*arname*) is not valid.

Examples

1. To list attributes for Multimedia Archive ar0, enter:
lsvsar -l ar0
2. To list all existing Multimedia Archives, enter:
lsvsar

lsvsas command

Description

This command lists the configuration information for an application server.

Syntax

```
lsvsas [-l server_name ] [-h ] | -?
```

Flags

-l <i>server_name</i>	Name of the application server.
-h	Includes header information in the listing. Note that this flag only applies to summary listings.
-?	Display help for this command.

If no flags are specified, a summary listing of all defined Application Servers is displayed (including the DEFAULT Application Server). If the -l *server_name* flag is specified, a detailed listing of configuration information for the specific application server is displayed. A sample of the listing follows:

```
[root@cbox70] command: lsvsas -l DEFAULT
Server Name .....: DEFAULT
UUID .....: d1954516-5670-11cf-a4ee-02608c2f163b
Application server Hostname ...: *vs11801
Ticket Timeout .....: *1200
Session Timeout .....: *7200
Stopped Timeout .....: *3600
Multiple View .....: *1
ProcessUserData Option .....: *0
Session Termination Option ....: *0
Log Termination Option .....: *0
Asset Group .....:
Controller Hostname .....: *vs11801
Archive Hostname .....: i
```

Note: Default values are denoted by asterisks.

Error Codes

This command fails if configuration information for an application server with the logical name does not exist.

Examples

To view the configuration details for an application server named smergle:

```
lsvsas -l smergle
```

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lsvssy command

Description

This command lists the attributes of the log file that is shared by both Content Management and the application server.

Syntax

`lsvssy [-?]`

Flags

`-?` Display help for this command.

Examples

To view information about the log file:

```
lsvssy
```

Network Commands for AIX

Use the following commands with your VideoCharger server for AIX.

mmtu	Display, add, or delete maximum transfer unit (MTU) values
no	Configure network attributes

mmtu command

Description

This command displays, adds, or deletes maximum transfer unit (MTU) values. An MTU is the fixed upper limit in terms of the amount of data that can be transferred in one physical frame.

Values are kept in the `common_mtus` kernel list that the path MTU discovery feature uses to detect the path MTU. The `common_mtus` list is always sorted in descending order. Root user authority is required to either add or delete an MTU.

This command is installed in the `/usr/sbin` directory.

Syntax

```
mmtu [ -s | -d value | -a value ]
```

Flags

- s Displays the current `common_mtus` list.
- a Adds the new MTU to the `common_mtus` list. No fatal error is returned if the new MTU value already exists in the list. List remains sorted in descending order.
- d Deletes the specified value from the list. No fatal error is returned if the value is not found in the list.

Examples

1. To display the contents of the `common_mtus` list:

```
mmtu -s
```

2. To add an MTU value to the `common_mtus` list:

```
mmtu -a mtuvalue
```

The `common_mtus` list remains sorted in descending order.

3. To delete the specified value from the `common_mtus` list:

```
mmtu -d mtuvalue
```


no command (additional attributes for path MTU only)

Attributes

Configures network attributes.

Syntax

```
no { -a | -d Attribute | -o Attribute [ = NewValue ] }
```

Description

Use the `no` command to configure path MTU configuration parameters. The `no` command sets or displays current network attributes in the kernel. This command only operates on the currently running kernel. The command must be run again each time the system is started or after the network has been configured. Whether the command sets or displays an attribute is determined by the accompanying flag. The `-o` flag performs both actions. It can either display the value of an attribute or set a new value for an attribute.

For more information about how the network attributes interact with each other, refer to the *AIX System Management Guide: Communications and Networks*.

Attention: Be careful when you use this command. The `no` command performs no range checking, therefore it accepts all values as variables. If used incorrectly, the `no` command can cause your system to become inoperable.

Flags

<code>-a</code>	Prints a list of all configurable attributes and their current values.
<code>-d Attribute</code>	Sets <i>Attribute</i> back to its default value.
<code>-o Attribute [= NewValue]</code>	Displays the value of <i>Attribute</i> if <i>NewValue</i> is not specified, else sets <i>Attribute</i> to <i>NewValue</i> .

Tip: Do not enter space characters before or after the equal sign. The command will fail.

Attributes

Below are the supported attributes, and examples of how several are used. For full information about the `no` command, see the *AIX Commands Reference*.

pmtu_default_age Specifies the default age for the path MTU value for UDP paths. After the expiration, path MTU reduction discovery is initiated. Because the Don't Fragment (DF) bit is always set in the case of TCP (when path MTU Discovery is enabled), there is no aging of path MTU for TCP paths. The default value is 10 minutes; specifying a value of 0 implies infinite age and no explicit path MTU reduction discovery is initiated.

The value specified by this parameter is used as the default path MTU age for all UDP paths. However, UDP applications can specify the path MTU age on a per session basis using the IP level `IP_PMTUAGE` option. This is particularly helpful in situations where UDP applications do not set the DF bit. These applications can specify smaller values for the path MTU age so that reduction discovery can be initiated more frequently.

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pmtu_rediscover_interval	Periodically restarts the discovery with MTU of the first hop link as the estimate. Typically, the objective of a restart is to discover increases to the Path MTUs. The default value is 10 minutes; specifying a value of 0 implies infinite age and no explicit path MTU increase discovery is initiated.
route_expire	Specifies the number of minutes before the route expires. A value of 0 implies that the route never expires.
tcp_pmtu_discover	Enables or disables TCP traffic. The default value is 0 (disabled).
udp_pmtu_discover	Enables or disables UDP traffic. The default value is 1 (enabled). Applications, however, must call <code>IP_FINDPMTU setsockopt()</code> with this parameter for the option to be enabled.

Examples

1. To turn on TCP traffic:
`no -o tcp_pmtu_discover=1`
2. To turn off UDP traffic:
`no -o udp_pmtu_discover=0`
3. To change the default age for the path MTU value to 5 minutes:
`no -o pmtu_default_age=5`

Chapter 5. Content management commands for VideoCharger on AIX

Use the content management commands to:

- List assets.
- List asset attributes.
- List asset groups.
- Add assets.
- Update asset attributes.
- Delete assets.
- Export assets.
- Stage (copy) assets from an Archive Server to a VideoCharger Server, or from one VideoCharger Server to another.

Requirement: To run content management commands, you must be logged on with a user ID belonging to the vsasset group (for example, vsloader). You can also run the content management commands using shell scripts for batch loading.

For information about how to read command syntax statements, see “Reading syntax statements” on page 20.

vslist command

Description

This command lists the attributes of an asset, lists all of the assets in the default asset group, lists all of the existing asset groups, or lists all of the assets and asset groups on the server.

Syntax

```
vslist [-s server_hostname ] [-g group ] [-a asset ] [-G ] [-A ] [-V ]  
[-l ] | -?
```

Flags

<code>-s <i>server_hostname</i></code>	Network host name of the VideoCharger that holds the assets. The default is the local host name.
<code>-g <i>group</i></code>	Name of an asset group. The default is the default asset group. For information about configuring a default asset group, see the “chvsag command” on page 37.
<code>-a <i>asset</i></code>	Name of an asset.
	If this flag is specified, attributes of the asset are displayed. Examples of attributes are bit rate, duration, type, and frame rate. This descriptive information is not required for loading or playing an asset. See the “vsload command” on page 66 for more information about asset attributes.
	If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").
<code>-G</code>	Generates a list of existing asset groups.
<code>-A</code>	Generates a list of assets contained in specified asset group.
<code>-V</code>	After successful completion of the command, displays a confirmation message.
<code>-l</code>	Lists additional information about an asset, such as the size of an asset and the date on which it was created.
<code>-?</code>	Displays help for this command.

If the `-G` and `-A` flags are used together, the result is a list of all existing asset groups and all corresponding assets for each of those groups.

Return Values

This command returns the following values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

Examples

1. To list the attributes for the film *Cold Comfort Farm*, enter:
`vslist -a "Cold Comfort Farm"`
2. To list all of the assets in the default asset group, enter:
`vslist -A`
3. To list all of the assets and asset groups on the server, enter:
`vslist -A -G`
4. To list all of the existing asset groups, enter:
`vslist -G`

vsload command

Description

This command loads the contents of a file to an asset, within an asset group.

As an asset is loaded, it is parsed to determine its attributes, for example, frame rate, play rate, or encoding type. As this information becomes available, the asset attributes are automatically updated. If an asset cannot be parsed, it is not loaded. Automatic parsing can be suppressed by using the `-m` flag.

When you use `vsload` to load an asset, VideoCharger uses the FTP daemon on the host where the asset is located to send the video file. The VideoCharger supports very large file sizes (64 bit), but the maximum file size supported by any given FTP daemon varies.

Requirement: When playing a video as it loads to VideoCharger, you must verify that the data copy rate to VideoCharger exceeds the video's play rate.

Restriction: This VideoCharger release does not support the load and play of Quicktime media using Apple Quicktime Player.

Syntax

```
vsload -a asset -v video_file -h hostname -i ftpID -p ftpPW [-s server_hostname ] [-g group ] [-d duration ] [-m mode ] [-r copyrate ] [-f framerate ] [-b play_rate ] [-t type ] [-V ] | -?
```

Flags

<code>-a <i>asset</i></code>	Name of the asset. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").								
<code>-v <i>video_file</i></code>	Fully qualified file name of asset to be loaded. If several files make up an asset, then separate file names with a comma (,).								
<code>-h <i>hostname</i></code>	Network host name where the asset is located.								
<code>-i <i>ftpID</i></code>	User ID for content management on the host, for setting up connection when loading the asset.								
<code>-p <i>ftpPW</i></code>	User password for content management on the host, for setting up connection when loading the asset.								
<code>-s <i>server_hostname</i></code>	Network host name of the VideoCharger on which the asset is to be loaded. The default is the local host name.								
<code>-g <i>group</i></code>	Name of asset group. The default is the default asset group. For information on configuring a default asset group, see the "chvsag command" on page 37.								
<code>-d <i>duration</i></code>	Duration of the asset; for example, 01:30:20:14, where: <table><tr><td>01</td><td>1 hour</td></tr><tr><td>30</td><td>30 minutes</td></tr><tr><td>20</td><td>20 seconds</td></tr><tr><td>14</td><td>14 frames</td></tr></table>	01	1 hour	30	30 minutes	20	20 seconds	14	14 frames
01	1 hour								
30	30 minutes								
20	20 seconds								
14	14 frames								

-m <i>mode</i>	Mode in which an asset is loaded. This refers to the source (rather than target) side. Valid values for the <i>mode</i> variable are: <ul style="list-style-type: none">RS Sharable mode. The asset can be played while it is being loaded (as long as asset supports load and play).NS Non-sharable mode. The asset cannot be played while it is being loaded.PARSE Automatically parse asset and automatically update asset attributes.NPARSE Do not automatically parse asset or update asset attributes.
	You can combine either NS or RS with either PARSE or NPARSE by using a plus sign (+) between modes (for example, NS+NPARSE). NS and PARSE are the default modes.
-r <i>copyrate</i>	Transfer rate at which the asset is loaded, in bits per second. Use transfer rate when you are going to play an asset while loading it. The default is 0, which loads with whatever amount of bandwidth is available.
-f <i>framerate</i>	Number of frames per second.
-b <i>play_rate</i>	Playback rate of the asset, in bits per second.

VideoCharger Server for AIX

-t *type*

Type of asset, which is one of the following types:

MPEG1

Either Audio, Video, or both

MPEG2

Either Audio, Video, or both

MPEG4

Either Audio, Video, or both

AVI

Either Audio, Video, or both

MOV

QuickTime Video

MVR

HotMedia[®] Video

WAV

Audio

MJPEG

Video

H263

Video

G723

Audio

LBR

Interleaved H263 and G723

- Optional format to use (delimiter is a plus sign (+)):

SIF

240 horizontal lines with 352 pixels per line at 30 frames per second.

CCIR501

240 horizontal lines with 720 pixels per line at 60 frames per second.

HHR

120 horizontal lines with 720 pixels per line at 60 frames per second.

- Optional resolution to use (delimiter is a plus sign (+)):

NTSC

525 horizontal lines of which 480 are used for picture, each containing 704 pixels. The 480 lines of picture are made up of two interlaced fields: 240 odd lines and 240 even lines.

PAL[®]

Similar to NTSC, but with 625 horizontal lines per frame.

- Optional composition to use (delimiter is a plus sign (+)):

PGMSTR

Program stream

- Optional composition to use (delimiter is a plus sign (+)):

TRANSTR

Transport stream

SYSSTR

System stream

-V

After successful completion of the command, displays a confirmation message.

-?

Displays help for this command.

Return Values

This command returns the following exit values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

Examples

To load an asset, for example, *Silent Running*, of type MPEG1 from host name dev1, enter:

```
vsload -a "Silent Running" -v /myproject/myfilm -i user1 -h
dev1.mycompany.com -t MPEG1 -b 3000000
```

To simultaneously load and play an asset:

- Using `vsload` with copyrate and load mode of RS:

```
vsload -a assetname -v videoname -i hostname -p password -m RS -r 3000000
```

where *assetname* is the video name to store in VideoCharger, *videoname* is the video name to load from, *hostname* is the host name of the machine to load from, *password* is the password of the machine to load from, RS is the Read Share, and 3000000 is 3 Mbits/sec copy rate (note that the copy rate should exceed the play rate).

- Using `vsstage` with copyrate and load mode of RS:

```
vsstage -a assetname -S servername -m RS -r 3000000
```

where *assetname* is the video name to store in VideoCharger, *servername* is the server name to copy the video to, RS is the Read Share, and 3000000 is 3Mbits/sec copy rate (note that the copy rate should exceed the play rate).

vsparse command

Description

This command updates frame rate, play rate, duration, and type attributes for one of the following support types of asset:

- MPEG-1
- System Stream
- MPEG-2
- Transport Stream
- MPEG-4
- LBR Stream
- RIFF Stream
- Quick Time

In addition to updating these key attributes, the command stores decoder initialization information for the asset title. Storing this information for the title enables the Video Viewer to configure itself quickly. The viewer can play files that have not had the vsparse command run on them (assuming the appropriate information was passed using the vsload command), but it will take longer for the viewer to initialize.

When running the vsparse command, the only required information is the asset name. The format of the file is recognized.

The vsparse command can be run only after the asset has been loaded, and will erase any frame rate, play rate, and type information previously specified.

Syntax

```
vsparse -a asset [-s server_name ] [-g group ] | -?
```

Flags

-a <i>asset</i>	Name of the asset. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in quotation marks ("").
-s <i>server_name</i>	Name of server on which the asset resides.
-g <i>group</i>	Name of asset group. The default is the default asset group. For information about configuring a default asset group, see the "chvsag command" on page 37.
-?	Display help for this command.

Return Values

This command returns the following values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.

>6 Error occurred.

Examples

To update information about an asset named red, enter:

```
vsparse -a red
```

vsupdate command

Description

This command updates asset attributes.

If you are updating only frame rate, play rate, or encoding type, you can quickly update an asset by using the `vsparse` command. See “`vsparse` command” on page 70.

Syntax

```
vsupdate -a asset [-s server_hostname ] [-g group] [-A asset] [-b  
play_rate] [-f framerate] [-d duration] [-t type] [-V ] | -?
```

Flags

- a *asset*
Name of the asset to be updated. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").
- s *server_hostname*
Network host name of the VideoCharger where the asset is. The default is the local host name.
- g *group*
Name of an asset group. The default is the default asset group. For information on configuring a default asset group, see the “`chvsag` command” on page 37.
- A *asset*
New name of the asset, if it is to be renamed.
- b *play_rate*
Playback rate of the asset, in bits per second.
- f *framerate*
Number of frames per second.
- d *duration*
Duration of the asset; for example, 01:30:20:14, where:
 - 01 1 hour
 - 30 30 minutes
 - 20 20 seconds
 - 14 14 frames
- t *type* Type of asset, which is one of the following types:
 - MPEG1**
Either Audio, Video, or both
 - MPEG2**
Either Audio, Video, or both
 - MPEG4**
Either Audio, Video, or both
 - AVI** Either Audio, Video, or both

MOV QuickTime Video

MVR HotMedia Video

WAV Audio

MJPEG
Video

H263 Video

G723 Audio

LBR Interleaved H263 and G723

- Optional format to use (delimiter is a plus sign (+)):

SIF 240 horizontal lines with 352 pixels per line at 30 frames per second.

CCIR501
240 horizontal lines with 720 pixels per line at 60 frames per second.

HHR 120 horizontal lines with 720 pixels per line at 60 frames per second.

- Optional resolution to use (delimiter is a plus sign (+)):

NTSC 525 horizontal lines of which 480 are used for picture, each containing 704 pixels. The 480 lines of picture are made up of two interlaced fields: 240 odd lines and 240 even lines.

PAL Similar to NTSC, but with 625 horizontal lines per frame.

- Optional composition to use (delimiter is a plus sign (+)):

PGMSTR
Program stream

- Optional composition to use with MPEG2 (delimiter is a plus sign (+)):

TRANSTR
Transport stream

SYSSTR
System stream

-V After successful completion of the command, displays a confirmation message.

-? Displays help for this command.

Return Values

This command returns the following exit values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

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Examples

To rename an asset, for example, *Cold Comfort Farm*, to *Chariots of Fire*, enter:
vsupdate -a "Cold Comfort Farm" -A "Chariots of Fire"

vsdelete command

Description

This command deletes an asset. The deletion occurs as soon as the asset is available.

Syntax

```
vsdelete -a asset [-s server_hostname ] [-g group ] [-V ] | -?
```

Flags

-a *asset*

Name of the asset. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").

-s *server_hostname*

Network host name of the VideoCharger on which the asset is to be deleted. The default is the local host name.

-g *group*

Name of asset group. The default is the default asset group. For information about configuring a default asset group, see the "chvsag command" on page 37.

-V

After successful completion of the command, displays a confirmation message.

-?

Displays help for this command.

Return Values

This command returns the following exit values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

Examples

- To delete an asset, for example, *Silent Running*, from the default asset group, enter:

```
vsdelete -a "Silent Running"
```
- To delete an asset, for example, *Breaking Away*, from the bicycles asset group and to receive confirmation of command completion, enter:

```
vsdelete -a "Breaking Away" -g bicycles -V
```

vsexport command

Description

This command exports an asset from the VideoCharger Server to any machine with an FTP daemon.

Syntax

```
vsexport -a asset -v video_file -h hostname -i ftpID -p ftpPW [-s server_hostname ] [-g group ] [-r copyrate ] [-V ] | -?
```

Flags

-a <i>asset</i>	Name of the asset to be exported. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").
-v <i>video_file</i>	The fully-qualified name of the new target video file.
-h <i>hostname</i>	Target network hostname that the asset will export to.
-i <i>ftpID</i>	User ID for content management on the target host, where the asset will be exported to.
-p <i>ftpPW</i>	User password for content management on the target host.
-s <i>server_hostname</i>	Network host name of the source VideoCharger Server that the asset will export from. The default is the local host name.
-g <i>group</i>	Name of asset group to be exported from. The default is the default asset group. For information about configuring a default asset group, see the "chvsag command" on page 37.
-r <i>copyrate</i>	Rate (in bits per second) to export the asset at. Specify 0 for best rate without reservation.
-V	After successful completion of the command, displays a confirmation message.
-?	Display help for this command.

Return Values

This command returns the following values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

Examples

To export an asset, for example, *Sample Movie* from *lantv.stl.ibm.com* to host name *MovServr*; save it as *movie.mpg*; and to receive confirmation of command completion, enter:

```
vsexport -a "Sample Movie" -g AG -v 'movie.mpg' -h MovServr  
-r 0 -i jdoe -p password -s 'lantv.stl.ibm.com' -V
```


vsstage command

Description

Copies an asset from a Multimedia Archive or from one VideoCharger to another.

Syntax

```
vsstage -a asset -S server[-s server_hostname ] [-g group ] [-G group ] [-A asset ] [-m mode ] [-r copyrate ] [-V ] | -?
```

Flags

-a <i>asset</i>	Name of the asset to be copied. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").
-S <i>server</i>	Network host name of the VideoCharger to which the asset is to be copied. If the asset already exists on the destination, it will not be copied, and the command completes unsuccessfully.
-s <i>server_hostname</i>	Network host name of the VideoCharger from which the asset is to be copied. The default is the local host name.
-g <i>group</i>	Name of asset group to be copied from. The default is the default asset group. For information on configuring a default asset group, see the "chvsag command" on page 37.
-G <i>group</i>	Name of asset group to be copied to. The default is the asset group configured in the -S flag.
-A <i>asset</i>	New name of the asset, if it is to be renamed.
-m <i>mode</i>	Mode in which an asset is copied. This refers to the source (rather than target) side. Valid values for the <i>mode</i> variable are: RS Sharable mode. This is the default. The asset can be played while it is being copied. NS Non-sharable mode. The asset cannot be played while it is being copied.
-r <i>copyrate</i>	Transfer rate at which to copy the asset, in bits per second. Use transfer rate when you are going to play an asset while copying it. The default is 0, which loads with whatever amount of bandwidth is available. This might be the fastest way to load an asset on a lightly loaded system.
-V	After successful completion of the command, displays a confirmation message.
-?	Display help for this command.

Return Values

This command returns the following exit values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

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Examples

To copy an asset, for example, *Breaking Away*, to asset group bicycles on host name MovServr and to receive confirmation of command completion, enter:

```
vsstage -a "Breaking Away" -S MovServr -g bicycles -m NS -V
```

IP multicasting commands

IP multicasting, allows transmission of an IP datagram to a set of hosts that form a single multicast group. VideoCharger Server multicast functions facilitate the setting up of IP multicast groups, the mapping of audio/video content of these groups, the advertisement of this configuration to web pages, the launching (playing) of audio/video from the server, and the scheduling of audio/video playing from the server.

This chapter describes the `ipplay` command, `ipplaystat` command, and the format of spool entry files.

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ipplay command

Description

Use the `ipplay` command to schedule streaming audio and video content for existing assets to an IP multicast address.

Syntax

```
ipplay -g asset_group -d dest_address|dest_hostname -p port -b rate [-P proto] -s send_addresses|hostnames [-j join_addresses|hostnames] [-T tll] [-l] -t trans_time [-c count] -a asset name [-f file name]
```

Flags

- g *asset_group*
Specifies the `asset_group` that the asset belongs to.
- d *dest_address/dest_hostname*
Specifies the destination IP address or hostname.
- p *port* | -L *port*
Specifies the destination TCP/UDP port number.
- b *rate*
Specifies the bit rate in bits per second.
- P *proto*
Specifies the transport protocol for playing. You can specify either TCP (unicast) or RTP (unicast or multicast).
- s *send_address* | *hostnames*
Specifies the IP interfaces for sending content. A maximum of ten addresses can be specified. Dotted decimal names can be mixed with host names.
- j *join_addresses|hostnames*
Specifies the IP interfaces for joining multicast group. The maximum number of join interfaces is ten. User will get error message if ten is exceeded. Can mix dotted decimal with host names.
- T *tll*
Specifies the time-to-live.
- l *tll*
Enables loopback for IP multicast.
- t *trans_time*
Specifies the transmission start time in the format `CCYYMMDDhhmm.ss` where `CC` =century, `YY` =year, `MM` =month, `DD` =day, `hh` =hour, `mm` =minutes, `ss` =seconds
- c *count*
Specifies loop count.
- a *asset name* | -f *file name*
Specifies either the asset or file name for playing.

ipplaystat command

Description

Displays the status of jobs to be executed. This command is called from cgi-bin programs designed to display a list of available multicast videos to clients.

ipplaystat is a command line program that reads the spool directory, `/var/spool/avs/avsjobs/`, reporting the status of IP multicast jobs scheduled to be executed. The jobs are listed in order of scheduled transmission time. If given no arguments (aside from the parameter **-h**) it reports:

- File name | asset name of the multimedia file to be played.
- Description associated with the file.
- Asset group associated with the file.
- IP address | host name to which the file is to be sent.
- Port number associated with the file.
- Bit rate, in bits per second, associated with the file.
- Transport protocol.
- Scheduled transmission time.

Syntax

ipplaystat [-f] [-D] [-g] [-d] [-p] [-b] [-P] [-t] [-h] [-?]

Flags

- f Reports the asset name or file name of the asset to be played.
- D Reports the description associated with the asset.
- g Reports the asset group the asset belongs to.
- d Reports the destination IP address | host name.
- p Reports the destination UDP port number.
- b Reports the bit rate in bits per second.
- P Reports the type of transport protocol.
- t Reports the time (*yyyymmddhhmm.ss*) at which the transmission of the asset is scheduled to begin. For example, 200107030901.44 means 9:01:44am at July 3, 2001.
- h Displays data only.
- ? Displays help for this command.

Examples

1. To report all information about scheduled IP multicast jobs, enter:

```
ipplaystat
```
2. To report only the asset name | file name and scheduled transmission time for all jobs, enter:

```
ipplaystat -f -t
```

Format of spool entry files: A sample spool entry file might be
`jcchao.831656148.a`

where `jcchao` is the user id that issued the `at` command, and `831656148` is the time as measured in seconds from 00:00:00 GMT January 1, 1970. The `at` command produces the job numbers according to scheduled transmission time order.

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All spool entry files are ASCII files, and all fields contained in spool files are delimited by the | character.

Empty fields are denoted by a # character. All fields are present in each spool entry file, even if the fields are empty.

Entry File Format:

```
AssetName|DestAddr|DestPort|FileName|ContDesc|AssetGroup|BitRate  
|TransPort|SendInter|JoinInter|TTL|Loopback|TransTime|LoopCount
```

For example:

```
Mission Impossible|224.0.1.3|5020|#|starring Tom Cruise  
|asset_group_two|600000|RTP|129.35.60.100|#|16|0|9701010900|1
```

The format of spool files is designed to facilitate the inclusion of spool file information into various databases. Note that transport protocol, send interfaces, join interfaces, time to live, loop back, and loop count are not recorded in entry files.

Chapter 6. Troubleshooting VideoCharger on AIX

Consult the following sections to help solve VideoCharger problems:

- “Solving problems with selecting, viewing, or deleting assets” on page 85
- “Solving content loading problems” on page 88

General debugging techniques

In addition to the problem diagnosis topics discussed in this chapter, you can use several debugging tools to determine the source of problems. Debugging tools for AIX include:

Consulting error logs

Errors are entered into the system error log. For recover information, view the VideoCharger error messages section (VideoCharger“VideoCharger error messages” on page 159). You can also view the service log as described below.

Issuing the trace command

This helps you to isolate system problems by monitoring selected system events.

Printing a system dump

This creates a picture of your system’s memory contents and can help the service personnel debug your system.

Reporting the problem to your service representative

See the VideoCharger problem reporting section (“VideoCharger problem reporting” on page 181).

General information about these tools is in the latest *AIX Problem Solving Guide and Reference*.

Viewing service logs

VideoCharger outputs various service logs to pinpoint errors, including a system log, component trace logs, a content management log, and return code logs.

Viewing the general system error log

Type `errpt -a | more` to view the error messages in the general system error log.

Viewing the component trace logs

VideoCharger keeps trace logs in the `/var/adm/ras` directory that can contain error information on specific components. The trace logs are:

isc.log Application Requestor/Server log. Type `more isc.log` to view.

avscs.log

Control server log. Type `more avscs.log` to view. These messages are very useful.

avsas.log

Application server log. Type `more avsas.log` to view. To extend application server logging, type `chvssy` and `lsvssy` to modify the settings. You can enable **ERROR** (severe), **WARNING** (mild), and **INFO *trace*** (informational) messages.

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avsdex.log

Data exporter log. Type `more avsdex.log` to view. These messages might be hard to read but could provide useful information.

avsmm.log

Media manager log. Type `more avsmm.log` to view.

avslog All components log. Type `alog -f avslog -o |` more to view.

The VideoCharger logging subsystem `vssy` manages logging for the application requestor, application server, and presentation formatters. The `chvssy` command (insert ref) controls this log. The VideoCharger controller can trace API calls input and output using the script commands `csstrc`, `csetrc`, and `csgrc` found in the `/urs/lpp/avs/ras` directory.

Creating a content management service log

VideoCharger can log content management-related service messages into the `/etc/syslog.conf` file. To determine if the logging is enabled, type:

```
grep daemon.debug /etc/syslog.conf
```

If the following line is shown (and not commented out), content management service logging is specified.

```
daemon.debug      ...
```

Note the path and file name. This is where content management service messages are sent. If this line does not appear, enter the following command to specify service logging:

```
echo "daemon.debug /var/adm/ras/syslog.debug" >> \
/etc/syslog.conf
```

Create the content management service log and refresh the **syslog** daemon as follows:

```
touch /var/adm/ras/syslog.debug
refresh -s syslogd
```

Looking up return codes

Return codes that can be decoded with the `0x00800000` offset (for example, `1800008`) can be looked up in `/usr/include/avs/merror.h` (for example, `MS_NO_RESOURCES`), which is installed if you install the client development kit `avs.cs.client.adt`.

Return codes with the `0x00900000` offset (for example, `1900005`) are from the application server and can be found in `iscerror.h` (for example, `AI_INVALIDVIDEONAME`).

Report any return codes that cannot be decoded this way to IBM technical support.

Starting and stopping VideoCharger components

You can start and stop VideoCharger components by (a) using your VideoCharger home page, or (b) using the System Resource Controller (SRC) as described below.

The SRC names for the key VideoCharger components are listed in Table 3.

Table 3. SRC names for VideoCharger components

Component	SRC Name
Control server	vscs

Table 3. SRC names for VideoCharger components (continued)

Application server requestor (handles communications with Control Server)	vsasreq
Application server socket handler (handles communications with client)	vsascom
Application server logging daemon	vssy
Data pump	vsdex
RTSP Daemon	vsrtspd
Media manager	vsmm
VideoHub media manager	vsvhmm

Tips:

- The application server components are interdependent; stopping one will stop the application server from functioning.
- It can take several minutes to stop these components.

Recommendation: Start and stop components as a group. If all of the VideoCharger Server components are installed on one machine, you can start and stop all components by entering the following command on the server:

```
stopsrc -g vs
```

To stop one component, for example the Control Server, type from any AIX command prompt on the controller:

```
stopsrc -s vscs
```

To restart one or all components, use the following three scripts. If you are restarting the entire system, run them in the order that they are listed:

/etc/rc.vsdp	Data pump
/etc/rc.vscs	Control server
/etc/rc.vsas	Application server (all daemons)
/etc/rc.vsmm	Media manager
/etc/rc.vsvhmm	VideoHub media manager
/etc/rc.vsrtpd	RTSP Daemon

Solving problems with selecting, viewing, or deleting assets

If a video does not display, check the asset attributes. Enter:

```
vslist -a asset-name
```

where *asset-name* is the name of the asset you loaded into the VideoCharger Server. If the attributes are blank, enter:

```
vsparse -a asset-name
```

Network failures can also result in no video, or poor video, appearing on the client machine, as discussed in the following sections.

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Symptom: Cannot select video

1. Enter the following command to make sure daemons are running.
`lssrc -g vs`
2. Run `rpccp` to show mapping to see if the network connections are up.
3. Check the `/var/avs/config/ISC.INI` file to see if the `ap_process_user_data` flag is set to 1; if it is, the `iscblmnn` daemon must be running for a client to see a video (in order to track billing or marketing information).

Symptom: "msg catalog not found" error appears on the content management Web page

Your Apache Web server may be causing this problem. To fix it, put the following command directive into the `/etc/httpd.conf` file:

```
SetEnv LANG en_US
```

Symptom: Poor video quality

Poor video quality at the client is typically caused by VideoCharger delivery failures, long packet delays in the network, or large packet losses in the network. The following procedure can help isolate the problem:

1. Enter `/usr/lpp/avs/ras/destat` on the data pump node. Look for RTP underruns. If present, data is not being delivered fast enough to the network transmitter, which indicates that the VideoCharger is overloaded. Verify that general network traffic is not interfering with video delivery. You might have to restrict this load. Verify that there are no problems with the content storage file system.
2. Verify that the play rate for the asset is correct. The asset might be playing at a rate faster than its reservation rate.
3. View the error report to see whether the disk is experiencing long disk I/Os.
4. To detect large packet delays or large packet losses in the network, PING to the client node.

The ping command reports packet loss percentages, as well as minimum and maximum round-trip times. Large packet losses or large packet delays, combined with poor video quality to a client, indicate that the network connection to the client must be upgraded. Use the `-s` option of the ping command to set the packet size to the path MTU being used by the system to send to the client node. A `netstat -ra` command to get this number.

Symptom: QuickTime assets fail to stream

Disable the disk cache by completing the following steps:

1. From **QuickTime Player Version 4**: Click **Edit** → **Preferences** → **Streaming Transport**; from **QuickTime Player Version 5**: Click **Edit** → **Preferences** → **QuickTime Preferences**. The QuickTime Settings window opens.
2. From the **QuickTime Settings** list, select **Browser Plug-in**.
3. De-select **Save movies in disk cache**.
4. Close the QuickTime Settings window.

Symptom: Video does not appear

Inability to contact a client can be caused by VideoCharger failures, IP configuration problems, network hardware failures, or network failures.

The first thing to check is the current streaming activity. The most recent request might have exceeded the capacity of the data pump, and been rejected through Admission Control. If the data pump is running at or below capacity, use the following steps to help isolate the problem:

1. The VideoCharger is IP-based. Determine whether all IP programs are having problems by using the ping, telnet, or FTP commands to contact the client. If these methods succeed, it is likely that the problem is with the VideoCharger software. In this case:
 - a. Run `errpt` on both the data pump and controller nodes. The system reports serious error conditions in this log. VideoCharger failures are denoted by a VSC: entry under the RESOURCE_NAME heading.
 - b. Verify that the VideoCharger Server is running by typing `lssrc -g` vs. If any subsystems show inactivity, look for core files in the `/usr/bin` directory. The presence of a core file indicates a software failure that should be reported to your service representative. In any event, the VideoCharger system must be restarted to resolve the problem.
 - c. If the data pump daemon is active, enter `/usr/lpp/avs/ras/destat` to obtain statistics about the video connections being served.
 - d. Enter `netstat -A` on the data pump node. UDP entries for the client should exist if the data pump is transmitting content to the client.
 - e. Enter `netstat -A` on the controller node. Ensure that VCRPLAY (port 8500) is listening.

Important: All commands in steps 2 and 3 must be issued on the data pump node.

2. If step 1 shows that IP programs are generally failing to contact the client, IP configuration must be checked. In this case:
 - a. If IP commands appear to hang, enter `netstat -i`. If this command appears to hang, it is likely that you are experiencing name server problems or outages. Contact your network administrator.
 - b. If you receive messages of the form: A route to the remote host is not available from general IP commands, your IP routing configuration does not allow you to contact the client. Enter `netstat -ra` to obtain a summary of the nodes routing table. Add a route to the client to resolve the problem.
 - c. If you receive messages of the form: The network is not currently available from general IP commands, you must check the network hardware on the data pump node. Proceed to step 3.
 - d. If your routing appears correct, and no error messages are generated from general IP commands, enter `arp -a`. Look for an entry for the client or the gateway to the client. If an entry exists or an incomplete entry exists, you must check network hardware on the data pump node. Proceed to step 3.
3. To verify that a network interface is available to IP, that IP is transmitting data to that interface, and that data is actually being transmitted, complete the following steps:
 - a. Enter `netstat -i`. If the interface name is reported with an asterisk (*), the interface is down. Enter `ifconfig` to start the interface. If the interface is up, then the number of output packets (opkts) should be increasing if IP is transmitting.
 - b. Enter `iptrace -i interfacename -d clienthostname` to trace IP packets sent to the clients. This command should show UDP packets being transmitted on the interface to the client node.

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- c. If steps 3a and 3b show IP activity to the client node, enter `netstat -v`. This command reports detailed adapter statistics. Look for error conditions being reported on the interface. In addition, enter `errpt` to obtain a report of serious errors on the network adapter.
4. If step 3 shows IP activity and that data is being transmitted on the network interface, but IP programs are still failing, then the problem is likely with the network or with the client. Follow steps 2 and 3 at the client.
Tip: The syntax for the `netstat` and `arp` commands varies with the type of client. The `iptrace` command is AIX-specific.

Solving content loading problems

Symptom: Cannot load content

This section provides procedures to solve asset loading problems.

Check the control server error log regularly to see if it includes error messages for you to investigate. To view the error log, enter:

```
pg /var/adm/ras/avscs.log
```

You should also ensure that you have enough space on all file systems. To display information about all mounted file systems, enter:

```
df
```

Important: When investigating content-loading problems, do not change the `/etc/resolv.conf` file. The following `/etc/resolv.conf` errors do not affect single threaded commands like PING and FTP, but do cause the VideoCharger's multi-threaded programs to fail:

```
invalid domain  
non-existent domain name server
```

Checking data pump configuration files

To check the data pump configuration files:

1. Look at the `/etc/services` file for the CM service:

```
grep vip /etc/services
```

You should see a single entry that looks like this:

```
vip          4324/tcp
```

The number 4324 can vary, but it must match the CM port number that you see when you run the `lsvsd` command.

2. Make sure no other service is using the same CM port number:

```
grep " 4324/tcp" /etc/services
```

If the `grep` commands in steps 1 and 2 produce identical results, this means that 4324 is used by another service. You will need to change the port number in this file, and then change it on the data pump using the `chvsdp` command.

3. Look at the `/etc/inetd.conf` file:

```
grep vip /etc/inetd.conf
```

This command should produce the following output:

```
vip stream tcp nowait root /usr/bin/vip vip -b 256 -R 1323
```

If either the `/etc/services` or the `/etc/inetd.conf` files are modified, you must refresh the `inet` daemon as follows:

```
refresh -s inetd
```

Verifying content management configuration using FTP

Use `lsvsdp` first to list all the data pumps (`lsvsdp`). Then call it again with the name of the data pump to get the rest of the info (e.g. `lsvsdp -l dp0`). It will list "CM hostname, CM Port number, CM ID, CM Password". But "CM Password" is "*", masked out.

To verify your content management configuration using FTP:

1. Enter the `lsvsdp` command to list all the data pumps.
2. Enter `lsvsdp -l data_pump_name` to get the content management (CM) host name, port number, user ID, and password. Verify this information using FTP as follows:

```
FTP CM_host_name CM_port_number
Multi Media Content Transfer server ...
Name: CM_user_id
Password: CM_password
FTP> quit
```

`CM_port_number` is 4324 unless you reassigned VIP to another port number.

3. After this test is successful, use the `lsvssg` command to get the stripe group mount path. Then use FTP again as follows:

```
FTP CM_host_name ftpD_port_number
FTP server ...
Name: CM_user_id
Password: CM_password
FTP> put test_file stripe_group_mount_path/foo
FTP> delete stripe_group_mount_path/foo
FTP> quit
```

Tip: If the FTP command reconnects to the *Multi Media Content Transfer server*, you will need to determine the `ftpD_port_number`, which is specified in the `/etc/services` file on the `CM_host_name` machine.

The test file can be any file on the machine from which the FTP command is run.

Checking permissions on the data pump

To check permissions on the data pump:

1. Use SMIT to get the groups to which the CM user ID (usually `vsloader`) belongs:
 - a. Enter `smit users`.
 - b. Select **Change/Show Characteristics of a User**.
 - c. Enter the CM user ID in the **User NAME** field.
 - d. Look at the **Primary GROUP** and **Group SET** fields. These are the groups to which the CM user ID belongs. `vsasset` should be listed in **Group SET**.
2. Determine access to each mount path of each stripe group. For example, if a stripe group path `/mmfs/sg0`, enter:

```
ls -l -d /mmfs/sg0
```

Review the list of directory and file permissions and owner and group IDs that these commands produce. Ensure that the CM user ID has read/write access.

3. Look at access permissions:

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```
ls -l /etc/objrepos/AVSpatt
```

Again, make sure the CM user ID has read/write access.

4. Look at the CM command itself:

```
ls -l /usr/bin/vip
```

This command should produce the following output:

```
-r-sr-xr-x 1 root system ...
```

5. Finally, look through `/var/avs/config/pg.cfg` by typing the command:

```
ls -l /var/avs/config/pg.cfg
```

Make sure that the CM user ID has read access to each directory and to the `pg.cfg` file. If the file is missing (and you are not using MMFS) you should recalibrate your stripe group.

Checking file system performance groups

Look at the `/var/avs/config/pg.cfg` file:

```
grep content-storage-filesysytem /var/avs/config/pg.cfg
```

You should see a line for each stripe group. If you don't, go to your Configuration and Administration Web page, click **Configure Storage**, and click **Change a Stripe Group** to create the missing performance groups.

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Chapter 7. Configuring VideoCharger on Windows

This chapter covers the following ways to change your VideoCharger configurations:

- “Changing the VideoCharger Server configuration”
- “Calibrating your VideoCharger Server” on page 94
- “Changing the administration user ID or password” on page 97

You can also back up VideoCharger as instructed in “Backing up your VideoCharger system” on page 97.

Changing the VideoCharger Server configuration

Log in to your admin VideoCharger home page and click **CONFIGURATION AND ADMINISTRATION** for a list of configuration options. Then, click **Configure VideoCharger Server** on the Configuration and Administration page.

To change any of the configuration options, type the new value and click **Submit**. You must then restart the VideoCharger Server. The configuration options are:

Default Content Directory

In this field, type the full directory path where content files are to be stored if the target directory is not explicitly specified when the content is loaded. The default is the data\content subdirectory of the VideoCharger installation directory.

Important: You are strongly advised against storing content on drives where the Windows operating system or paging files are stored.

For more information about configuring storage for VideoCharger content, see Chapter 9, “Managing space for your VideoCharger assets on Windows” on page 109.

Metadata file type

In this field, select **DYNAMIC**, which is the default, to generate metadata files dynamically when the user requests to view a particular video asset. Select **STATIC** to generate metadata files when a new asset is loaded or when an existing asset is modified. Metadata files are used to provide control information to the VideoCharger Player when a video asset is accessed for viewing. Metadata files for existing assets are not automatically generated, but can be generated using the vsmeta command.

VideoCharger Administrator Username

In this field, type the user ID used by the VideoCharger Server to load assets from a remote host, and by the Archive Server to stage assets to this VideoCharger Server. This user ID must have read and write access to the default content directory.


VideoCharger Administrator Password

In this field, type the password associated with the user ID provided in the **VideoCharger Administrator Username** field. The user ID and password are used by the VideoCharger Server to load assets from a remote host, and by the Archive Server to stage assets to this VideoCharger server.

Calibrating your VideoCharger Server

VideoCharger automatically calibrates the VideoCharger Server to default values during installation. To modify these settings, use the **Calibrate VideoCharger Server Resources** form (see Figure 2 on page 95) from your Configuration and Administration page. The form lets you modify the following components:

- Disk: logical drives, bandwidth, threshold
- Network: IP address, bandwidth, threshold, unicast MTU multiplier, multicast MTU
- System: CPU usage, CPU threshold, memory usage, memory threshold, timer



Calibrate VideoCharger Resources

Use this form to tune disk, network, and system resource usage. All threshold values are percentages. The VideoCharger server must be stopped and restarted after any changes to disk or network resources.

[[Configuration and Administration](#) | [Help](#)]

Disk

Logical Drives	Bandwidth	Threshold	
C:	27934540	80	Update
D:	22934004	80	Update
	0	80	New Disk

Recalibrate all disks
Start Video Server
Stop Video Server

[Display Video Server Status](#)

Network

IP Address	Bandwidth	Threshold	Unicast MTU Multiplier	Multicast MTU	
10.10.10.35	100000000	40	1	1053	Update
9.112.18.161	160000000	40	1	1053	Update
	0	40	1	1053	New Interface

Recalibrate all network interfaces
Start Video Server
Stop Video Server

[Display Video Server Status](#)

System

CPU Usage	CPU Threshold	Memory Usage	Memory Threshold	Timer	
1	99	53	99	60	Update

[[Configuration and Administration](#) | [Help](#)]

Figure 2. Calibrate VideoCharger Resources form

Calibrating the disk

You can modify the following values:

Logical Drives

The logical drive field represents the drive letter that you store VideoCharger resources on. If you add a hard disk after initially installing

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VideoCharger, input the drive letter followed by a colon, (for example, E:) in the field and click **New Disk**. If you remove disks or change the disk partition configuration, click **Recalibrate all disks**.

VideoCharger assumes that each drive letter represents one hard disk. If you split your hard disk into multiple partitions, you must input all the drive letters on the same line (separated by colons). For example, C: D: E:. This prevents VideoCharger from overcommitting disk resource.

Bandwidth

To automatically calibrate the bandwidth performance for a new or existing disk, set the bandwidth to 0. VideoCharger automatically determines it.

Threshold

Threshold indicates the bandwidth percentage for VideoCharger to use.

You must **Stop** and **Start** the VideoCharger for changes to take effect.

Calibrating the network

You can modify the following values:

IP Address

The IP address identifies the network interfaces, and should indicate the primary IP address of each adapter. For network interfaces with multiple IP addresses, VideoCharger only uses the first address. If you add a network interface after initially installing VideoCharger, input the IP address in the field and click **New Interface**. If you change an IP address or remove an interface, click **Recalibrate all network interfaces**.

Bandwidth

Specifies the fastest possible bandwidth (in bits per second) for your disk. To automatically calibrate the bandwidth performance for a new or existing disk, set the bandwidth to 0. VideoCharger automatically determines it.

Threshold

Threshold indicates the bandwidth percentage for VideoCharger to use.

Unicast MTU Multiplier

During VOD streaming from each network interface, VideoCharger multiplies the size of every network packet by the number in this field. For example, a Unicast MTU Multiplier value of 2 doubles the packet size that VideoCharger sends. VideoCharger initially bases this value on network configuration. Although increasing this value can reduce Server load and help improve stream capacity, it can also increase playback degradation if these larger packets get lost in the network (for example, due to congestion). This parameter does not get used for QuickTime assets.

Multicast MTU

The Multicast MTU field specifies the minimum network packet byte size during multicast streaming from each network interface. Since VideoCharger cannot determine the complete route to each multicast client during stream initialization, VideoCharger defaults this value to 1053 bytes. Although increasing this value can reduce Server load during multicast streaming and help improve streaming capacity, it can also increase playback degradation if these larger packets get lost in the network (for example, due to congestion). This parameter does not get used for QuickTime assets.

You must **Stop** and **Start** the VideoCharger for changes to take effect.

Calibrating the system

You can modify the following values:

CPU Threshold

CPU Threshold specifies the maximum usage percentage that the **CPU Usage** cannot exceed (VideoCharger only displays the CPU Usage percentage when the Server is running). Whenever the CPU Usage exceeds the Threshold, VideoCharger prevents new streams from starting until the Usage decreases below Threshold again.

Memory Threshold

Memory Threshold specifies the maximum usage percentage that the **Memory Usage** cannot exceed (VideoCharger only displays the Memory Usage percentage when the Server is running). Whenever the Memory Usage exceeds the Threshold, VideoCharger prevents new streams from starting until the Usage decreases below Threshold again.

Timer The Timer value indicates how often (in seconds) that VideoCharger gathers Usage data.

Changes to these settings take effect on the VideoCharger Server immediately.

Changing the administration user ID or password

You can change the administrator's user ID or password using the `vsconfig` command:

```
vsconfig -U new_userID -P new_password -r
```

where *new_userID* represents the renamed administrator's user ID and *new_password* represents the new password.

You can also use `vsconfig` to manually grant permission to a component's Windows services (installation automatically sets this though).

Backing up your VideoCharger system

When you back up your system, you take snapshots of all or part of your system to ensure that your system configuration is not lost. Given the storage requirements of multimedia assets, it is often not practical to back them up; however, you can keep records of your multimedia assets.

Recommendation: Backup up your system when no loading or deleting of assets is occurring to ensure that the control server's catalog of assets is up to date.

For Windows VideoCharger, back up the system configuration information. Configuration information for the VideoCharger server is stored in the Windows Registry. The entire Registry should be backed up whenever new products are added or removed from the system.

To back up the Registry:

1. Click **Start** on the Windows taskbar.
2. Select **Run**.
3. In **Open**, select or type REGEDIT.
4. Click **OK**. The Registry Editor window opens.

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5. Click **Registry** → **Export Registry File** from the menu bar in the Registry Editor window.
6. In the **File name** field, type the name that you want to use for your backup file.
7. Select **All**.
8. Click **Save**.

Check the VideoCharger Web site at <http://www.ibm.com/support/data/videocharger> for updates to backing up your system.

Chapter 8. Managing VideoCharger content on Windows

You can manage Windows VideoCharger content in the following ways:

- “Managing content from your VideoCharger home page”
- “Managing content with commands” on page 106
- “Writing your own custom content loader” on page 107

Managing content from your VideoCharger home page

To manage your content using the Web forms, login to your VideoCharger admin home page and click **CONTENT MANAGEMENT**. You can then click **Manage Content** to add or manage your assets. Or, you can click **Manage Multicast** to schedule the broadcast of an asset.

Managing assets

From the Content Management page, click **Manage Content**. You can select one of the following operations:

Add new assets

Adds local assets to the VideoCharger Server. See online help for details.

Import assets from a remote host

Adds new assets from a remote host to the VideoCharger Server.

Modify information for existing assets

Modifies assets' attributes. For example: bit rate, type, and duration. See online help for details.

Delete assets

Deletes assets. Select an asset or assets and click **Delete Assets** to delete.

Stage assets

Copies assets from one server to another. For example, from the VideoCharger Server to another Server, from the VideoCharger Server to the Multimedia Archive, or vice versa. Ignore **Asset Group Name**. Selecting **Load and Play** allows a client to stream the asset while it loads. **Load rate** specifies how many bits per second to load. Default is Best Effort mode (utilizing all available network bandwidth for transfer). If the asset's bit rate exceeds this value, the streaming terminates abnormally.

Export existing assets

Exports assets from the VideoCharger Server to any machine with an FTP daemon.

List existing assets

Lists all assets on the VideoCharger Server. You can click on a listed asset to see its attributes.

Fields marked with an asterisk (*) are mandatory. See the online help for additional information for each of these operations.

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Multicasting assets

From the Content Management page, click **Manage Multicast**. You can schedule a *multicast* (streaming an asset to multiple clients at the same time) using the following operations:

List Displays the currently scheduled multicast jobs.

Add Schedules a multicast job. See “Scheduling a multicast event” on page 8 for details.

Change Modifies the settings for a scheduled multicast job.

Remove Removes a scheduled multicast job.

Use the detailed online help for guidance in completing each form.


Attention: You cannot multicast over ATM when it is configured for classic IP because of a virtual circuit (point-to-point connection) between the host pair.

Scheduling a multicast event

You can schedule a Windows multicast in the following ways:

- “Multicasting an existing asset”
- “Multicasting an asset from an encoder” on page 102
- “Recording an asset from an encoder” on page 104
- “Simultaneously recording and multicasting from an encoder” on page 105

Multicasting an existing asset: To multicast an existing asset, click **Multicast of an Existing Asset** from the manage multicast page and fill in all asterisk-marked fields. See Figure 3 on page 101 for a sample of a completed form about a models video that will broadcast on September 14, 2000, at 4:17 p.m.



Add an Event

Supply information in the fields provided. Fields marked with **\ are required.

Advanced

Event Description *

Asset Name *

Multicast Target Information:

Destination Address *

Destination Port *

Schedule Information:

Start Time Schedule Now

CC: YY: MM: DD: hh: mm: ss:

Figure 3. Add a Multicast Job form

Field descriptions are as follows:

Event Description (required)

Briefly describes the event. For example, Model Multicast - Testing.

Event Description URL (Advanced only)

Specifies a Web address that provides more information on the event.

Event Type (Advanced only)

This option specifies whether you want to multicast from an encoder, record from an encoder, or both.

Asset Name (required)

Specifies the name of the asset. For example, models_mpg.

Bit Rate (Advanced only)

Specifies the bits per second to play the asset. For example, 50000 bits per second.

Destination Address (required)

Specifies the Internet Protocol (IP) address to which you want the asset played. You can enter either:

- A valid dotted decimal network address within the Class D Internet multicast group addresses. The multicast group addresses range from 224.0.0.0 through 239.255.255.255. However, do not use any addresses between 224.0.0.0 and 224.0.0.255 (inclusive) because they are reserved for routing protocols.
- A valid dotted decimal network address or host name within the Class A, B, or C Internet address range (such as 124.35.0.3) if you want to stream an asset to only one client.

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Destination Port (required)

Specifies the User Datagram Protocol (UDP) or Transmission Control Protocol (TCP) port number to which the content is to be played. Although valid ports range from 0 to 65536, users should pick the user-developed range between 5001 and 65536.

Transport Protocol (Advanced only)

Specifies the transport protocol for playing the asset. The default, Real Time Protocol (RTP), is required for multicasting. RTP also works for unicast jobs (streaming to one client). TCP only works on unicast jobs. If you select it, you must also specify a unicast address in the Destination Address field.

Send Interfaces (Advanced only)

Specifies up to five valid IP interfaces, by name or by dotted-decimal form, to multicast the asset. Separate each interface by a space. The VideoCharger Server contacts the interfaces randomly until it reaches one that can successfully transmit the asset. To receive loopback packets, the sending interface has to join the multicast group and enable the loopback transmission.

Time To Live (Advanced only)

Specifies how many multicast routers a network packet can pass before termination. For example, a Time To Live (TTL) value of 16 indicates that the asset can survive 16 interim multicast routers (assuming they all use a TTL threshold of 1) in an attempt to reach the final destination. Each multicast router decrements the packet TTL by one. Whenever the packet TTL decrements below the router's TTL threshold, the router discards that packet.

Start Time

Schedules what time to stream the asset. If you choose to **Schedule** rather than multicast **Now**, fill in the following fields:

CC First two digits of the year (the century).

YY Last two digits of the year. Valid years range from 1996 to 2037.

MM Month of the year. Ranges from 01 to 12.

DD Day of the month. Ranges from 01 to 31.

hh Hour of the day. Ranges from 00 to 23.

mm Minute of the hour. Ranges from 00 to 59.

SS Second of the minute. Ranges from 00 to 59.

Loop Count (Advanced only)

Specifies how many times to play the asset. Default is 1. Input 0 to play the asset forever.

To submit the form, click **Add**. To clear the fields on the form, click **Reset**.

Multicasting an asset from an encoder: In this operation, the encoder can broadcast a live analog signal (for example, from a video camera or VCR). You must have an installed and configured encoder in your VideoCharger system for this operation to work. For more information on configuring an encoder port for VideoCharger, see "Configuring an encoder port" in *Planning and Installing VideoCharger*.

To multicast an asset from an encoder, click **Multicast from Encoder** and fill in all asterisk-marked fields.

Field descriptions are as follows:

Event Description (required)

Briefly describes the event. For example, 1Q01-results.

Event Description URL (Advanced only)

Specifies a Web address that provides more information on the event.

Event Type (Advanced only)

Specifies one of the following event types: multicast from encoder, record from encoder, or multicast and record from encoder.

Source (required)

Specifies the logical encoder name as the source for the multicast event. You can find this out by clicking **Configure Encoder** and then **List** in the Configuration and Administration page.

Bit Rate (Advanced only)

Specifies the bits per second to play the asset. For example, 50000 bits per second.

Destination Address (Advanced only)

Specifies the Internet Protocol (IP) address to which you want the asset played. You can enter either:

- A valid dotted decimal network address within the Class D Internet multicast group addresses. The multicast group addresses range from 224.0.0.0 through 239.255.255.255. However, do not use any addresses between 224.0.0.0 and 224.0.0.255 (inclusive) because they are reserved for routing protocols.
- A valid dotted decimal network address or host name within the Class A, B, or C Internet address range (such as 124.35.0.3) if you want to stream an asset to only one client.

Destination Port (Advanced only)

Specifies the User Datagram Protocol (UDP) or Transmission Control Protocol (TCP) port number to which the content is to be played. Although valid ports range from 0 to 65536, users should pick the user-developed range between 5001 and 65536.

Transport Protocol (Advanced only)

Specifies the transport protocol for playing the asset. The default, Real Time Protocol (RTP), is required for multicasting. RTP also works for unicast jobs (streaming to one client). TCP only works on unicast jobs. If you select it, you must also specify a unicast address in the Destination Address field.

Send Interfaces (Advanced only)

Specifies up to five valid IP interfaces, by name or by dotted-decimal form, to multicast the asset. Separate each interface by a space. The VideoCharger Server contacts the interfaces randomly until it reaches one that can successfully transmit the asset. To receive loopback packets, the sending interface has to join the multicast group and enable the loopback transmission.

Specify the **Send Interface** field when you schedule multicasts from a VideoCharger system that has multiple network interfaces. If there are multiple TCP/IP interfaces in the VideoCharger system and a multicast

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event is scheduled without setting **Send Interfaces**, the multicast is sent over the first available interface. If the intended clients are connected to a network that is not reachable from the interface over which the multicast is sent, the clients will not receive the multicast.

Time To Live (Advanced only)

Specifies how many multicast routers a network packet can pass before termination. For example, a Time To Live (TTL) value of 16 indicates that the asset can survive 16 interim multicast routers (assuming they all use a TTL threshold of 1) in an attempt to reach the final destination. Each multicast router decrements the packet TTL by one. Whenever the packet TTL decrements below the router's TTL threshold, the router discards that packet.

Record Mode (Advanced only)

Specifies one of the following record modes: create a new asset for recording, overwrite the existing asset, or append the record to the existing asset.

Asset Name (required)

Specifies the name of the asset. For example, 1Q01-results.

New Asset File (required)

Specifies the new asset filename if you selected **Create New Asset**.

Start Time

Schedules what time to stream the asset. If you choose to **Schedule** rather than multicast **Now**, fill in the following fields:

CC First two digits of the year (the century).

YY Last two digits of the year. Valid years range from 1996 to 2037.

MM Month of the year. Ranges from 01 to 12.

DD Day of the month. Ranges from 01 to 31.

hh Hour of the day. Ranges from 00 to 23.

mm Minute of the hour. Ranges from 00 to 59.

SS Second of the minute. Ranges from 00 to 59.

Duration (required)

Specifies the time to record in seconds. For example, 7200 seconds (2 hours).

To submit the form, click **Add**. To clear the fields on the form, click **Reset**.

Recording an asset from an encoder: In this operation, the encoder can record a live analog signal (for example, from a video camera or VCR) into a digitally compressed file (for example, MPEG). You must have an installed and configured encoder in your VideoCharger system for this operation to work. For more information on configuring an encoder port for VideoCharger, see "Configuring an encoder port" in *Planning and Installing VideoCharger*.

To record an asset from an encoder, click **Record from Encoder** and fill in all asterisk-marked fields (fields are identical to the ones described in "Multicasting an asset from an encoder" on page 102, except that **Record Mode** becomes a required field). See Figure 4 on page 105 for a sample of a completed form about a record event for May 30, 2000 at noon for 20 minutes. As a result of the event,

VideoCharger creates *both* a e:\video\1Q01.results.mpg media file and an asset in the Server named 1Q01-results.

Add an Event

Supply information in the fields provided. Fields marked with ** are required.

Advanced

Event Description * 1Q01-results

Source * FutureTel

Target Asset Information:

Record Mode * Create New Asset
 Overwrite Existing Asset
 Append to Existing Asset

Asset Name * e:\video\1Q01.results.mpg

New Asset File * 1Q01-results

Schedule Information:

Start Time Schedule Now

CC: 20 YY: 01 MM: 05 DD: 30 hh: 12 mm: 00 ss: 00

Duration * 7200

Add Reset

Figure 4. Record an asset

Simultaneously recording and multicasting from an encoder: In this operation, the encoder can record and broadcast a live analog signal (for example, from a video camera or VCR) at the same time. You must have an installed and configured encoder in your VideoCharger system for this operation to work. For more information on configuring an encoder port for VideoCharger, see "Configuring an encoder port" in *Planning and Installing VideoCharger*.

To record an asset from an encoder while multicasting it, click **Record and Multicast from Encoder** and fill in all asterisk-marked fields (fields are identical to the ones described in "Multicasting an asset from an encoder" on page 102, except that **Destination Address**, **Destination Port**, and **Record Mode** all become required fields). See Figure 5 on page 106 for a sample of a completed *Advanced* form that simultaneously records and multicasts an event from an encoder port. The event scheduled in Figure 5 on page 106 is named Event and will be multicast to the 224.0.0.2 TCP/IP interface for 30 minutes on April 28, 2002 at 1:00 p.m.

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Add an Event

Supply information in the fields provided. Fields marked with an "*" are required.

Event Description *

Event Description URL

Event Type *

Source *

Bit Rate

Multicast Target Information:

Destination Address *

Destination Port *

Transport Protocol RTP TCP

Send Interfaces

Time To Live

Target Asset Information:

Record Mode * Create New Asset
 Overwrite Existing Asset
 Append to Existing Asset

Asset Name

New Asset File

Schedule Information:

Start Time Schedule Now
CC: YY: MM: DD: hh: mm: ss:

Duration *

Figure 5. Record and Multicast from Encoder

This example assumes that an encoder is installed and configured in the VideoCharger system. For more information on configuring an encoder port for VideoCharger, see "Configuring an encoder port" in *Planning and Installing VideoCharger*.

Managing content with commands

You can use content management commands either (a) at the Windows prompt, or (b) within Windows shell scripts for batch loading. The commands require vsadmin or vsloader authority.

Table 4. Content management commands

Command	Purpose
vslist	Lists asset attributes, lists all assets in a default asset group, or lists all existing asset groups.
vsload	Loads an asset from a remote host.
vsparse	Updates frame rate, play rate, duration, and type attributes for an asset.
vsupdate	Updates an asset's attributes.
vsdelete	Deletes a video asset.
vsstage	Stages (copies) an asset from one server to another.

Table 4. Content management commands (continued)

Command	Purpose
vsadd	Loads an asset from a local directory.
vsmeta	Generates metadata for an asset.

For full details on all content management commands, refer to Chapter 12, “Content management commands for VideoCharger on Windows” on page 133. For details about reading syntax diagrams, see “Reading syntax statements” on page 115.

Writing your own custom content loader

Write your own content loader using VideoCharger APIs if (a) you want a customized loader, or (b) you want to record assets directly from a stream. All APIs are documented in the *Programmer's Reference*.

Chapter 9. Managing space for your VideoCharger assets on Windows

On Windows, assets are stored in the Windows file system (NTFS). This chapter describes the tasks associated with managing file systems.

The multimedia assets for your VideoCharger for Windows are stored in the NTFS. Windows also provides a disk administrator utility with several options that you can use to configure your disks, for example:

- Define one or more logical drives for each physical drive
- Define a mirror set from multiple drives
- Define a volume set to map multiple physical drives into a single logical drive
- Define stripe sets across multiple physical drives to represent a single logical drive

Defining logical volumes

You can define any of the following types of logical volumes for storing your multimedia content. All logical volumes are represented by a drive letter that is assigned when the logical volume is created.

logical drive

Consists of a portion of a physical disk drive that is configured to act as a separate disk.

mirror set

Consists of two identical partitions on different physical disks.

This configuration helps to protect data by storing two copies of each file, one copy in each partition. The primary advantage of mirror sets is that the data is still available if one of the drive fails. The disadvantage is that multimedia content files are often large, static files, and storing two copies uses twice as much space.

volume set

Consists of space across multiple disks, combined to create a single logical volume. Only *entire* drives recommended to accurately calibrate performance.

The primary advantage of volume sets is the ability to combine small areas of physical drives into one large, logical volume. The disadvantage is that the entire volume set is unusable when a failure occurs for any drive included in the volume set.

stripe set

Consists of space across multiple disks that is combined to create one large, logical volume. Files are stored across multiple physical disks by writing data in blocks (also called stripes) on all the members of the stripe set.

The advantage of stripe sets is that the VideoCharger can determine the bandwidth a disk is capable of supporting and store and retrieve data more efficiently across multiple disks. Used with Redundant Array of Independent Disks (RAID), stripe sets provide an option called striping with parity that ensures that data is accessible if a single drive fails.

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Recommendation: Disks used in a stripe set defined to store multimedia content should not be used for other purposes or by other applications.

Creating logical drives for storing content

One or more logical drives might be sufficient to meet your streaming needs. Consider using logical drives when you have a small number of assets to store or when you expect few simultaneous requests for any one asset.

Recommendation: For performance reasons, do not define logical drives for multimedia content on the same physical drive used as the Windows system drive or on drives being used for paging space. Also, define each logical drive for multimedia content on a separate physical disk to avoid overcommitting disk bandwidth.

To create a logical drive:

1. Create an extended partition for the logical drive, if you have not already done so. To create an extended partition:
 - a. Click **Start** on the Windows taskbar.
 - b. **Windows NT:** Click **Programs** → **Administrative Tools** → **Disk Administrator**; **Windows 2000:** Click **Programs** → **Administrative Tools** → **Computer Management**, double-click **Storage**, and click **Disk Management**.
 - c. **Windows NT:** Click in the area marked **Free Space**; **Windows 2000:** Right-click on the unallocated region, click **Create Partition**, and follow the directions in the Create Partition wizard.
 - d. **Windows NT only:** Click **Partition** → **Create Expanded**.
 - e. **Windows NT only:** Set **Create partition of size** to the size of the extended partition that you want to create.
 - f. **Windows NT only:** Click **OK**.
2. **Windows NT only:** Configure the logical drive on the extended partition using the disk administrator:
 - a. Click **Start** on the Windows task bar.
 - b. Click **Programs** → **Administrative Tools** → **Disk Administrator**.
 - c. Click in the extended partition in which you want to define the logical drive.
 - d. Click **Partition** → **Create**.
 - e. Type the size of the logical drive that you want to create.
 - f. Click **OK**.
 - g. Close the Disk Administrator window.
 - h. Click **Yes** when prompted to save your changes.
3. Restart your system for the changes to take effect.
4. Format the logical drive that you just created:
 - a. Double-click the **My Computer** icon on your desktop.
 - b. Select the logical drive that you want to format.
 - c. Click **File** → **Format** from the menu bar.
 - d. In the **File System** field, type NTFS.
 - e. Click **Start**.

Storing content in software stripe sets

Configure multiple disks into one or more stripe sets if you plan to store a large number of assets or support a large number of simultaneous accesses to any asset.

A Redundant Array of Independent Disks (RAID) is a configuration of multiple physical disks combined into a single large, logical disk. You can use RAID for your stripe sets.

This section describes the software RAID system provided with Windows. Windows supports disk striping without parity (RAID 0) and disk striping with parity (RAID 5). Disk striping with parity improves reading performance but slows writing performance. If a single physical disk fails, the data is usually recoverable. Without parity, the data is unrecoverable if a disk fails.

To define a stripe set with parity:

1. Click **Start** on the Windows taskbar.
2. Click **Programs** → **Administrative Tools** → **Disk Administrator**. The Disk Administrator window opens.
3. Select the **Free Space** areas on at least three physical drives that you want to use for the stripe set. The free spaces do not have to be of equal size.
Select the first area by clicking **Free Space** on one disk. Select additional areas by pressing the Ctrl key down and clicking **Free Space** on additional disks.
Recommendation: Physical disks used in the stripe set should be dedicated to the stripe set.
4. Click **Partition** → **Create Stripe Set**.
5. Enter the size of the stripe set that you want to create.
6. Click **OK**.
7. Close the Disk Administrator window.
8. Click **Yes** when prompted to save your changes.
9. Restart your system for the changes to take effect.
10. Format the stripe set that you just created:
 - a. Double-click the **My Computer** icon on your desktop.
 - b. Select the logical drive that you want to format.
 - c. Click **File** → **Format** from the menu bar.
 - d. In the **File System** field, type NTFS.
 - e. Click **Start**.

Attention: If you modify disk partitions after installing VideoCharger, you must recalibrate your disks using the calibration Web page. See “Calibrating your VideoCharger Server” on page 94 for more information.

Chapter 10. Monitoring your VideoCharger Server on Windows

You can monitor the performance and check the status of your VideoCharger Server using Windows tools. For information about standard system commands and general performance guidelines, see the *Windows Workstation Resource Guide* and the *Windows Server Concepts and Planning*.

You can use existing Windows resources to monitor VideoCharger. The following sections describe:

- “Monitoring VideoCharger performance”
- “Getting status with the Windows service manager”

Monitoring VideoCharger performance

You can monitor your overall system performance using standard Windows performance-monitoring tools. Keep all utilizations below 80% for the best performance.

Tip: This section focuses on available tools. For information on commands shown in Table 5, see the *Windows Workstation Resource Guide* or *Windows Server Concepts and Planning*.

Table 5. Windows commands for monitoring your server

Command	Purpose
<code>taskmgr</code>	<ul style="list-style-type: none">• Monitors active processes and their resource consumption, such as CPU time and virtual memory.• Stops active processes.• Displays the overall system CPU and memory consumption.
<code>netstat</code>	Displays network I/O information.
<code>perfmon</code>	Microsoft tool that provides a detailed graphical display of system resources, including CPU, memory, network interfaces, disk bandwidth, and paging space.

Use the performance monitor (`perfmon`) for a graphical display of many key performance characteristics of your Windows system. Some components, such as network interfaces, require that additional services be installed, such as the SNMP service for collecting specific performance data.

Getting status with the Windows service manager

Use the Windows Service Manager to get status information about services and to start and stop Windows services. To start the service manager:

1. Click **Start** on the Windows taskbar.
2. **Windows NT:** Click **Settings** → **Control Panel**; **Windows 2000:** Click **Settings** → **Administrative Tools** → **Control Panel**.
3. Double-click the **Services** icon. The Services window opens.
4. Double-click the VideoCharger Server component that you want to start, stop, or get status on:

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- lantv_ar (Application requestor)
- lantv_cs (Control server)
- lantv_de (Data exporter)
- lantv_mm (Media manager)
- lantv_vhmm (VideoHub media manager)
- lantv_rt (RTSP Daemon)
- lantv_sc (Scheduler)
- lantv_vi (Video input)

Tip: You can also use commands or your VideoCharger home page to start, stop, or get status on VideoCharger components.

Chapter 11. System management commands for VideoCharger on Windows

This section contains commands available to configure and manage your server. Although you can enter some commands by simply typing one word, other commands use flags and parameters. Each command has a syntax that designates the required and optional flags and parameters. The general format for a command is:

```
CommandName flags parameters
```

Some general rules about commands are:

- To run a command, type the command name at the system prompt, and press Enter.
- After the command name, there can be a number of flags. Flags are also called *options*. Flags are separated by spaces or tabs and usually start with a hyphen (-). For example, in the following command:

```
vslist -A
```

`vslist` is the command name and `-A` is the flag.

- After the command name, there can be a number of flags, followed by parameters. Parameters are also called *arguments* or *operands*. Parameters specify information the command needs to run. If you don't specify a parameter, the command might assume a default value. For example, in the following command:

```
vslist -a topgun
```

`vslist` is the command name, `-a` is the flag, and `topgun` is the parameter. This command displays the attributes of asset `topgun`. In the following example:

```
vslist
```

No parameter is given so the default value is assumed and all existing assets are listed.

For parameters that are or contain a numeric value, the number is interpreted as a decimal integer, unless otherwise specified.

- Spaces between commands, flags, and parameters are significant.
- Command flags are case sensitive, so `soipplay -S` is not the same as `ipplay -s`.

Reading syntax statements

Syntax statements tell you how to enter commands from the command line. The statements consist of symbols such as brackets ([]), braces ({ }), and vertical bars (|).

The following conventions are used in the command syntax statements:

- Items that must be entered literally on the command line are in **bold**. These include the command name, flags, and literal characters.
- Items representing variables that must be replaced are in *italics*.
- Parameters not enclosed in brackets are required.

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- Parameters enclosed in brackets are optional.
- A vertical bar signifies that you choose only one parameter. For example, `a | b` indicates that you can choose `a` or `b`.
- Ellipses (`...`) signify that the parameter can be repeated on the command line.
- The hyphen (`-`) represents standard input.

The following is a sample of a syntax statement for the `rmvsag` command:

```
rmvsag -l agname [ -d | -q ]
```

In this example, the `-l` flag and its parameter *agname* are required. Either the `-d` or the `-q` flag can be used, but neither one is required.

Displaying information about a command

Entering a command with the `-?` flag displays information about the syntax of that command.

System management commands on Windows

This section describes the system management commands for the VideoCharger server for Windows. For information about how to read command syntax statements, see “Reading syntax statements” on page 115.

All system management commands require administrator authority and must be entered from the system where the VideoCharger resides.

Configuring system components

Use the following commands to configure system components:

<code>vsconfig</code>	Configure the VideoCharger operating environment.
<code>mkvsport</code>	Create the encoder port.

Modifying system component attributes

Use the following commands to modify system component attributes:

<code>vsconfig</code>	Change the VideoCharger configuration.
<code>chvsport</code>	Change the encoder port attributes.

Removing system components

Use the following command to remove system components:

<code>rmvsport</code>	Remove the encoder port.
-----------------------	--------------------------

Listing system components and attributes

Use the following commands to list system components and attributes:

<code>vsconfig -D</code>	Display the VideoCharger configuration.
<code>lsvsport</code>	List the encoder port attributes.

Recommended order to run commands

To configure the system, run the commands in the following sequence.

1. `vsconfig`
2. `mkvsport`

To remove an encoder port definition, run the following command:

```
rmvsport -1 portname
```

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mkvsport command

Description

This command creates and activates an encoder port. This command can take approximately 10 seconds to complete.

Restriction: Your encoder card might not support some of the settings you specify with this command. For example, if you set the frame rate too high on a low bit rate video, the encoder will issue an error message. You can experiment with this form's bit and frame rate settings, or stop the Server and try to play the video using the software that came with your encoder.

Syntax

```
mkvsport -l portname -h portdescriptor [ -s source ] [ -m mode ] [-M muxbitrate ] [-A audiobitrate ] [-V videobitrate ] [ -g Gops ] | [ -f framespersec ] | [ -c colorsystem ] | [ -t type ] | [ -H horizres ] | [ -p pmappid ] | [ -v videopid ] | [ -a audiopid ] | -?
```

Flags

-l *portname*

Specifies the logical name of the port. For example, enc0.

-h *portdescriptor*

Port descriptor from the Registry location of the driver. Currently, only FutureTel\PrimeView is supported.

-s *source*

Specifies the source type for the encoder. The supported types are:

composite

Input is one cable that combines all components into one signal.

RGB Input is three video cables (one for each red, green, and blue signal).

svideo1

Input is S-video (one multi-pronged cable that carries separate luma and chrominance signals) in the first connector.

svideo2

Input is S-video (one multi-pronged cable that carries separate luma and chrominance signals) in the second connector.

-m *mode*

Specifies the mux mode. The supported types are:

system

MPEG-1 stream for audio and video combined. Outputs an .mpg file.

audio-only

MPEG-1 stream for audio only. Outputs an .mpa file.

video-only

MPEG-1 stream for video only. Outputs an .mpv file.

-M *muxbitrate*

Specifies how many bits per second to stream the combined audio and video at. The higher you set the bit rate, the more the streaming quality improves.

Restriction: You cannot specify the mux bit rate if either the audio bit rate or video bit rate is specified. If the mux bit rate is less than the combined values of the audio bit rate and video bit rate, the bit rates are adjusted accordingly.

-A *audiobitrate*

Bit rate of the audio stream. Valid values are:

Audio Bit Rate (bits per second)	Allowed Audio Mode
32000	Mono
48000	Mono
56000	Mono
64000	All Modes
80000	Mono
96000	All Modes
112000	All Modes
128000	All Modes
160000	All Modes
192000	All Modes
224000	Stereo, Intensity Stereo, Dual Mono
256000	Stereo, Intensity Stereo, Dual Mono
320000	Stereo, Intensity Stereo, Dual Mono
384000	Stereo, Intensity Stereo, Dual Mono

-V *videobitrate*

Specifies how many bits per second to stream the video at. The higher you set the bit rate, the more the video quality improves.

-g *Gops*

Specifies the frequency of sequence headers in the video streams. Sequence headers facilitate editing, improve playback control functions, and initialize remote players. The higher you set this value, the better you can edit and control your video. Consequently, sequence headers increase the video file size and require higher bit rate. Lower values, such as 1 or 2, might be helpful in lossy networks.

-f *framespersec*

Specifies how many frames per second to stream the video in. You must reduce the frames per second in order to accommodate lower bit rate streaming. Consequently, the lower you set the frame rate, the choppy the video appears.

Video Frame Rate	NTSC Rate	PAL Rate
Full	30 frames per second	25 frames per second
Half	15 frames per second	12.5 frames per second
Third	10 frames per second	8.33 frames per second
Quarter	7.5 frames per second	6.25 frames per second
Fifth	6 frames per second	5 frames per second
Tenth	3 frames per second	2.5 frames per second

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Video Frame Rate	NTSC Rate	PAL Rate
Fifteenth	2 frames per second	1.67 frames per second

-c *coloursystem*

Specifies NTSC or PAL for the color system standard.

-t *type* Specifies the generic video type. Valid values are: MPEG1, MPEG2.

-H *horizres*

Specifies the amount of detail in the stream. It also determines the default dimensions of the video. For example, a value of 720 (MPEG-2) projects the video on a full screen window. A value of 352 (MPEG-1) projects the video on a quarter screen window. Expanding the video window past its original default causes the detail to decrease accordingly.

-p *pmappid*

The Transport Program Map Table (PMT) contains system information for random access into the transport stream and for data loss recovery. You can assign a program ID tag (PID) to the PMT packets (possibly useful for advanced applications, like in a custom-written client player). The default PID is automatically generated.

-v *videopid*

Specifies a program ID tag (PID) to each program in the transport stream (possibly useful for specialized applications, like in a custom-written client player). The default PID is automatically generated.

-a *audiopid*

Specifies a program ID tag (PID) to each program in the transport stream (possibly useful for specialized applications, like in a custom-written client player). The default PID is automatically generated.

-? Displays help for this command.

Error Codes

This command fails with an error message if any of the following conditions is true:

- Port type is not valid
- A bit rate value is not valid.
- *portname* (logical name of port) is too long or contains invalid characters. The port name must be less than 40 characters.

Examples

1. To create a port called enc0 using the default values, enter:

```
mkvSPORT -l enc0 -h "FutureTel\PrimeView"
```

2. To create a port called enc0 with a multiplexed bit rate of 1520800 that received input from the first svideo connector, enter:

```
mkvSPORT -l enc0 -h "FutureTel\PrimeView" -M 1520800 0m system -s svideo1 -g 1
```

chvsport command

Description

This command changes the attributes of a specified port. This command can take approximately 10 seconds to complete.

Restriction: Your encoder card might not support some of the settings you specify with this command. For example, if you set the frame rate too high on a low bit rate video, the encoder will issue an error message. You can experiment with this form's bit and frame rate settings, or stop the Server and try to play the video using the software that came with your encoder.

Syntax

```
chvsport -l portname [-r portdescriptor ] [ -s source ] [ -m mode ] [-M muxbitrate ] [-A audiobitrate ] [-V videobitrate] [ -g Gops] | [ -f framespersec ] | [ -c colorsystem ] | [ -t type ] | [ -H horizres ] | [ -p pmappid ] | [ -v videopid ] | [ -a audiopid ] | -?
```

Flags

-l *portname*

Specifies the logical name of the encoder port. For example, enco0.

-r *portdescriptor*

Indicates that the port configuration was altered through an encoder-specific utility and must be refreshed. Use this option to ensure that the VideoCharger configuration is consistent with the modified port configuration.

-s *source*

Specifies the source type for the encoder. The supported types are:

composite

Input is one cable that combines all components into one signal.

RGB

Input is three video cables (one for each red, green, and blue signal).

svideo1

Input is S-video (one multi-pronged cable that carries separate luma and chrominance signals) in the first connector.

svideo2

Input is S-video (one multi-pronged cable that carries separate luma and chrominance signals) in the second connector.

-m *mode*

Specifies the mux mode. The supported types are:

system

MPEG-1 stream for audio and video combined. Outputs an .mpg file.

audio-only

MPEG-1 stream for audio only. Outputs an .mpa file.

video-only

MPEG-1 stream for video only. Outputs an .mpv file.

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-M *muxbitrate*

Specifies how many bits per second to stream the combined audio and video at. The higher you set the bit rate, the more the streaming quality improves.

Restriction: You cannot specify the mux bit rate if either the audio bit rate or video bit rate is specified. If the mux bit rate is less than the combined values of the audio bit rate and video bit rate, the bit rates are adjusted accordingly.

-A *audiobitrate*

Bit rate of the audio stream. Valid values are:

Audio Bit Rate (bits per second)	Allowed Audio Mode
32000	Mono
48000	Mono
56000	Mono
64000	All Modes
80000	Mono
96000	All Modes
112000	All Modes
128000	All Modes
160000	All Modes
192000	All Modes
224000	Stereo, Intensity Stereo, Dual Mono
256000	Stereo, Intensity Stereo, Dual Mono
320000	Stereo, Intensity Stereo, Dual Mono
384000	Stereo, Intensity Stereo, Dual Mono

-V *videobitrate*

Specifies how many bits per second to stream the video at. The higher you set the bit rate, the more the video quality improves.

-g *Gops*

Specifies the frequency of sequence headers in the video streams. Sequence headers facilitate editing, improve playback control functions, and initialize remote players. The higher you set this value, the better you can edit and control your video. Consequently, sequence headers increase the video file size and require higher bit rate. Lower values, such as 1 or 2, might be helpful in lossy networks.

-f *framespersec*

Specifies how many frames per second to stream the video in. You must reduce the frames per second in order to accommodate lower bit rate streaming. Consequently, the lower you set the frame rate, the choppy the video appears.

Video Frame Rate	NTSC Rate	PAL Rate
Full	30 frames per second	25 frames per second
Half	15 frames per second	12.5 frames per second
Third	10 frames per second	8.33 frames per second

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Video Frame Rate	NTSC Rate	PAL Rate
Quarter	7.5 frames per second	6.25 frames per second
Fifth	6 frames per second	5 frames per second
Tenth	3 frames per second	2.5 frames per second
Fifteenth	2 frames per second	1.67 frames per second

-c *coloursystem*

Specifies NTSC or PAL for the color system standard.

-t *type*

Specifies the generic video type. Valid values are: MPEG1, MPEG2.

-H *horizres*

Specifies the amount of detail in the stream. It also determines the default dimensions of the video. For example, a value of 720 (MPEG-2) projects the video on a full screen window. A value of 352 (MPEG-1) projects the video on a quarter screen window. Expanding the video window past its original default causes the detail to decrease accordingly.

-p *pmappid*

The Transport Program Map Table (PMT) contains system information for random access into the transport stream and for data loss recovery. You can assign a program ID tag (PID) to the PMT packets (possibly useful for advanced applications, like in a custom-written client player). The default PID is automatically generated.

-v *videopid*

Specifies a program ID tag (PID) to each program in the transport stream (possibly useful for specialized applications, like in a custom-written client player). The default PID is automatically generated.

-a *audiopid*

Specifies a program ID tag (PID) to each program in the transport stream (possibly useful for specialized applications, like in a custom-written client player). The default PID is automatically generated.

-?

Displays help for this command.

Error Codes

This command fails with an error message if any of the following conditions is true:

- A bit rate value is not valid.
- *portname* (logical name of port) is too long or contains invalid characters. The port name must be less than 40 characters.

Examples

1. To change the audio bit rate limit of encoder port `enc0`, enter:

```
chvsport -l enc0 -A 19200
```
2. To change the source for encoder port `enc0`, enter:

```
chvsport -l enc0 -s composite
```
3. To refresh the port configuration in the VideoCharger after the port has been altered through an encoder-specific utility, enter:

```
chvsport -l enc0 -r
```

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rmvsport command

Description

This command removes a port.

Syntax

```
rmvsport -l portname | -?
```

Flags

-l *portname*

Specifies the logical name of the encoder port. For example, enc0.

-? Displays help for this command.

Error Codes

This command fails with an error message if the port name (*portname*) is not valid.

Examples

To remove encoder port enc0, enter:

```
rmvsport -l enc0
```


lsvsport command

Description

This command lists the attributes of a specified port, such as:

- Port name.
- Port descriptor.
- Input source.
- Output stream type.
- Bit rates for audio, video, and system streams.
- Gops between sequence headers.

Syntax

```
lsvsport [ -l portname ] | -?
```

Flags

-l *portname*

Specifies the logical name of the encoder port. For example, enc0.

-? Displays help for this command.

If you run the command without any flags, lsvsport lists all existing ports.

Error Codes

This command fails with an error message if the specified port name (*portname*) is not valid.

Examples

1. To list attributes of encoder port enc0, enter:
lsvsport -l enc0
2. To list all existing port names, enter:
lsvsport

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vsconfig command

Description

This command changes a configuration or displays the current configuration. You must stop VideoCharger before using this command.

At default, VideoCharger randomly selects port pairs from 5000 to 64K. For security reasons, you should specify a range of ports for VideoCharger to use. Otherwise, a firewall administrator must make that entire range of ports to VideoCharger.

Syntax

```
vsconfig [ -D ] [ -d lantv_dir ] [ -c content_dir ] alias [ -m static |  
dynamic ] [ -u userid ] [ -p password ] [ -t trace_level -T Component ] [  
-r service dependencies ] [ -F port ranges ] [ -L list registry values ] [  
-Y remove registry values ] | -?
```

Flags

- D** Displays the configuration. This option overrides all other options.
- d** *lantv_dir*
Directory where the VideoCharger is installed.
- c** *content_dir*
Default directory where the content files are stored.
- m** **static** | **dynamic**
Specifies the type of metadata files to use. Supported values are **static** and **dynamic**.
- u** *userid*
Local user ID for FTP access in stage operations; must be used with **-p**, and user ID must match existing ID within the local FTP server.
- p** *password*
FTP Password in stage operations. If you specify this flag, you must also specify the **-u** flag.
- t** *trace_level*
Level of messages (0-7) written to the event log.
- T** *Component*
The VideoCharger component enabled for the trace level. Valid components are: dex, vserver, rtspd, mm, ar, vip.
- r** *service dependencies*
Re-configures services with dependencies. Use this flag to set the services with automatic startup type.
- F** *port ranges*
Range of ports that the server will use; adds or modifies the content of StartPort Limit and EndPortLimit registry values. **Example:** 1000:1220
- L** *list registry values*
Lists the StartPortLimit and EndPortLimit registry values.
- Y** *remove registry values*
Removes the StartPortLimit and EndPortLimit registry values.
- ?** Displays help for this command.

Examples

1. To display the current configuration, enter:
`vsconfig -D`
2. To add or modify the content of StartPortLimit and EndPortLimit registry values to 1000 and 1220 respectively, enter:
`vsconfig -F1000:1220`
3. To list the content of StartPortLimit and EndPortLimit registry values, enter:
`vsconfig -L`
4. To remove the content of StartPortLimit and EndPortLimit registry values, enter:
`vsconfig -Y`

VideoCharger Server for Windows

vspathmtu command

Description

This command determines the maximum packet size that can be sent over the network without being fragmented by the routers. `vspathmtu` uses Microsoft Internet Control Message Protocol functions. If the path MTU cannot be queried, an error report is generated.

Syntax

`vspathmtu destination`

Flags

destination

The destination host name or IP address.

Examples

1. To determine the maximum packet size that should be sent to the host named `vcharger.stl.ibm.com`, enter:
`vspathmtu vcharger.stl.ibm.com`

vsstart command

Description

This command starts a VideoCharger service.

Syntax

```
vsstart [ -a ] [ -d ] [ -c ] [ -s ] [ -m ] [ -v ] [ -r ] [ -h ] | -?
```

Flags

- a Starts the application requestor service.
- d Starts the data exporter service.
- c Starts the control server service.
- s Starts the Scheduler service.
- m Starts the media manager service.
- v Starts the VIP service.
- r Starts the RTSP Daemon.
- h Starts the VideoHub media manager service.
- ? Displays help for this command.

If the command is run without any flags, all services are started.

Examples

1. To start the control server service, enter:

```
vsstart -c
```
2. To start all services, enter:

```
vsstart
```

VideoCharger Server for Windows

vsstat command

Description

This command requests the status for a VideoCharger service.

Syntax

```
vsstat [ -a ] [ -d ] [ -c ] [ -s ] [ -m ] [ -v ] [ -r ] [ -h ] | -?
```

Flags

- a Requests the status of the application requestor service.
- d Requests the status of the data exporter service.
- c Requests the status of the control server service.
- s Requests the status of the scheduler service.
- m Requests the status of the media manager service.
- v Requests the status of the VIP service.
- r Requests the status of the RTSP Daemon.
- h Requests the status of the VideoHub media manager service.
- ? Displays help for this command.

If the command is run without any flags, the status of all services is requested.

Examples

1. To request the status of the Application Requestor service, enter:

```
vsstat -a
```
2. To request the status of all services, enter:

```
vsstat
```

vsstop command

Description

This command stops a VideoCharger service.

Syntax

```
vsstop [ -a ] [ -d ] [ -c ] [ -s ] [ -m ] [ -v ] [ -r ] [ -h ] | -?
```

Flags

- a Stops the application requestor service.
- d Stops the data exporter service.
- c Stops the control server service.
- s Stops the scheduler service.
- m Stops the media manager service.
- v Stops the VIP service.
- r Stops the RTSP Daemon.
- h Stops the VideoHub media manager service.
- ? Displays help for this command.

If the command is run without any flags, all services are stopped.

Examples

1. To stop the scheduler service, enter:
vsstop -s
2. To stop all services, enter:
vsstop

VideoCharger Server for Windows

vsversion command

Description

This command displays the VideoCharger version number.

Syntax

vsversion | -?

Flags

-? Displays help for this command.

Chapter 12. Content management commands for VideoCharger on Windows

To run content management commands you must use a user ID belonging to the vsasset group (for example, vsloader).

For information about how to read command syntax statements, see “Reading syntax statements” on page 115.

Use the content management commands to:

- List assets.
- List asset attributes.
- List asset groups.
- Add assets.
- Update asset attributes.
- Delete assets.
- Stage (copy) assets from an Archive Server to a VideoCharger Server, or from one VideoCharger Server to another.

vslist command

Description

This command lists an asset's attributes (examples of attributes are bit rate, duration, type, and frame rate—see the “vsload command” on page 135 for more information) or lists all of the assets in the default asset group.

Syntax

```
vslist [-s server_hostname ] [-g group ] [-a asset ] [-G ] [-A ] [-V ] |  
-?
```

Flags

-s <i>server_hostname</i>	Network host name of the VideoCharger that holds the assets. The default is the local host name.
-g <i>group</i>	Name of an asset group. The default is the default asset group. For information about configuring a default asset group, see the “chvsag command” on page 37.
-a <i>asset</i>	Name of an asset. If this flag is specified, the asset attributes are displayed. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").
-G	Generates a list of existing asset groups.
-A	Generates a list of assets contained in the asset group specified by the -g <i>group</i> flag, or in the default asset group if the -g flag is not specified.
-V	After successful completion of the command, displays a confirmation message.
-?	Displays help for this command.

Return Values

This command returns the following values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

Examples

To list the attributes for the film, *Cold Comfort Farm*, enter:

```
vslist -a "Cold Comfort Farm"
```

vsload command

Description

This command loads the contents of a file to an asset, within an asset group.

As an asset is loaded, it is parsed to determine the asset attributes, for example, frame rate, play rate, or encoding type. As this information becomes available, the asset attributes are automatically updated. If an asset cannot be parsed, it is not loaded.

Important: When using vsload to load an asset, VideoCharger uses the FTP daemon on the host where the asset is located to send the video file using FTP. The VideoCharger supports very large file sizes (64 bit), but the maximum file size supported by any given FTP daemon varies. Note that you need an FTP daemon to support the "size" command.

Syntax

```
vsload -a asset -v video_file [-h hostname -i ftpID -D destinationFile ] [
-m load_mode ] [ -r copy_rate ] -p ftppw ] ] [-d duration ] [-f framerate ]
[-b play_rate ] [-t type ] [-V ] | -?
```

Flags

-a <i>asset</i>	Name of the asset. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").
-v <i>video_file</i>	Fully qualified file name of asset to be loaded. If several files make up an asset, then all files specified are delimited with a comma (,).
-h <i>hostname</i>	Network host name where the asset is located.
-i <i>ftpID</i>	User ID for content management on the host, where the asset will be loaded.
-D <i>destinationFile</i>	Fully qualified destination (on the LANTV system) video file.
-m <i>load_mode</i>	Asset load mode: either RS (as long as asset supports load and play) or NS.
-r <i>copy_rate</i>	Asset copy rate.
-p <i>ftppw</i>	User password for content management on the host.
-d <i>duration</i>	Duration of the asset; for example, 01:30:20:14, where: <ul style="list-style-type: none"> 01 1 hour 30 30 minutes 20 20 seconds 14 14 frames
-f <i>framerate</i>	Number of frames per second.
-b <i>play_rate</i>	Playback rate of the asset, in bits per second.

VideoCharger Server for Windows

-t *type*

Type of asset, which is one of the following types:

MPEG1

Either Audio, Video, or both

MPEG2

Either Audio, Video, or both

MPEG4

Either Audio, Video, or both

AVI

Either Audio, Video, or both

MOV

QuickTime Video

MVR

HotMedia Video

WAV

Audio

MJPEG

Video

H263

Video

G723

Audio

LBR

Interleaved H263 and G723

- Optional format to use (delimiter is a plus sign(+)):

SIF

240 horizontal lines with 352 pixels per line at 30 frames per second.

CCIR501

240 horizontal lines with 720 pixels per line at 60 frames per second.

HHR

120 horizontal lines with 720 pixels per line at 60 frames per second.

- Optional resolution to use (delimiter is a plus sign (+)):

NTSC

525 horizontal lines of which 480 are used for picture, each containing 704 pixels. The 480 lines of picture are made up of two interlaced fields: 240 odd lines and 240 even lines.

PAL

Similar to NTSC, but with 625 horizontal lines per frame.

- Optional composition to use (delimiter is a plus sign (+)):

PGMSTR

Program stream

- Optional composition to use with MPEG2 (delimiter is a plus sign (+)):

TRANSTR

Transport stream

SYSSTR

System stream

-V

After successful completion of the command, displays a confirmation message.

-?

Displays help for this command.

Return Values

This command returns the following values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

Examples

To load an asset, for example, *Silent Running*, of type MPEG1 from host name dev1, enter:

```
vsload -a "Silent Running" -v /myproject/myfilm -i user1 -h
dev1.mycompany.com -t MPEG1 -b 3000000
```

To simultaneously load and play an asset:

- Using `vsload` with copyrate and load mode of RS:

```
vsload -a assetname -v videoname -i hostname -p password -m RS -r 3000000
```

where *assetname* is the video name to store in VideoCharger, *videoname* is the video name to load from, *hostname* is the host name of the machine to load from, *password* is the password of the machine to load from, RS is the Read Share, and 3000000 is 3 Mbits/sec copy rate (note that the copy rate should exceed the play rate).

- Using `vsstage` with copyrate and load mode of RS:

```
vsstage -a assetname -S servername -m RS -r 3000000
```

where *assetname* is the video name to store in VideoCharger, *servername* is the server name to copy the video to, RS is the Read Share, and 3000000 is 3Mbits/sec copy rate (note that the copy rate should exceed the play rate).

- Using real time encoder and playing video while encoded.

```
vsencode -a assetname -S source -i desc -D duration
```

where *assetname* is the asset where the stream is to be recorded, *source* is the source for the live, encoded stream, *desc* is the description of the event, and *duration* is the time to record in seconds.

vsparse command

Description

This command updates frame rate, play rate, duration, and type attributes for an asset. Supported types are MPEG-1 System Stream, MPEG-2 Program Stream, MPEG-2 Transport Stream, LBR Stream, RIFF Stream, and QuickTime.

In addition to updating these key attributes, the command stores decoder initialization information for the asset title. Storing this information for the title enables the Video Viewer to configure itself quickly. The viewer can play files that have not had the vsparse command run on them (assuming the appropriate information was passed using the vsload command), but it takes longer for the viewer to initialize.

The vsparse command can be run only after the asset has been loaded, and erases any frame rate, play rate, and type information previously specified.

The vsparse command reports whether it found hint tracks while parsing a QuickTime movie. VideoCharger requires hint tracks to stream a movie to the Apple QuickTime player. If no hint tracks are found, vsparse and vsload complete successfully with the following message: No QuickTime streaming hint tracks were found. To create a hint track, see "Playing assets in the QuickTime Player" in *Planning and Installing VideoCharger*.

Syntax

```
vsparse -a asset | -?
```

Flags

-a <i>asset</i>	Name of the asset. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in quotation marks ("").
-?	Display help for this command.

Return Values

This command returns the following values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

Examples

To update information on an asset named red, enter:

```
vsparse -a red
```

vsupdate command

Description

This command updates the attributes of an asset.

If you are updating only frame rate, play rate, or encoding type, you can quickly update an asset by using the `vsparse` command. See “`vsparse` command” on page 138.

Syntax

```
vsupdate -a asset [-A asset] [-b play_rate] [-f framerate] [-d duration]
[-t type] [-V ] | -?
```

Flags

-a *asset*

Name of the asset to be updated. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").

-A *asset*

New name of the asset, if it is to be renamed.

-b *play_rate*

Playback rate of the asset, in bits per second.

-f *framerate*

Number of frames per second.

-d *duration*

Duration of the asset; for example, 01:30:20:14, where:

01	1 hour
30	30 minutes
20	20 seconds
14	14 frames

-t *type* Type of asset, which is one of the following types:

MPEG1

Either Audio, Video, or both

MPEG2

Either Audio, Video, or both

MPEG4

Either Audio, Video, or both

AVI

Either Audio, Video, or both

MOV QuickTime Video

MVR HotMedia Video

WAV Audio

MJPEG

Video

H263 Video

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G723 Audio

LBR Interleaved H263 and G723

- Optional format to use (delimiter is a plus sign (+)):

SIF 240 horizontal lines with 352 pixels per line at 30 frames per second.

CCIR501

240 horizontal lines with 720 pixels per line at 60 frames per second.

HHR 120 horizontal lines with 720 pixels per line at 60 frames per second.

- Optional resolution to use (delimiter is a plus sign (+)):

NTSC 525 horizontal lines of which 480 are used for picture, each containing 704 pixels. The 480 lines of picture are made up of two interlaced fields: 240 odd lines and 240 even lines.

PAL Similar to NTSC, but with 625 horizontal lines per frame.

- Optional composition to use with MPEG1 or MPEG2 (delimiter is a plus sign (+)):

PGMSTR

Program stream

- Optional composition to use with MPEG2 (delimiter is a plus sign (+)):

TRANSTR

Transport stream

SYSSTR

System stream

-V After successful completion of the command, displays a confirmation message.

-? Displays help for this command.

Return Values

This command returns the following values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

Examples

To rename an asset, for example, *Cold Comfort Farm*, to *Chariots of Fire*, enter:

```
vsupdate -a "Cold Comfort Farm" -A "Chariots of Fire"
```

vsdelete command

Description

This command deletes an asset. The deletion occurs as soon as the asset is no longer being used.

Syntax

```
vsdelete -a asset [-V ] | -?
```

Flags

- a *asset*
Name of the asset. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").
- V
After successful completion of the command, displays a confirmation message.
- ?
Displays help for this command.

Return Values

This command returns the following values:

- 0 Successful completion.
- 1 Option specified was not valid.
- 2 Required option was omitted.
- 3 Option argument specified was not valid.
- 4 Command timed out.
- 5 Internal error.
- 6 API error.
- >6 Error occurred.

Examples

To delete an asset, for example, *Silent Running*, from the default asset group, enter:

```
vsdelete -a "Silent Running"
```

vsexport command

Description

This command exports an asset from the VideoCharger Server to any machine with an FTP daemon.

Syntax

```
vsexport -a asset -v video_file -h hostname -i ftpID -p ftpPW [-s server_hostname ] [-g group ] [-r copyrate ] [-V ] | -?
```

Flags

-a <i>asset</i>	Name of the asset to be exported. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").
-v <i>video_file</i>	The fully-qualified name of the new target video file.
-h <i>hostname</i>	Target network hostname that the asset will export to.
-i <i>ftpID</i>	User ID for content management on the target host, where the asset will be exported to.
-p <i>ftpPW</i>	User password for content management on the target host.
-s <i>server_hostname</i>	Network host name of the source VideoCharger Server that the asset will export from. The default is the local host name.
-g <i>group</i>	Name of asset group to be exported from. The default is the default asset group. For information about configuring a default asset group, see the "chvsag command" on page 37.
-r <i>copyrate</i>	Rate (in bits per second) to export the asset at. Specify 0 for best rate without reservation.
-V	After successful completion of the command, displays a confirmation message.
-?	Display help for this command.

Return Values

This command returns the following values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

Examples

To export an asset, for example, *Sample Movie* from *lantv.stl.ibm.com* to host name *MovServr*; save it as *movie.mpg*; and to receive confirmation of command completion, enter:

```
vsexport -a "Sample Movie" -g AG -v 'movie.mpg' -h MovServr  
-r 0 -i jdoe -p password -s 'lantv.stl.ibm.com' -V
```

vsstage command

Description

This command copies an asset from one server to another. For example, from the VideoCharger Server to another server, from the VideoCharger Server to the Multimedia Archive, or vice versa.

Syntax

```
vsstage -a asset -S server [-s server_hostname ] [-g group ] [-G group ] [-A asset ] [-m mode ] [-r copyrate ] [-V ] | -?
```

Flags

-a <i>asset</i>	Name of the asset to be copied. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").
-S <i>server</i>	Network host name of the VideoCharger to which the asset is to be copied. If the asset already exists on the destination, it is not copied, and the command completes unsuccessfully.
-s <i>server_hostname</i>	Network host name of the VideoCharger from which the asset is to be copied. The default is the local host name.
-g <i>group</i>	Name of asset group to be copied from. The default is the default asset group. For information about configuring a default asset group, see the "chvsag command" on page 37.
-G <i>group</i>	Name of asset group to be copied to. The default is the asset group configured in the -S flag.
-A <i>asset</i>	New name of the asset, if it is to be renamed.
-m <i>mode</i>	Mode in which to copy the asset. This refers to the source (rather than target) side. Valid values are: RS Sharable mode. The asset can be played while it is being copied. NS Non-sharable mode. This is the default Load and Play mode. The asset cannot be played while it is being copied.
-r <i>copyrate</i>	Transfer rate at which to copy the asset, in bits per second. Use transfer rate when you are going to play an asset while copying it. The default is 0, which loads with whatever amount of bandwidth is available. This might be the fastest way to load an asset on a lightly loaded system.
-V	After successful completion of the command, displays a confirmation message.
-?	Display help for this command.

Return Values

This command returns the following values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

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Examples

To copy an asset, for example, *Breaking Away*, to asset group bicycles on host name MovServer and to receive confirmation of command completion, enter:

```
vsstage -a "Breaking Away" -S MovServer -g bicycles -V
```

vsadd command

Description

Adds an asset.

Syntax

```
vsadd [-a asset_name | -A asset_name_prefix ] -v video_file_name [-V ] | -?
```

Flags

-a <i>asset_name</i>	Name of the asset to be added. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks ("). If this parameter is omitted, the asset name is generated from the video file name. If this parameter is provided, only a single video file can be loaded.
-A <i>asset_name_prefix</i>	Prefix to be used when generating asset names. This parameter is ignored if the -a parameter is specified.
-v <i>video_file_name</i>	The fully-qualified names of the video files to be added. Use a comma (,) to separate the file names. Each file name must be enclosed in either apostrophes (') or quotation marks ("). To add a single asset, provide only one fully-qualified name. An asterisk (*) or question mark (?) can be used as a wildcard character in a file name. Wildcard characters are not permitted in a path name. If more than one file name is specified, or the file names contain wild card characters, each file matching the criteria is loaded as a separate asset.
-V	After successful completion of the command, displays a confirmation message.
-?	Display help for this command.

Return Values

This command returns the following values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

Examples

To load an asset, for example *Titanic*, that is in the c:\videos directory, enter:

```
vsadd -v c:\videos\titanic.mpg
```

vsmeta command

Description

Generates the metadata for the specified asset. The metadata can be saved and then used to play the asset without using the Web interface.

Syntax

```
vsmeta -a asset_name [-P play_mode ] [-T title ] [-b bitrate ] | -?
```

Flags

-a <i>asset_name</i>	Name of the asset for which metadata is to be generated. If the name consists of more than one word or contains special characters, such as an asterisk (*), enclose the name in either apostrophes (') or quotation marks (").
-P <i>play_mode</i>	Specify either AUTOPLAY or PAUSED . The default is AUTOPLAY .
-T <i>title</i>	The title of the asset.
-b <i>bitrate</i>	The playback rate for the asset. If this parameter is not specified, the bit rate defined for <i>asset_name</i> is used.
-?	Display help for this command.

Return Values

This command returns the following values:

0	Successful completion.
1	Option specified was not valid.
2	Required option was omitted.
3	Option argument specified was not valid.
4	Command timed out.
5	Internal error.
6	API error.
>6	Error occurred.

Examples

To create a metadata file, for example, for the asset *Titanic* (with file name *titanic.ivs*), enter:

```
vsmeta -a "Titanic" > titanic.ivs
```

IP multicasting commands

The VideoCharger for Windows allows four types of events to be scheduled:

- IP Multicast of an Existing Asset
- IP Multicast from an Encoder
- Record from an Encoder
- Simultaneous Record and IP Multicast from an Encoder

IP multicasting allows transmission of an IP datagram to a set of hosts that form a single multicast group. The VideoCharger Server multicast functions facilitate the setting up of IP multicast groups, the mapping of audio and video content to these groups, the advertisement of this configuration to web pages, and the ability for a client to view audio and video content by joining these groups.

You can be schedule an event through the VideoCharger Content Management Web interface as described in the *Administrator's Guide and Reference*, or by using the `ipplay` or `vsencode` commands. You can display or alter the Event Schedule using the VideoCharger Content Management Web interface, or by using the `vsched` command. This chapter describes the `vsched`, `ipplay`, and `vsencode` commands.

VideoCharger Server for Windows

vsched command

Description

Use the vsched command to display a list of scheduled VideoCharger events or to delete scheduled VideoCharger events.

Syntax

```
vsched [-L] [-l eventName] [-d eventName]
```

Flags

-L Requests a summary of all scheduled events.

-l *eventName*

Requests detailed listing of event attributes.

-d *eventName*

Specifies an event to delete.

ipplay command

Description

Use the `ipplay` command to schedule streaming audio and video content for existing assets to an IP multicast address.

Syntax

```
ipplay -a asset -i desc -d dest -p port | -L port [-b rate] [-P proto] [-s send_addresses|hostnames] [-T ttl] [-c count] [-t time] [-u desc_URL]
```

Flags

-a *asset*

Specifies the asset for playing.

-i *desc*

Specifies the description for this event. Maximum length is 30 characters.

-d *dest*

Specifies the destination IP address or host name. The **-d** flag is required if the **-p** flag is supplied; otherwise it is ignored.

-p *port* | **-L** *port*

Specifies the TCP/UDP port number. If the **-L** flag is used, the port is a local port to which the client can connect to receive the data stream. If **-p** is specified, the port is the remote port on which the client will listen for the server to send data. If **-L** is specified, the **-P** flag must specify TCP.

-b *rate*

Specifies the bit rate in bits per second.

-P *proto*

Specifies the transport protocol for playing. You can specify either TCP (unicast) or RTP (unicast or multicast).

-s *send_address* | *hostnames*

Specifies the IP interfaces for sending content. A maximum of ten addresses can be specified. Dotted decimal names can be mixed with host names.

-T *ttl*

Specifies the time-to-live.

-t *time*

Specifies the transmission start time in the format CCYYMMDDhhmm.ss where CC =century, YY =year,MM =month,DD =day, hh =hour, mm =minutes, ss =seconds

-c *count*

Specifies loop count.

-u *desc_URL*

Specifies the Web address for a Web page that provides viewers with additional information about this event.

VideoCharger Server for Windows

vsencode command

Description

Use the vsencode command to schedule streaming audio and video content from the encoder to an IP multicast address into an asset, or to both an asset and an IP multicast address, simultaneously.

Syntax

```
vsencode -S source -i desc -D duration [-t time] [-u desc_URL] [-d dest -p port] [-P proto] [-s send_addresses] [-T tll] [-a asset] [-o NEW | REPLACE | APPEND] [-f filename] [-L port]
```

Flags

- S** *source*
Specifies the source for the live, encoded stream.
- i** *desc*
Specifies the description for this event. Maximum length is 30 characters.
- D** *duration*
Specifies time to record in seconds.
- t** *time*
Specifies the transmission start time in the format CCYYMMDDhhmm.ss where CC =century, YY =year, MM =month, DD =day, hh =hour, mm =minutes, ss =seconds
- u** *desc_URL*
Specifies the Web address for a Web page that provides viewers with additional information about this event.
- d** *dest* **-p** *port*
Specifies a destination IP address or host name and port to which the stream will be forwarded.
- P** *proto*
Specifies the transport protocol for playing. You can specify either TCP (unicast) or RTP (unicast or multicast).
- s** *send_addresses*
Specifies the IP interfaces for content. The maximum number of interfaces is 10.
- T** *tll*
Specifies the time-to-live.
- a** *asset*
Specifies the asset where the stream is to be recorded.
- o** **NEW** | **REPLACE** | **APPEND**
Indicates the open mode for the asset, if the stream is being recorded. If **-o NEW** is set, the **-f** flag must be provided to specify the content file to record to.
- f** *filename*
Indicates the full path of the content file where the recorded data will be stored. This flag should be provided only if the **-o NEW** flag is also provided.
- L** *port*
Enables listen mode so a client can initiate the connect. If listen mode is enabled, the **-d** and **-p** flags are ignored.

Chapter 13. Troubleshooting VideoCharger on Windows

Consult the following sections to help solve VideoCharger problems:

- “General debugging techniques”
- “Solving problems with selecting, viewing, or deleting assets” on page 152
- “Solving content loading problems” on page 154

General debugging techniques

In addition to the problem diagnosis topics discussed in this chapter, there are several debugging tools that you can use to determine the source of problems:

Viewing the application event log through the Windows event viewer.

VideoCharger writes error messages, recovery information, and events (system, application, security) into this event log. To view the event log:

1. Click **Start** on the Windows taskbar.
2. Click **Programs** → **Administrative Tools** → **Event Viewer**. The Event Viewer window opens.
3. From the **Log** menu, select the log that you want to display.

By default, only fatal errors from VideoCharger are written to the application event log. To enable detailed VideoCharger logging, set the trace level parameter as described in “Initially configuring VideoCharger on Windows” in *Planning and Installing VideoCharger*. You can also consult trace logs stored in %LANTV_DIR%\log.

Reporting the problem to your service representative

See the VideoCharger problem reporting section (“VideoCharger problem reporting” on page 181).

Starting and stopping VideoCharger components on Windows

You can start and stop VideoCharger components by (a) using your VideoCharger home page, (b) “Getting status with the Windows service manager” on page 113, or (c) using the System Resource Controller (SRC) as described below.

The Service Manager names for the key VideoCharger components (and the proper order to start them) are:

- lantv_de (Data exporter)
- lantv_cs (Control server)
- lantv_sc (Scheduler)
- lantv_ar (Application requestor)
- lantv_vi (Video input)
- lantv_mm (Media manager)
- lantv_vhmm (VideoHub media manager)
- lantv_rt (RTSP Daemon)

The proper order to stop the components is the reverse of how they were started.

Tip: It can take several minutes to stop components.

VideoCharger Server for Windows

Recommendation: Start and stop components as a group. You can start all of the VideoCharger components by entering the following command on the server:

```
vsstart
```

You can stop all VideoCharger components by entering the following command on the server:

```
vsstop
```

To stop the Scheduler, enter:

```
vsstop -s
```

To stop the Control Server, enter:

```
vsstop -c
```

To stop the Data Exporter, enter:

```
vsstop -d
```

Solving problems with selecting, viewing, or deleting assets

If a video does not display, check the asset attributes. Enter:

```
vslist -a asset-name
```

where *asset-name* is the name of the asset you loaded into the VideoCharger Server.

If the attributes are blank, enter:

```
vsparse -a asset-name
```

Network failures can also result in no video, or poor video, appearing at the client side, as discussed in the following sections.

Symptom: Cannot select video

1. To make sure that daemons are running, either enter the following command or click **Display the Status** in the Configuration and Administration page.

```
vsstat
```

2. Run the `netstat -an` command to show the network mapping to determine whether the network connections are up.

The Control Server listens on port 8500. The Data Exporter listens on port 8888.

Symptom: No video appearing

Inability to contact a client can be caused by VideoCharger failures, IP configuration problems, network hardware failures, or network failures.

The first thing to check is the current streaming activity. The most recent request might have exceeded the capacity of the data pump, and been rejected through Admission Control. If the data pump is running at or below capacity, use the following steps to help isolate the problem:

1. The VideoCharger is IP-based. Determine whether all IP programs are having problems by using the `ping`, `telnet`, or `ftp` command to contact the client. If any of these methods succeed, it is likely that the problem is with the VideoCharger software. In this case:
 - a. Use the Event Viewer (as described in “General debugging techniques” on page 151) and check for control server or data exporter errors.

VideoCharger Server for Windows

- b. Verify that the control server (vserver.exe), the Scheduler (vschedsvc.exe), and the data exporter (dex.exe) are running by starting the task manager, taskmgr.
- c. Enter `netstat -an` on the VideoCharger system. UDP entries for the client should exist if content is transmitting data to the client.
- d. Ensure that VCRPLAY (port 8500) is listening.

Important: All commands in steps 2 and 3 must be issued on the VideoCharger node.

2. If step 1 shows that IP programs are generally failing to contact the client, IP configuration must be checked. In this case:
 - a. If IP commands appear to hang, enter `ping hostname` where *hostname* represents the host that you know is working. If this command appears to hang, it is likely that you are experiencing name server problems or outages. Contact your network administrator.
 - b. If you receive messages of the form: A route to the remote host is not available from general IP commands, your IP routing configuration does not allow you to contact the client. Enter: `netstat -an` to obtain a summary of the nodes routing table. Add a route to the client to resolve the problem.
 - c. If you receive messages of the form: The network is not currently available from general IP commands, you must check the network hardware. Proceed to step 3.
 - d. If your routing appears correct, and no error messages are generated from general IP commands, enter
`arp -a`

Look for an entry for the client or the gateway to the client. If an entry exists or an incomplete entry exists, you must check the network hardware. Proceed to step 3.

3. To verify that a network interface is available to IP, that IP is transmitting data to that interface, and that data is actually being transmitted, complete the following steps:
 - a. Enter `netstat -rn`. If the interface name is not displayed, the interface is not enabled to IP.
 - 1) Double-click the **Network** icon in the Control Panel. The Network notebook opens.
 - 2) Click the **Bindings** tab.
 - 3) Set **Show Bindings for** to **all adapters**.
 - 4) Ensure that each of your adapters is displayed.
 - 5) Click the plus sign (+) beside the name of each adapter and ensure that the adapter is enabled for the TCP/IP protocol.
 - b. Enter `netstat -s` to display the number of packets being transmitted by IP, TCP, and UDP. Wait a few seconds and enter the command again. Compare the number of packets that were transmitted. This should show UDP packets being transmitted on the interface to the client node.
 - c. Check the System Event Log to ensure that no network errors are being encountered.
4. If step 3 shows IP activity and that data is being transmitted on the network interface, but IP programs are still failing, then the problem is likely with the network or with the client. Follow steps 2 and 3 at the client.

VideoCharger Server for Windows

Tip: The syntax for the netstat and arp commands varies with the type of client.

Symptom: Poor video quality

Poor video quality at the client is typically caused by VideoCharger delivery failures, long packet delays in the network, or large packet losses in the network. The following procedure can help isolate the problem:

1. Verify that the play rate for the asset is correct. The asset might be playing at a rate faster than its reservation rate.
2. View the Event Log (as described in “General debugging techniques” on page 151) to see if the disk is experiencing errors.
3. Run the Performance Monitor (**perfmon**) to see if the disks or the network interfaces are experiencing long I/O delays.
4. To detect large packet delays or large packet losses in the network, PING to the client node. Use the -l option of the ping command to set the packet size to the path MTU being used by the system. PING reports packet loss percentages, as well as minimum and maximum round-trip times. Large packet losses or large packet delays, combined with poor video quality to a client, indicate that the network connection to the client must be upgraded.

Symptom: QuickTime assets fail to stream

Disable the disk cache by completing the following steps:

1. **From QuickTime Player Version 4:** Click **Edit** → **Preferences** → **Streaming Transport**; **from QuickTime Player Version 5:** Click **Edit** → **Preferences** → **QuickTime Preferences**. The QuickTime Settings window opens.
2. From the **QuickTime Settings** list, select **Browser Plug-in**.
3. De-select **Save movies in disk cache**.
4. Close the QuickTime Settings window.

Solving content loading problems

If assets do not load properly, find the symptom below.

Symptom: Asset loads but does not parse

If the asset is of a type that is not supported by the vsparse command, the load request completes with an indication that the attributes could not be set. Use the **Modify Existing Asset** option from the Content Management Web interface to manually set the asset attributes.

Symptom: Cannot load content

This section provides procedures to assist you if you are having problems loading assets.

Check the Application Event Log regularly to see if it includes error messages for you to investigate. To view the Event Log, click **Start** → **Programs** → **Administrative Tools** → **Event Viewer**. Also, check you have correctly entered the file location and name.

You should also ensure that you have enough space on all drives. To display information about all drives:

1. Click **Start** on the Windows taskbar.

2. Click **Programs** → **Administrative Tools** → **Windows Diagnostics**. The Windows Diagnostics window opens.
3. Click the **Drives** tab.
4. Double-click each local hard drive to view the Properties notebook for that drive.
5. The General page shows the amount of free space.

Checking the FTP service on the remote host

To check the FTP service on the remote host where content is being loaded from:

1. Either use the facilities of the FTP service you are using, or enter: `netstat -an` and ensure that port 21 is in a listening state.
2. Attempt to access the FTP for the remote host manually:
 - a. FTP to the remote host.
 - b. Log into the remote host through ftp.
 - c. Change to directory that you are attempting to access.

Symptom: Cannot log in to host

Incorrect ftp user ID permissions can cause this type of error when importing assets from remote hosts. To remedy, you must create and assign the permission: "Act as part of the operating system" by completing the following steps:

1. **Windows NT:** Click **Start** → **Programs** → **Administrative Tools** → **User Manager**; **Windows 2000:** Click **Programs** → **Administrative Tools** → **Computer Management**.
2. **Windows NT:** From the User Manager window menu bar, click **User** → **New User**; **Windows 2000:** Double-click on **Local Users and Groups** and select **Actions** → **New User**
3. In the **Username** field within New User Window, type in the user ID that you want to create.
4. Type your password into the **Password** and **Confirm Password** fields.
5. At the Next Logon check box, deselect **User Must Change Password**.
6. Select the **User Cannot Change Password** checkbox.
7. Select the **Password Never Expires** checkbox.
8. Click **Groups**.
9. In the Not member of: list in the Group Memberships window, select **Administrators**.
10. Click **Add**.
11. In the Group Memberships window, click **OK**.
12. In the New User window, click **OK**.
13. In the User Manager window, click **Policies** → **User Rights**.
14. In the User Rights Policy window, select the **Show Advanced User Rights** checkbox.
15. Select **Act as part of the operating system** from the Right drop-down list box.
16. Click **Add**.
17. In the Add Users and Groups window, click **Show Users**.
18. In the Names list, select the user ID that you just created or the ftp user ID.
19. Click **Add**.
20. In the Add Users and Groups window, click **OK**.
21. In the User Rights Policy window, click **OK**.

VideoCharger Server for Windows

Symptom: Multicast event fails on another client machine

Select the IP address of the client in the VideoCharger Player by completing the following steps:

1. In the VideoCharger Player, click **Options** → **Preferences**. The Preferences window opens.
2. Click the **Network** tab.
3. Click **User Selection**.
4. Click the **Configure** button.
5. From **Network Adapter**, select the client's correct IP address.
6. Click **OK**.

If the problem persists, check to see if the client machine giving the errors has more than one LAN adapter. It is possible that the Player is trying to use a LAN adapters that is not connected. If this is the case, either enable the adapter or delete it.

Symptom: QuickTime asset displays a 10000 error

Check to make sure that your RTSP daemon process is running using the `vsstat` command or **Display Video Server status** on the Web page. If it is not running, start the process manually using either the start option in the services panel (look for `lantv_rt`), **Start Video Server** on the Web page, or the `vsstart` command line option. The other three digit error codes should map to RTSP RFC 2326 specifications.

Part 3. Appendixes

VideoCharger error messages

VideoCharger errors divide into the following identifier categories:

- Configuration
- Content management
- Data pump
- DCE-related
- Dynamic configuration
- Event
- Internal resource table
- Stream
- System
- System management
- Other

Also, see Chapter 6, “Troubleshooting VideoCharger on AIX” on page 83 or Chapter 13, “Troubleshooting VideoCharger on Windows” on page 151 for helpful troubleshooting techniques.

For AIX: Your system stores information about errors and failures in the error log. This information includes error identifiers, which the error logging facility uses to compile reports. Each unique error identifier is a 32-bit CRC hexadecimal code that determines which error record template the report uses. See the latest *AIX Problem Solving Guide and Reference* for information about AIX errors.

For Windows: Your system stores information about errors and failures in the event log. This information includes error identifiers, which can be used to isolate the problem.

Starting, stopping, and checking status on VideoCharger components

Many user actions require you to start, stop, and check status on different VideoCharger components. The recurring commands are in Table 6.

Table 6. Start, stop, and status Commands

	AIX	Windows
Start a data pump or data exporter	<code>startsrc -s vsdex</code>	<code>vsstart</code>
Stop a data pump or data exporter	<code>stopsrc -s vsdex</code>	<code>vsstop</code>
Check status on data pump or data exporter (see if running)	<code>lssrc -s vsdex</code>	<code>vsstat</code>

Tracing a failure

Many user actions require you to get a trace of a failure.

For AIX: Use the trace facility to get an API trace. The trace might help you determine where the failure is occurring. (For information about the trace facility, see *AIX Problem Solving Guide and Reference*.)

VideoCharger Error Messages

For Windows: To enable detailed tracing, enter:

```
vsconfig -t 7
```

Reproduce the error and use the event viewer to review the detailed trace to determine where the failure is occurring.

Attention: If this problem persists, notify your service representative. Have the trace available before making the service call.

Return codes

2100-017 Invalid SMPTE time code.

Problem: Staging an asset from an early version of the VideoCharger Server to a newer version might invalidate the asset's frameRate parameter to 0.

Category: Content Management

User action: Verify frameRate invalidity by typing `vslist -a assetname` where *assetname* represents the asset being staged. If the frameRate is 0, update it by typing `vsparse -a assetname` to reparse the asset.

2100-093 No asset replica available.

Problem: The data pump contacted does not currently have a copy of the asset requested. This error occurs when you attempt to play an asset before the asset is available. On AIX, the asset might not have been replicated to all Data Pumps, or only the primary data pump was active when you loaded an asset.

Category: Content Management

User action: Wait a few minutes and request the asset again. If you receive the same message, restart the data pumps on AIX or the data exporter on Windows, and request the asset again.

2100-098 Data pump bandwidth exceeded.

Problem: The controller is unable to accept a new operation because the data pump is at its bandwidth limit.

Category: Content Management

User action: Play again at a later time. Or, increase bandwidth/threshold values using the `chvsdp` command (AIX) or the **Calibrate VideoCharger**

Resources Web page (Windows).

2100-227 Unable to log in to host.

Problem: If you also see message 2100-179 Current operation aborted, your probably cannot FTP content from the host machine.

For AIX only: If you do not see message 2100-179 Current operation aborted, then possibly the password for the vsloader AIX user ID does not match the

password for the vsloader data pump content management user ID.

For Windows only: If you do not see message 2100-179 Current operation aborted, then possibly the password for the VideoCharger user ID (both specified during installation) does not match the password for the Windows administrator.

Category: Content Management

User action: If message 2100-179 also appeared: Try to FTP to the machine again using your user ID and password.

For AIX only: If message 2100-179 did not appear:

1. Telnet to your VideoCharger machine using user ID vsloader. If you cannot login because (a) you do not know the password, or (b) AIX asks you to change the password, then login as root. Type `pwdadm vsloader` and enter a new password. Then type `pwdadm -c vsloader` to prevent AIX from querying a password at each vsloader login session.
2. Type `lvsdp` to list your data pump name(s). Then type `chvsdp -l data_pump_name -i vsloader -w AIX_vsloader_password` where *AIX_vsloader_password* represents the AIX vsloader password you specified in step 1.
3. Try loading the media content again.

For Windows only: If message 2100-179 did not appear:

1. Log out of Windows.
2. Attempt to log back in using your VideoCharger administrator user ID and password.
3. If password does not work, login as the Windows administrator.
4. Enter `vsconfig` to change the VideoCharger password to something you can remember.
5. Log out of Windows and log back in using your VideoCharger user ID and password.
6. Try loading the media content again.

VideoCharger Error Messages

2100-305 Register interface with RPC runtime failed.

Problem: Unable to register the controller as a DCE service.

Category: Distributed Computing Environment (DCE)

User action: For AIX: Verify that the DCE daemon (**dced**) is running. If the daemon is not running, start it. If the daemon is running, you might need to stop and restart it. Use SMIT to stop and restart the DCE daemon. Enter:

```
smit dce
```

For Windows: Verify that the RPC service (**rpcss**) is running. If the service is not running, start it. If the service is running, you might need to stop and restart it.

2100-306 Failed to register protocol sequences.

Problem: Unable to register the controller as a DCE service using the UDP protocol.

Category: Distributed Computing Environment (DCE)

User action: For AIX: Verify that the DCE daemon (**dced**) is running. If the daemon is not running, start it. If the daemon is running, you might need to stop and restart it. Use SMIT to stop and restart the DCE daemon. Enter:

```
smit dce
```

For Windows: Verify that the RPC service (**rpcss**) is running. If the service is not running, start it. If the service is running, you might need to stop and restart it.

2100-307 Failed to get binding vector.

Problem: Unable to get the DCE binding vector.

Category: Distributed Computing Environment (DCE)

User action: For AIX: Verify that the DCE daemon (**dced**) is running. If the daemon is not running, start it. If the daemon is running, you might need to stop and restart it. Use SMIT to stop and restart the DCE daemon. Enter:

```
smit dce
```

For Windows: Verify that the RPC service (**rpcss**) is running. If the service is not running, start it. If the service is running, you might need to stop and restart it.

2100-308 Failed to register server to local endpoint map.

Problem: Unable to register the controller with DCE.

Category: Distributed Computing Environment (DCE)

User action: For AIX: Verify that the DCE daemon (**dced**) is running. If the daemon is not running, start it. If the daemon is running, you might need to stop and restart it. Use SMIT to stop and restart the DCE daemon. Enter:

```
smit dce
```

For Windows: Verify that the RPC service (**rpcss**) is running. If the service is not running, start it. If the service is running, you might need to stop and restart it.

2100-311 Failed to start server listen.

Problem: The controller is not able to receive RPC requests.

Category: Distributed Computing Environment (DCE)

User action: For AIX: Verify that the DCE daemon (**dced**) is running. If the daemon is not running, start it. If the daemon is running, you might need to stop and restart it. Use SMIT to stop and restart the DCE daemon. Enter:

```
smit dce
```

For Windows: Verify that the RPC service (**rpcss**) is running. If the service is not running, start it. If the service is running, you might need to stop and restart it.

2100-313 Unable to register with DP "<name>", host "<host>", port <number>, result <number>.

Problem: Unable to register the VideoCharger Server with the indicated data pump.

Category: Other

User action: Verify that the data pump is running (use check status command in "Starting, stopping, and checking status on VideoCharger components" on page 159). Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-314 Unable to connect to DP *data_pump_name, host host_name, port port_name, rc return_code*

Problem: The controller is unable to establish a session with the data pump.

Category: Data pump

User action:

1. Verify that the data exporter is running—if it isn't running, start it (use the commands in "Starting, stopping, and checking status on VideoCharger components" on page 159). When the data pump is running, verify that it is configured with the correct host name and program number by typing the following commands:

VideoCharger Error Messages

- a. `lsvsdp -l` to list the data pump name(s).
- b. `lsvsdp -l data_pump_name` to list the specific data pump information.
- c. Use the `chvsdp` command to correct any configuration problems.
- d. Use the `ping` command to determine if there are any IP network problems.

2100-315 Received **BROKEN_CONNECTION** event from the Data Exporter.

Problem: The controller lost contact with the data pump.

Category: Data pump

User action: Verify that the data exporter is running—if it isn't running, start it (use the commands in "Starting, stopping, and checking status on VideoCharger components" on page 159). Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-316 **RPC time-out when contacting the Data exporter.**

Problem: The data pump is not responding to requests.

Category: Data pump

User action:

1. Verify that the data exporter is running—if it isn't running, start it (use the commands in "Starting, stopping, and checking status on VideoCharger components" on page 159).
2. You can also stop and restart the data exporter (use the commands in "Starting, stopping, and checking status on VideoCharger components" on page 159).
3. Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).
4. If this problem persists, notify your service representative. Have the trace available before making the service call.

2100-317 **Unable to mount ODM object class** *object_class_name*

Problem: The controller configuration does not contain a required configuration object.

Category: Configuration

User action: Use the `lsvs` commands to determine if the configured objects are defined. If an object is not defined, use the `mkvs` commands to define the missing object.

2100-318 **Unable to open ODM object class** *object_class_name*

Problem: The controller configuration does not contain a required configuration object.

Category: Configuration

User action: Use the `lsvs` commands to determine if the configured objects are defined. If an object is not defined, use the `mkvs` commands to define the missing object.

2100-319 **Free trial period has expired. Contact an IBM service representative for licensing information.**

Problem: The free trial period has expired.

Category: Configuration

User action: Contact your service representative to get information on licensing the product.

2100-320 **Unable to get storage for object** *object_name*

Problem: The system is out of memory resources.

Category: Configuration

User action: Retry the operation when there is less load on the VideoCharger or increase the amount of memory available to the VideoCharger and other processes.

2100-321 **Invalid network type** *network_type* **specified for port group** *port_group_name*

Problem: The port group specified an invalid network type.

Category: Configuration

User action: Remove the port group and add it in again with a valid network type.

2100-322 **Duplicate port group** *port_group_name* **found in port group table.**

Problem: The port group was found in the configuration more than once.

Category: Configuration

User action: Each port group must have a unique name. Use the `rmvspg` and `mkvspg` commands to correct the configuration.

2100-323 **Duplicate port** *port_name* **found in port table.**

Problem: The port name was found in the configuration more than once.

Category: Configuration

VideoCharger Error Messages

User action: Each port must have a unique name. Use the `rmvsport` and `mkvsport` commands to correct the configuration.

2100-324 Duplicate data server *data_server_name*
found in current load table.

Problem: The data server was found in the configuration more than once.

Category: Configuration

User action: Each data server must have a unique name. Use the `rmvsdp` and `mkvsdp` commands to correct the configuration.

2100-325 Duplicate data exporter
data_exporter_name **found in current load table.**

Problem: The data exporter was found in the configuration more than once.

Category: Configuration

User action: Each data exporter must have a unique name. Use the `rmvsdp` and `mkvsdp` commands to correct the configuration.

2100-326 Duplicate data exporter
data_exporter_name **found in port table.**

Problem: The data exporter was found in the configuration more than once.

Category: Configuration

User action: Each data exporter must have a unique name. Use the `rmvsdp` and `mkvsdp` commands to correct the configuration.

2100-327 Duplicate asset group *asset_group_name*
found in plan bandwidth table.

Problem: The asset group was found in the configuration more than once.

Category: Configuration

User action: Each asset group must have a unique name. Use the `rmvsag` and `mkvsag` commands to correct the configuration.

2100-328 Duplicate stripe group *stripe_group_name*
found in plan bandwidth table.

Problem: The stripe group was found in the configuration more than once.

Category: Configuration

User action: Each stripe group must have a unique name. Use the `rmvssg` and `mkvssg` commands to correct the configuration.

2100-329 Duplicate stripe group *stripe_group_name*
found in current load table.

Problem: The stripe group was found in the configuration more than once.

Category: Configuration

User action: Each stripe group must have a unique name. Use the `rmvssg` and `mkvssg` commands to correct the configuration.

2100-330 Unable to add port group
port_group_name **to port group table.**

Problem: The port group could not be added to the internal tables.

Category: Configuration

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-331 Unable to add port *port_name* **to port table.**

Problem: The port could not be added to the internal tables.

Category: Configuration

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-332 Unable to add data server
data_server_name **to current load table.**

Problem: The data server could not be added to the internal tables.

Category: Configuration

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-333 Unable to add data exporter
data_exporter_name **to current load table.**

Problem: The data exporter could not be added to the internal tables.

Category: Configuration

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-334 Unable to add data exporter
data_exporter_name **to port table.**

Problem: The data exporter could not be added to the internal tables.

Category: Configuration

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

VideoCharger Error Messages

2100-335 **Unable to add asset group**
asset_group_name to plan bandwidth
table.

Problem: The asset group could not be added to the internal tables.

Category: Configuration

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-336 **Unable to add stripe group**
stripe_group_name to plan bandwidth
table.

Problem: The stripe group could not be added to the internal tables.

Category: Configuration

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-337 **Unable to add stripe group**
stripe_group_name to current load table.

Problem: The stripe group could not be added to the internal tables.

Category: Configuration

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-338 **Unable to create catalog path**
catalog_path.

Problem: The controller was unable to create the path for the server’s catalog.

Category: Configuration

User action: Check the permissions on the path. This message indicates that the server setup has been modified. It might be necessary to reinstall to correct the unexpected alteration of the server.

2100-339 **Unable to create metadata file path**
metafile_path.

Problem: The controller was unable to create the path for the server’s meta information.

Category: Configuration

User action: Check the permissions on the path. This message indicates that the server setup has been modified. It might be necessary to reinstall to correct the unexpected alteration of the server.

2100-340 **Unable to get disk capacity information**
for stripe group *stripe_group_name*.

Problem: The controller was unable to get the disk capacity information for the stripe group.

Category: Configuration

User action: Use `smi t mmfs` to check the following:

- The stripe group is defined to use MMFS on the data pump
 - MMFS is running
 - The stripe group has been calibrated in an MMFS performance group
-

2100-341 **Invalid disk capacity information**
returned for stripe group
stripe_group_name.

Problem: The controller received invalid disk capacity information for the stripe group.

Category: Configuration

User action: Use `smi t mmfs` to check the following:

- The stripe group is defined to use MMFS on the data pump
 - MMFS is running
 - The stripe group has been calibrated in an MMFS performance group
-

2100-342 **Unable to set ODM disk capacity**
information for stripe group
stripe_group_name.

Problem: The controller was unable to modify the existing configuration information.

Category: Configuration

User action: This message indicates that the server setup has been modified. It might be necessary to reinstall to correct the unexpected alteration of the server.

2100-343 **Unable to get ODM disk capacity**
information for stripe group
stripe_group_name.

Problem: The controller was unable to read the existing configuration information.

Category: Configuration

User action: This message indicates that the server setup has been modified. It might be necessary to reinstall to correct the unexpected alteration of the server.

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2100-344 Too many archive servers specified.

Problem: More than one archive server was configured.

Category: Configuration

User action: Remove the extra archive servers. Only one archive server can be defined.

2100-345 Ignore stripe group *stripe_group_name* : does not belong to archive server *archive_group_name*.

Problem: More than one stripe group was configured.

Category: Configuration

User action: Remove the extra stripe group.

2100-348 Stripe group *stripe_group_name* must be active for asset group *asset_group_name*.

Problem: The asset group is active, but the specified stripe group is not active.

Category: Configuration

User action: Make sure that all stripe groups in the asset group are active.

2100-350 Unable to find data server *data_server_name* in current load table.

Problem: The data server was not found in the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-351 Unable to find data exporter *data_exporter_name* in current load table.

Problem: The data exporter was not found in the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-352 Unable to find data exporter *data_exporter_name* in port table.

Problem: The data exporter was not found in the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-353 Unable to find port group *port_group_name* in port group table.

Problem: The port group was not found in the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-354 Unable to find port *port_name* in port table.

Problem: The port was not found in the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-355 Unable to find asset group *asset_group_name* in plan bandwidth table.

Problem: The asset group was not found in the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-356 Unable to find stripe group *stripe_group_name* in current load table.

Problem: The stripe group was not found in the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-357 Unable to find stripe group *stripe_group_name* in plan bandwidth table.

Problem: The stripe group was not found in the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-358 Unable to find data exporter *data_exporter_name* in data server *data_server_name* device list.

Problem: The data exporter was not found in the internal tables.

Category: Internal Resource Table

VideoCharger Error Messages

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-359 **Unable to add data exporter**
data_exporter_name **to port group**
port_group_name **device list.**

Problem: The controller could not add the data exporter to the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-360 **Unable to add port** *port_name* **to data**
exporter *data_exporter_name* **device list.**

Problem: The controller could not add the port to the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-361 **Unable to add data exporter**
data_exporter_name **to data server**
data_server_name **device list.**

Problem: The controller could not add the data exporter to the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-362 **Unable to add stripe group**
stripe_group_name **to data server**
data_server_name **device list.**

Problem: The controller could not add the stripe group to the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-363 **Unable to add stripe group**
stripe_group_name **to asset group**
asset_group_name **device list.**

Problem: The controller could not add the stripe group to the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-364 **Unable to add data server**
data_server_name **to stripe group**
stripe_group_name **device list.**

Problem: The controller could not add the data server to the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-365 **Unable to set asset group name for**
stripe group *stripe_group_name*.

Problem: The controller could not set the asset group in the internal tables.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-366 **Unable to activate data exporter**
data_exporter_name **in current load table.**

Problem: The controller could not activate the data exporter.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-367 **Unable to activate data exporter**
data_exporter_name **in port table.**

Problem: The controller could not activate the data exporter.

Category: Internal Resource Table

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-368 **No more capacity in SG**
stripe_group_name. *amount_of_bandwidth* **is**
requested and only *amount_of_bandwidth*
available.

Problem: The controller is unable to accept a new operation because the stripe group is at its bandwidth limit.

Category: Internal Resource Table

User action: Retry later.

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2100-369 **No more capacity in DE**
data_exporter_name. bandwidth_requested is requested and only bandwidth_available available.

Problem: The controller is unable to accept a new operation because the data pump is at its bandwidth limit.

Category: Internal Resource Table

User action: Retry later.

2100-370 **No more capacity in port** *port_name. bandwidth_requested is requested and only bandwidth_available available.*

Problem: The controller is unable to accept a new operation because the port is at its bandwidth limit.

Category: Internal Resource Table

User action: Retry later.

2100-371 **No more processor bus in DE**
data_exporter_name. bandwidth_requested is requested and only bandwidth_available available.

Problem: The controller is unable to accept a new operation because the data pump system bus is at its bandwidth limit.

Category: Internal Resource Table

User action: Retry later.

2100-372 **No more processor CPU in DE**
data_exporter_name. bandwidth_requested is requested and only bandwidth_available available.

Problem: The controller is unable to accept a new operation because the data pump processor is at its bandwidth limit.

Category: Internal Resource Table

User action: Retry later.

2100-374 **Unable to initialize ODM (odmerrno = <err>).**

Problem: Unable to initialize the AIX Object Data Management library.

Category: Configuration

User action: Notify your service representative.

2100-375 **Unable to set ODM path "<path>" (odmerrno = <err>).**

Problem: Unable to set the path name of the directory that holds the ODM objects required to configure the VideoCharger Server.

Category: Configuration

User action: Verify that the path actually exists. Verify that each directory level has read permission.

If the path exists and is accessible, notify your service representative.

2100-376 **Unable to read ODM configuration.**

Problem: Unable to read the VideoCharger Server configuration.

Category: Configuration

User action: Verify that VideoCharger Server configuration objects exist by listing the files in the /etc/objrepos directory. There should be several files that begin with the prefix "SCM". These files should have read and write access by the VideoCharger.

If these files do not exist, the installation might have failed. Reinstall the VideoCharger Server. If the problem persists, notify your service representative.

2100-377 **LockInit failed (rc = <err>).**

Problem: Unable to initialize a mutex lock.

Category: Configuration

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-378 **Mutexattr create failed (rc = <err>).**

Problem: Unable to create a mutex attribute.

Category: Configuration

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-379 **Mutexattr setkind failed (rc = <err>).**

Problem: Unable to set a mutex attribute.

Category: Configuration

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-404 **Failed to delete asset group catalog path**
group_catalog_path.

Problem: The controller could not delete the asset group catalog directory.

Category: Dynamic Configuration

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User action: This message indicates that the server setup has been modified. It might be necessary to reinstall to correct the unexpected alteration of the server.

2100-405 Failed to delete asset group metadata file path *group_metafile_path*.

Problem: The controller could not delete the meta information directory.

Category: Dynamic Configuration

User action: This message indicates that the server setup has been modified. It might be necessary to reinstall to correct the unexpected alteration of the server.

2100-414 Not enough space in stripe group *stripe_group_name*.

Problem: The stripe group did not have enough space to contain the required assets. When a stripe group from a different data pump is added to an asset group, the assets in that asset group are copied to the new stripe group. This message indicates that the new stripe group did not have enough space to hold the existing assets.

Category: Dynamic Configuration

User action: Ensure that the stripe group has enough space to hold the existing assets before adding the stripe group to the configuration.

2100-415 Last asset replica exists in stripe group *stripe_group_name*.

Problem: An attempt to remove a stripe group was made, but at least one asset was not replicated in another stripe group. This message is meant to prevent accidental destruction of assets.

Category: Dynamic Configuration

User action: To remove the stripe group, first delete the asset.

2100-425 Lock failed in function *function_name*, line *line_number*, (rc) 0xnnnnnnnn.

Problem: An attempt to lock a system resource failed with the specified return code in the specified function at the specified line number.

Category: Content Management

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-426 Failed to get file system information in function *function_name*.

Problem: The specified function failed to get the file system information for one of the configured stripe groups.

Category: Content Management

User action: See "Solving content loading problems" on page 88.

2100-427 Failed to malloc resource in function *function_name*.

Problem: The specified function was unable to allocate enough memory.

Category: Content Management

User action: Retry the operation when there is less load on the VideoCharger Server or increase the amount of memory available to the VideoCharger Server and other processes.

2100-428 Catalog opened error. Errno is *error_number*.

Problem: The server's catalog failed during open.

Category: Content Management

User action: This message indicates that the server setup has been modified. It might be necessary to reinstall to correct the unexpected alteration of the server.

2100-429 Failed to open a file in function *function_name*, (line) *line_number*, (errno) *error_number*.

Problem: A file internal to the server failed to open.

Category: Content Management

User action: This message indicates that the server setup has been modified. It might be necessary to reinstall to correct the unexpected alteration of the server.

2100-430 Failed to write to a file in function *function_name*, (line) *line_number*, (errno) *error_number*.

Problem: A file, internal to the server, failed to open.

Category: Content Management

User action: This message indicates that the server setup has been modified. It might be necessary to reinstall to correct the unexpected alteration of the server.

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2100-431 **Failed to write to a file in function**
function_name, (line) line_number, (errno)
error_number.

Problem: A read from a file internal to the server failed.

Category: Content Management

User action: This message indicates that the server setup has been modified. It might be necessary to reinstall to correct the unexpected alteration of the server.

2100-433 **Unable to connect to host** *"host_name "*
via port port_number.

Problem: The controller failed to connect to the content management daemon.

Category: Content Management

User action: See "Solving content loading problems" on page 88 for a list of actions.

2100-435 **Unable to login to user id** *"user_id "*
on host "host_name ".

Problem: The controller failed to log in to or out of the content management daemon.

Category: Content Management

User action: See "Solving content loading problems" on page 88 for a list of actions.

2100-437 **Unable to access** *"_____ "*
stripe group "stripe_group_name ".

Problem: The controller was unable to access the stripe group through the content management daemon.

Category: Content Management

User action: See "Solving content loading problems" on page 88 for a list of actions.

2100-438 **Unable to register controller with**
Content management daemon.

Problem: The controller was unable to register with the content management daemon.

Category: Content Management

User action: See "Solving content loading problems" on page 88 for a list of actions.

2100-442 **"<name>" is not a metadata file name.**

Problem: While building an internal asset catalog from metadata file information, a file was encountered in the catalog directory that was not a metadata file.

Category: Content Management

User action: No user action is required. The VideoCharger Server ignores the indicated file.

2100-443 **"<name>" does not contain its own**
metadata file name.

Problem: While building an internal asset catalog from metadata file information, a metadata file failed to pass validity checking.

Category: Content Management

User action: No user action is required. The VideoCharger Server ignores the indicated file.

2100-445 **Asset name "<asset>" in metadata file**
"<name>" already exists.

Problem: While building an internal asset catalog from metadata file information, a metadata file failed to pass validity checking.

Category: Content Management

User action: No user action is required. The VideoCharger Server ignores the indicated file.

2100-446 **No path to catalog (<name>).**

Problem: Unable to access metadata files from the indicated catalog directory path.

Category: Content Management

User action: Verify that the indicated directory path exists and that the VideoCharger Server has read and write access to the directory path. If the directory path does not exist, the installation might have failed. Reinstall the VideoCharger Server. If the problem persists, notify your service representative.

2100-450 **MS_Internal_error: (_____) Stream**
lock failed, (strH) 0x%08x%08x, (rc)
0x%08x.

Problem: Internal error.

Category: Stream

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-451 **MS_Internal_error: (_____) Stream**
entry failed, (strH) 0x%08x%08x, (rc)
0x%08x.

Problem: Internal error.

Category: Stream

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

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2100-452 **MS_Internal_error: (_____) Session lock failed, (sesH) 0x%08x%08x, (rc) 0x%08x.**

Problem: Internal error.

Category: Stream

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-453 **MS_Internal_error: (_____) Thread resource error, (rc) 0x%08x.**

Problem: Internal error.

Category: Stream

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-454 **Portmap error when contacting data pump: (rc) 0x%08x.**

Problem: The controller was unable to contact the data exporter. If this occurs during VideoCharger reboot, the VideoCharger components might be starting in the wrong order.

Category: Stream

User action:

1. Determine if the data exporter is running (use the command in “Starting, stopping, and checking status on VideoCharger components” on page 159).
2. If the data exporter is not running, start it (use the command in “Starting, stopping, and checking status on VideoCharger components” on page 159).
3. **For AIX:** Enter `lsvsdps` to list the information about the data pump. Ensure that the program number is a valid number. It is possible that another program on the machine is using that number. Use the `chvsdp` command to change the program number to another value.

If error occurred during VideoCharger reboot, make sure the components listed in the `/etc/inittab` file start after `tcpip` and `dce` in this order:

```
rcvsdp:2:wait:/etc/rc.vsdps 2>&1
| alog -tavs >/dev/console # Start Video
  Data Pump
rcvsdps:2:wait:/etc/rc.vsdps 2>&1
| alog -tavs >/dev/console # Stop Video
  Server
rcvsas:2:wait:/etc/rc.vsdps 2>&1
| alog -tavs >/dev/console # Start Video
  Server Appl. Server
rcvsrtspd:2:wait:/etc/rc.vsdps 2>&1
| alog -tavs >/dev/console
# Start RTSPD Daemon
rcvsmm:2:wait:/etc/rc.vsdps 2>&1
| alog -tavs >/dev/console # Start Media
  Manager Daemon
```

If you need to edit the order, make a copy of the current `inittab` first by typing `cp -p /etc/inittab/etc/inittab.old`.

2100-457 **MS_Internal_error: data pump error: (rc) 0x%08x.**

Problem: Internal error.

Category: Stream

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-458 **MS_Internal_error: Name lock error, Lock name _____, mode _____, (rc) 0x%08x.**

Problem: Internal error.

Category: Stream

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-460 **Unknown port event (<func>).**

Problem: An invalid port event was found in the indicated internal function.

Category: Event

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-461 **Unknown asset event (<func>).**

Problem: An invalid asset event was found in the indicated internal function.

Category: Event

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-462 **Unknown stream event (<func>).**

Problem: An invalid stream event was found in the indicated internal function.

Category: Event

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-463 **Unknown session event (<func>).**

Problem: An invalid session event was found in the indicated internal function.

Category: Event

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

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2100-464 Unknown resource event (<func>).

Problem: An invalid resource event was found in the indicated internal function.

Category: Event

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-465 Unknown event type (<func>).

Problem: An invalid event type was found in the indicated internal function.

Category: Event

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-470 fopen (<name>) error (errno = <err>).

Problem: Unable to open the indicated file.

Category: System

User action: Verify that the indicated file exists and that the VideoCharger Server has read access to that file.

Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-471 fprintf() failed, (<func>) (errno = <err>).

Problem: Unable to print in the indicated internal function.

Category: System

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-472 Invalid argument: <arg>.

Problem: The indicated argument is invalid.

Category: System

User action: If the problem resulted from using the `csdiag` command, verify that the argument is specified correctly.

2100-474 Thread id 0xn timer is about to orphan lock (<lock>).

Problem: An internal thread is about to end while still holding the indicated lock.

Category: System

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-475 Unable to initialize mutex (<func>).

Problem: Unable to initialize a mutex in the indicated function.

Category: System

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-476 Unable to initialize condition (<func>).

Problem: Unable to initialize a condition in the indicated function.

Category: System

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-477 Unable to lock mutex (<func>).

Problem: Unable to lock a mutex in the indicated function.

Category: System

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-478 Unable to malloc (<func>).

Problem: Unable to allocate storage in the indicated function.

Category: System

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-479 Unable to create thread data key.

Problem: Unable to create a thread data key.

Category: System

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-480 Unable to set <name> signal handler.

Problem: Unable to set the indicated signal handler.

Category: System

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-481 Internal error in function <name>, line <number>.

Problem: Internal VideoCharger Server in the indicated function.

Category: System

User action: Get a trace of the failure (follow

VideoCharger Error Messages

instructions in "Tracing a failure" on page 159).

2100-490 Content management connection to data pump has been lost.

Problem: The VideoCharger Server can no longer contact the data pump for content management purposes.

Category: Content Management

User action: Use the `lsvsdp` command to insure that the Data Pump is still active. Use the `FTP` command to verify content management configuration (see "Verifying content management configuration using FTP" on page 89).

2100-491 Internal error: problem with catalog "<named>" in function <func> on line <numb>.

Problem: An internal catalog error has occurred for the indicated asset group.

Category: Content Management

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-493 Transaction file is defective.

Problem: The pending transaction file is defective.

Category: Content Management

User action: The pending transaction file is an ASCII file found in the catalog directory.

Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-494 Unable to lock queue (<name>) (rc = <err>).

Problem: Unable to lock the indicated queue.

Category: Content Management

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-495 Failed to read file "<file>" (errno = <err>).

Problem: The system failed to read the indicated file.

Category: Content Management

User action: Verify that the indicated file exists and that the VideoCharger Server has read access to the file. Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-496 Unable to get current working directory (errno = <err>).

Problem: The system is unable to change to the current working directory.

Category: Content Management

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-497 Unable to remove file (<file>).

Problem: The system is unable to remove the indicated file.

Category: Content Management

User action: Verify that the indicated file exists and that the VideoCharger Server has write access to the file. Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-498 Unable to change to directory (<path>) (errno = <err>).

Problem: The system is unable to change to the indicated directory.

Category: Content Management

User action: Verify that the indicated path exists and that the VideoCharger Server has read access to the path. Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-499 Unable to generate path name (<path>).

Problem: Unable to generate a path name to metadata files.

Category: Content Management

User action: Verify that the indicated path exists and that the VideoCharger Server has read and write access to the path. Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-593 Size of "<asset>" (<size1>) not equal to expected size (<size2>).

Problem: An imported asset using the `msLoad` interface was not the expected size.

Category: Other

User action: If this message occurs when using the `vsload` command, then the `vsload` command deletes the asset. Otherwise, the user should delete the asset because it is probably not complete.

This problem can occur when an asset load operation is aborted.

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2100-596 Invalid trace component (<id>).

Problem: An invalid trace component ID was found.

Category: Other

User action: Verify your use of the `csdiag` command.

If this problem persists, notify your service representative.

2100-597 Unable to log this message to the system error log.

Problem: Unable to log this message to the system error log.

Category: Other

User action: Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-598 Unable to access message catalog <name>, <msg>.

Problem: When VideoCharger was installed, the LANG environment might not have been set to a valid VideoCharger-supported language.

Category: Other

User action: While logged in as user root, type the command: `locale`. All variables except `LC_ALL` should be set to one of these valid languages: `en_US`, `Ja_JP`, `Ko_KR`, `Zh_TW`, `zh_CN`, and `pt_BR`. If all variables are set to a valid language, look in the `/usr/lib/nls/msg/valid_language` directory where `valid_language` represents your locale code. If (a) this directory contains less than a hundred files, or (b) variables returned by the `locale` command were not set to a valid language, then complete the following steps:

1. Type `smitty`.
2. Select **System Environment** → **Manage Language Environment** → **Change/Show Primary Language** → **Change/Show Cultural Convention, Language, or Keyboard**.
3. Press F4 to list valid selections for Primary CULTURAL convention and for Primary LANGUAGE translation.
4. Select your locale (for `en_US`, select ISO8859-1) and press the Enter key to make the change.
5. Insert the AIX CD-ROMs to complete the change.
6. Re-insert the VideoCharger CD-ROM to reinstall VideoCharger.
7. Type `smitty`.
8. Select **Software Installation and Maintenance** → **Install and Update Software** → **Install and Update from ALL Available Software**.
9. At the Install and Update from ALL Available Software Menu, press the F4 key to show the list of SOFTWARE to install.

10. Install all filesets that contain your locale code in the name (such as `msg` and locale filesets).

11. Reboot the machine.

If the problem persists, notify your service representative.

2100-599 Unable to locate message text for message number <number>.

Problem: Unable to find the specified message number in the message catalog.

Category: Other

User action: Reinstall the VideoCharger Server message catalog(s). If problem persists, notify your service representative.

2100-840 Cannot retrieve port name.

Problem: The TCP/IP hostname for a LAN interface might not match the VideoCharger port name associated with that same interface. For example, you VideoCharger Server might have an ethernet interface (`en0`) which you associated (either in the `nameserver` or the `etc/hosts` file) with the TCP/IP name `video0`. In this case, the VideoCharger portname must also be `video0`.

Category: Other

User action: Check the names of your VideoCharger ports by using the VideoCharger administrator Web pages (http://your_server_hostname/vs_admin/cgi-bin/vscfg.cgi/vscommport_cfg). Click **List**. The Name for each port must match the name in the Descriptor. For the above example, results would look something like this:

Name video0

State Active

Descriptor
en0:video0.yourdomain.com

Port Type
INET

Attention: The VideoCharger port name does not need to include the domain name.

If the port name does not match the TCP/IP name, delete the port and then add it back from http://your_server_hostname/vs_admin/cgi-bin/vscfg.cgi/vscommport_cfg.

2100-901 Bandwidth is in an invalid form.

Problem: A bandwidth value passed to a command is not in the form of a number. For example, `2356k79` is not a valid number. Also, the number might be outside of the accepted range for the command.

VideoCharger Error Messages

Category: System Management

User action: Supply a valid value to the command.

2100-902 Object %s already exists.

Problem: An object with the specified name already exists.

Category: System Management

User action: Choose a different name and reissue the command.

2100-903 Database add failed.

Problem: The command could not add a record to the database.

Category: System Management

User action: Reissue the command. Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-904 Database change failed.

Problem: The command could not change a record in the database.

Category: System Management

User action: Reissue the command. Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-905 All stripe groups must be active to activate an asset group.

Problem: An asset group cannot be activated until all of its associated stripe groups are active.

Category: System Management

User action:

1. Issue the `lsvsag` command. Enter:
`lsvsag -l agname`

where `agname` is the name of the asset group that you want to activate. The output from this command contains a list of the stripe groups associated with the asset group.

2. Ensure that each of these stripe groups is active by running the `lsvssg` and `mkvssg` commands.
 3. Attempt to activate the asset group.
-

2100-906 Control Server is not active.

Problem: The command requires that the controller be running.

Category: System Management

User action: Start the controller and reissue the command.

2100-907 Option must be answered Yes or No.

Problem: One of the command options required an answer of 'Yes' or 'No'.

Category: System Management

User action: Specify 'Yes' (Y or 1) or 'No' (N or 0) to the command.

2100-908 No CDS path specified. A path is required if CDS is used.

Problem: No CDS path was specified.

Category: System Management

User action: Specify a CDS path.

2100-910 Type %s is invalid.

Problem: An invalid type was provided to a command.

Category: System Management

User action: Supply a valid type. See the command documentation for a list of valid types.

2100-911 Memory deallocation failed.

Problem: The command experienced an internal error.

Category: System Management

User action: Determine the state of any object that the command was modifying by using the appropriate list (`lsvsxx`) commands. For example, if the error occurred while running the `mkvsag` command, issue `lsvsag` to verify that the asset group was created correctly. If necessary, reissue the original command. Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-912 Object %s is in an incorrect state.

Problem: An attempt was made to inactivate or quiesce a stripe group whose associated asset group was still active.

Category: System Management

User action: Use the `rmvsag` command to inactivate the asset group associated with the stripe group. Reissue the command to change the stripe group state.

2100-913 Size exceeds the maximum allowable limit.

Problem: A size passed to a command is too large.

Category: System Management

VideoCharger Error Messages

User action: Reissue the command with a smaller value. See the command documentation for size limits.

2100-914 Database lock failed.

Problem: The command could not obtain a lock on the database object that it was attempting to update.

Category: System Management

User action: Reissue the command. Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-917 Parent object %s does not exist.

Problem: An attempt was made to create an object, such as a port or stripe group, which required the existence of another object, such as a data pump.

Category: System Management

User action: Ensure that the parent object exists, then run the command again. To ensure that a data pump exists enter the `lsvsdp` command. If the data pump does not exist, create it using the `mkvsdp` command.

2100-918 Object %s does not exist.

Problem: The specified object does not exist.

Category: System Management

User action: Create the specified object or choose a different object.

2100-919 Default asset group not found.

Problem: The command is attempting to perform an operation on the default asset group, but no default asset group can be found.

Category: System Management

User action: Either reissue the command with an asset group specified with the `-g` parameter, or change an existing asset group to be the default and reissue the command.

2100-920 Object %s could not be removed.

Problem: The command could not successfully remove an object from the database.

Category: System Management

User action: Reissue the command. Get a trace of the failure (follow instructions in “Tracing a failure” on page 159).

2100-921 Object %s is already in QUIESCING state.

Problem: An attempt has been made to change an object to the QUIESCING state. The object is already in the QUIESCING state.

Category: System Management

User action: See the command documentation for information about the states of objects.

2100-922 Object %s is already in INACTIVE state.

Problem: An attempt has been made to change an object to the INACTIVE state. The object is already in the INACTIVE state.

Category: System Management

User action: See the command documentation for information about the states of objects.

2100-923 Object %s is already in ACTIVE state.

Problem: An attempt has been made to change an object to the ACTIVE state. The object is already in the ACTIVE state.

Category: System Management

User action: See the command documentation for information about the states of objects.

2100-924 Object %s needs to be removed first.

Problem: A command cannot perform the requested operation because some existing object must be removed. For example, an asset group cannot be removed until all stripe groups belonging to the asset group are removed.

Category: System Management

User action: Remove the object indicated in the error message and reissue the original command.

2100-925 Object %s should be in INACTIVE state to be removed.

Problem: An attempt has been made to remove an object that is active.

Category: System Management

User action: An object must first be inactivated before it can be removed. Issue the appropriate inactivation command for the object and reissue the delete command. For example, to remove the asset group MyAG, issue the `rmvsag` command:

```
rmvsag -l MyAG
```

Then, issue the command again:

```
rmvsag -l MyAG -d
```

VideoCharger Error Messages

2100-926 Child object %s is in an incorrect state.

Problem: A command cannot perform the requested operation because an object is in an incorrect state.

Category: System Management

User action: See the command documentation for any command dependencies. Change the state of the child object to the necessary state and retry the original command.

2100-927 Control Server interrupt error.

Problem: The command failed to successfully notify the controller of a database change.

Category: System Management

User action: Ensure that the controller is running by issuing the following command:

For AIX: `lssrc -s vscs`

For Windows: `vsstat`

If the controller is not running, start it and reissue the original command. If the controller is running, get a trace on the API (follow instructions in "Tracing a failure" on page 159). If the problem persists, notify your service representative. Have the trace available before making the service call.

2100-928 Assets exist.

Problem: An attempt has been made to remove a stripe group that still contains assets.

Category: System Management

User action: Ensure that all assets have been removed from the stripe group by running the `vslist` command and then the `vsdelete` command. Then remove the stripe group.

2100-929 Asset type %s is invalid.

Problem: The asset type supplied to the command is invalid.

Category: System Management

User action: Choose a valid asset type and reissue the command.

2100-930 Program Number %s is not unique.

Problem: The program number specified in the command is already in use by the existing data pump.

Category: System Management

User action: Reissue the command with a different program number.

2100-931 Control Server configuration error.

Problem: An unexpected error has occurred.

Category: System Management

User action: Get a trace of the failure (follow instructions in "Tracing a failure" on page 159).

2100-932 Invalid Parameter.

Problem: One of the parameters supplied to the command was invalid.

Category: System Management

User action: Verify that all parameters are in range and correctly spelled, then reissue the command.

2100-933 Object %s is in the INACTIVE state and cannot be quiesced.

Problem: An attempt has been made to quiesce an inactive object. Only active objects can be quiesced.

Category: System Management

User action: See the documentation for information on the state of objects.

2100-934 Unable to access data pump configuration.

Problem: If this message followed a `chvsdp` command, the data pump password you tried to set for the content management ID (`vsloader`) did not match the AIX user ID (also `vsloader`) password.

Category: System Management

User action: For AIX: Try to login (for example, `telnet`) to the AIX machine using the `vsloader` ID. Type `chvsdp` to find out the password and then use that password for your data pump ID. If that doesn't work, type `host yourmachineshostname` where *yourmachineshostname* represents your machine's host name, and look in your `/home/vsadmin/.rhosts` file to make sure the host name matches what's in there.

Verify that the configuration steps for the data pump have been completed correctly. Verification involves checking the `.rhosts` file on the data pump, running the `pwdadm` command for `vsadmin`, and other tasks described in this book.

For Windows: Verify that the data exporter was properly installed.

2100-936 Object class is empty.

Problem: The command could not locate needed objects.

Category: System Management

User action: Verify the existence of objects using the

VideoCharger Error Messages

lsxxx commands, then retry the original command. If the problem persists, contact your service representative.

2100-937 **Asset group %s already contains a stripe group on the data pump %s.**

Problem: An attempt has been made to add a stripe group to a data pump that already contains a stripe group.

Category: System Management

User action: Choose a different data pump to contain the stripe group and reissue the command.

2100-939 **Stripe group %s is not in the ACTIVE state.**

Problem: The indicated stripe group must be in the ACTIVE state for the command to complete successfully.

Category: System Management

User action: Activate the stripe group with the **mkvssg** command.

2100-940 **Asset group %s cannot be made ACTIVE.**

Problem: The asset group contains a stripe group that is in the INACTIVE state.

Category: System Management

User action: Activate the stripe group with the **mkvssg** command.

2100-941 **Database unlock failed.**

Problem: The command could not unlock the database.

Category: System Management

User action: Notify your service representative if the problem persists.

2100-942 **Default port group not found.**

Problem: No port group was specified with the command and no default port group of the appropriate type could be found.

Category: System Management

User action: Change an existing port group of the appropriate type to default using the **chvspg** command, or create a new default port group using the **mkvspg** command.

2100-943 **Control Server is active.**

Problem: The command requires the Control Server to be stopped.

Category: System Management

User action: Stop the Control Server and reissue the command.

2100-944 **Specified data pump host %s already contains a data pump object.**

Problem: An attempt has been made to add a data pump object to a host that already contains a data pump.

Category: System Management

User action: Add the data pump object to a different host; a given host can contain only a single data pump.

2100-947 **Object %s is already being used by %s.**

Problem: An object cannot be used by the command because the object is already being used by another object.

Category: System Management

User action: Reissue the command with a different object that is not in use, or release the original object.

2100-948 **Invalid port descriptor.**

Problem: The port descriptor supplied to the command does not exist or is in an invalid format.

Category: System Management

User action: Reissue the command with an existing and valid port descriptor.

2100-949 **Memory allocation failed.**

Problem: The command does not have enough memory to run.

Category: System Management

User action: Stop any unused programs and reissue the command. If the problem persists, contact your service representative.

2100-950 **Invalid stripe group path.**

Problem: The path specified with the **mkvssg** command is either invalid or is not within a Multimedia File System.

Category: System Management

User action: Supply a valid path and reissue the command. Also, enter **lssrc -s mmfs** to verify that the MMFS daemon is running. If the daemon is inoperative, restart it by entering **startsrc -s mmfs** and

VideoCharger Error Messages

then try the original command again. If the problem persists, contact your service representative.

2100-951 Invalid data pump host %s.

Problem: The specified data pump host could not be found.

Category: System Management

User action: Verify that the specified host is valid and accessible, then reissue the command. If the problem persists, notify your service representative.

2100-952 Database open failed.

Problem: The command could not open a necessary database class.

Category: System Management

User action: Reissue the command. If the problem persists, notify your service representative.

2100-953 Database set path failed.

Problem: The command was unable to determine the path to the database (/etc/objrepos).

Category: System Management

User action: Reissue the command. If the problem persists, notify your service representative.

2100-954 Database get failed.

Problem: The command was unable to retrieve a needed record from the database.

Category: System Management

User action: Reissue the command. If the problem persists, notify your service representative.

2100-955 The port and port group types must match.

Problem: An attempt was made to add a port to a port group of a different type.

Category: System Management

User action: Create a new port group of the correct type and add the port to it.

2100-956 Object %s must be configured before use.

Problem: The specified object is not in a usable state and must be configured.

Category: System Management

User action: Configure the specified object. In the case of a network interface, such as en0, configuration involves specifying the network address of the

interface, providing a network mask, and designating a name server, using smitty tcpip. Other objects have different configuration procedures. If the problem persists, contact your service representative.

2100-957 The port descriptor %s is not valid for ports of type %s.

Problem: A port descriptor exists, but is of a different type than the port object. For example, the port descriptor en0 might exist on a machine, but cannot be associated with a port of type ANALOG because en0 is not an analog device. en0 can belong only to ports of type INET or CL.

Category: System Management

User action: Associate the port descriptor with a port of an appropriate type.

2101-201 This option is not recognized: %s

Problem: The option indicated is not valid for the command specified.

Category: Content Management

User action: Verify command usage for the command specified, and reissue the command.

2101-202 This option must be specified: %s

Problem: The option indicated is a required option, but the option was not specified or recognized in the command.

Category: Content Management

User action: Specify the option and reissue the command.

2101-203 This option argument is invalid: %s

Problem: The argument indicated with the command option is not valid.

Category: Content Management

User action: Verify command usage for the command specified, and reissue the command.

2101-204 The vsload or vsstage command did not complete successfully, session with server was disconnected.

Problem: The communication with the server was disconnected.

Category: Content Management

User action: Review system logs or contact your service representative.

2101-205 An internal processing error occurred, operating system API-(%s) errno-(%d).

Problem: An unexpected return code from internal processing was encountered.

Category: Content Management

User action: Review system logs or contact your service representative.

Control Server Error: System bandwidth request rejected for asset %s, address %s: CPU %d, Threshold %d, RAM %d, Threshold %d.

Problem: The percent signs represent: asset name, client IP address, current CPU usage, calibrated CPU threshold, current RAM usage, and calibrated memory threshold respectively. If this msg appears, either (a) current CPU usage exceeded calibrated CPU threshold, or (b) current RAM usage exceeded calibrated memory threshold.

Category: System Management

User action: Play again at a later time. Or, increase bandwidth/threshold values using the `chvsdp` command (AIX) or the **Calibrate VideoCharger Resources** Web page (Windows).

Control Server Error: [Disk|Network] bandwidth request rejected for asset %s, address %s: allocated %d, requested %d, capacity %d.

Problem: The percent signs represent: asset name, client IP address, current bandwidth usage, how much bandwidth AWS requested for this operation, and what the total capacity is respectively. If this message appears, allocated bandwidth plus requested bandwidth exceeded capacity.

Category: System Management

User action: Play again at a later time. Or, increase bandwidth/threshold values using the `chvsdp` command (AIX) or the **Calibrate VideoCharger Resources** Web page (Windows).

Validation of Asset Type failed.

Problem: An invalid combination of asset type descriptors was supplied to the command. For example, supplying MPEG1+PGMSTR as the asset type would produce this error because only MPEG2 supports the PGMSTR option.

Category: System Management

User action: Verify that the asset type you supplied is valid according to the `mkvsag` command, then issue the command again.

VideoCharger Error Messages

VideoCharger problem reporting

Background information

1. Record the Current Date and Time _____
2. Record the System Date and Time (if available) _____
3. Record the Symptom _____
4. Record the Service Request Number (SRN) or error codes

5. Record the Three-Digit Codes (if available)
_ _ _ - _ _ _ - _ _ _ - _ _ _
6. Record the Location Codes
First FRU _ _ _ - _ _ _ - _ _ _ - _ _ _
Second FRU _ _ _ - _ _ _ - _ _ _ - _ _ _
Third FRU _ _ _ - _ _ _ - _ _ _ - _ _ _
Fourth FRU _ _ _ - _ _ _ - _ _ _ - _ _ _

Problem description

Data captured

(Describe data captured, such as system dumps, core dumps, error IDs, error logs, or messages, that need to be examined by your service organization.)

(After completing this form, copy it and keep it on hand for future problem solving reference. Check the VideoCharger Web site at <http://www.ibm.com/software/data/videocharger/> for updates to problem reporting.)

Accessibility features

This product includes a number of features that make it more accessible for people with disabilities. These features include:

- The ability to operate all features using the keyboard instead of the mouse.
- Support for enhanced display properties
- Options for video and audio alert cues
- Compatibility with assistive technologies
- Compatibility with operating system accessibility features
- Accessible documentation formats

Keyboard input and navigation

The following features are available for keyboard input and navigation:

Keyboard input

You can use the keyboard instead of a mouse to operate the product.

Menu items and controls provide access keys that allow you to activate a control or select a menu item directly from the keyboard. These keys are self-documenting; the access keys are underlined on the control or menu where they appear.

Keyboard focus

In Windows-based systems, the position of the keyboard focus is highlighted, indicating which area of the window is active and where your keystrokes will have an effect.

Response time adjustments

In Windows-based systems, you can adjust response times through your control panel.

Features for accessible display

The clients have a number of features that enhance the user interface and improve accessibility for users with low vision. These enhancements include support for high-contrast settings and customizable font properties.

High-contrast mode

The clients support the high-contrast mode option that is provided by the operating system. This feature supports a higher contrast between background and foreground colors.

Font settings

In Windows-based systems, you can specify display settings that determine the color, size, and font for the text in menus and dialog windows. The client allows you to select the font for the document list.

Non-dependence on color

You do not need to distinguish between colors in order to use any function of this product.

Alternative alert cues

In Windows-based systems, the SoundSentry feature can be used to provide visual feedback for general application and system alerts such as warning beeps. You can also adjust the volume of sound alerts.

Compatibility with assistive technologies

The clients are compatible with screen reader applications such as Narrator and Via Voice. The clients have properties required for these accessibility applications to make onscreen information available to visually impaired users.

Accessible documentation

Documentation for this product is available in PDF format. You can convert the PDF files to HTML or text using free tools available from Adobe at access.adobe.com. This allows users to view documentation according to the display preferences set in their browsers. It also allows the use of screen readers and other assistive technologies.

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Glossary

This glossary defines terms and abbreviations specific to this system. Terms shown in *italics* are defined elsewhere in this glossary.

A

accessory script. A *CGI script* that processes SEARCH, POST, PUT, or DELETE requests. The accessory scripts process requests that are not explicitly mapped to a CGI script named on an EXEC directive.

address. The unique code assigned to each device or workstation connected to a network. See also *IP address*.

admission control. The process used by the server to ensure that its bandwidth needs are not compromised by new asset requests.

aggregate bandwidth. Total throughput, in megabits per second, that moves through a server or server subsystem.

alias. In the *Internet*, a name assigned to a server that makes the server independent of the name of its host machine. The alias must be defined in the *domain name server*.

American National Standard Code for Information Interchange (ASCII). The standard code, using a coded character set consisting of 7-bit coded characters (8 bits including parity check), that is used for information interchange among data processing systems, data communication systems, and associated equipment. The ASCII set consists of control characters and graphic characters.

analog video. Video in which the information that represents images is in a continuous-scale electrical signal for amplitude and time.

API. See *application programming interface*.

application programming interface (API). A software interface that enables applications to communicate with each other. An API is the set of programming language constructs or statements that can be coded in an application program to obtain the specific functions and services provided by the underlying licensed program.

application server. Software that handles communication with the client requesting an asset and queries of the Content Manager.

ASCII. See *American National Standard Code for Information Interchange*.

asset. A digital multimedia resource that is stored for later retrieval as requested by an application. An example of such a resource is a digitized video or audio file. An asset is stored as a file in a multimedia file system supported by the *data pump*.

asset group. An organizational grouping within the multimedia file system with similar characteristics. You can use an asset group to allocate resources of a *data pump*. For example, you could establish two asset groups representing distinct departments whose assets should be kept separate for security or billing purposes.

asymmetric video compression. In multimedia applications, the use of a powerful computer to compress a video so that a less powerful system can decompress it.

asynchronous transfer mode (ATM). A transfer mode in which the information is organized into cells; it is asynchronous in the sense that the recurrence of cells containing information from an individual user is not necessarily periodic. ATM is specified in international standards such as ATM Forum UNI 3.1.

attribute. A unit of data that describes a certain characteristic or property (for example, name, address, age, and so forth) of an item, and which can be used to locate that item. An attribute has a type, which indicates the range of information stored by that attribute, and a value, which is within that range. For example, information about a file in a multimedia file system, such as title, running time, or encoding type (MPEG1, H.263, and so forth).

audio. The sound portion of a video signal.

Audio/Video Interleaved (AVI). A RIFF (*Resource Interchange File Format*) file specification that permits audio and video data to be interleaved in a file. The separate tracks can be accessed in alternate chunks for playback or recording while maintaining sequential access on the file device.

Audio-Video Subsystem (AVS). File format for files that can contain video and audio data, video-only data, audio-only data, or image data (a single still image). The Audio-Video Subsystem format is supported by the ActionMedia II MMPM/2 Media Control interface.

AVI. See *Audio/Video Interleaved*.

AVS. See *Audio-Video Subsystem*.

B

background. The conditions under which low priority, non-interactive programs are run.

bandwidth. (1) The difference, expressed in *Hertz*, between the highest and the lowest frequencies of a range of frequencies. (2) In *asynchronous transfer mode* (ATM), the capacity of a virtual channel, expressed in terms of peak cell rate (PCR), sustainable cell rate (SCR), and maximum burst size (MBS). (3) A measure of the capacity of a communication transport medium (such as a TV cable) to convey data.

baseband. A frequency band that uses the complete bandwidth of a transmission.

batch. (1) An accumulation of data to be processed. (2) A group of records or data processing jobs brought together for processing or transmission.

bitmap. (1) A representation of an image by an array of bits. (2) A pix map with a depth of one bit plane.

block. A string of data elements recorded or transmitted as a unit. The elements can be characters, words, or physical records. Disk device drivers currently use a block size of 32 KB or 256 KB to write to the disk.

broadband. A frequency band divisible into several narrower bands so that different kinds of transmissions (such as voice, video, and data) can occur at the same time. See *baseband*.

bus. A facility for transferring data between several devices located between two end points, only one device being able to transmit at a given moment.

C

cache. A special-purpose buffer, smaller and faster than main storage, used to hold a copy of data that can be accessed frequently. Use of a cache reduces access time, but might increase memory requirements.

caching proxy server. A proxy server that can store the documents it retrieves from other servers in a local *cache*. The catching proxy server can then respond to subsequent requests for these documents without retrieving them from other servers, a process that can improve response time.

cardinality. The number of rows in a database table.

CGI. See *Common Gateway Interface*.

CGI script. A computer program that runs on a Web server and uses the *Common Gateway Interface (CGI)* to perform tasks that are not usually done by a Web server (for example, database access and form

processing). A CGI script is a CGI program that is written in a scripting language such as Perl.

client. A computer system or process that requests a service of another computer system or process that is typically referred to as a server. Multiple clients can share access to a common server.

client/server. In communications, the model of interaction in distributed data processing in which a program at one site sends a request to a program at another site and awaits a response. The requesting program is called a client; the answering program is called a server.

codec. A processor that can code analog audio or video information in digital form for transmission, and decode digital data back to analog form.

Common Gateway Interface (CGI). A standard for the exchange of information between a Web server and programs that are external to it. The external programs can be written in any programming language that is supported by the operating system on which the Web server is running. See *CGI script*.

compressed audio. A method of digitally encoding and decoding several seconds of voice quality audio per single videodisc frame. This increases the storage capability to several hours of audio per videodisc. Sometimes referred to as still frame audio or sound over still.

compressed video. A video resulting from the process of digitally encoding and decoding a video image or segment using a variety of computer techniques to reduce the amount of data required to represent the content accurately.

compression. The process of eliminating gaps, empty fields, redundancies, and unnecessary data to shorten the length of records or blocks.

controller. The functional component responsible for resource management (load balancing and admission control). The controller communicates with one or more *data pumps* to initiate and terminate connections to clients.

D

data pump. The combination of the disks that hold the data and the networking hardware and software required to deliver assets to clients.

data rate. The rate at which data is transmitted or received from a device. Interactive applications tend to require a high data rate, while batch applications can usually tolerate lower data rates.

data striping. Storage process in which information is split into blocks (a fixed amount of data) and the blocks are written to (or read from) a series of disks in parallel.

data transfer rate. The average number of bits, characters, or blocks per unit time passing between corresponding equipment in a data transmission system.

Notes:

1. The rate is expressed in bits, characters, or blocks per second, minute, or hour.
2. Corresponding equipment should be indicated; for example, modems, intermediate equipment, or source and sink.

DCE. See *Distributed Computing Environment*.

decode. To convert data by reversing the effect of some previous encoding.

decompression. Process of restoring compressed data to its original state, so that it can be used again.

device driver. Software used to manage a specific device. Other software uses the device driver as the interface to the device for reading, writing, and control functions.

digital. Pertaining to data in the form of digits.

digital audio. Audio tones represented by machine-readable binary numbers rather than by analog recording techniques.

digital video. Video in which the information (usually including audio) is encoded as a sequence of binary digits. The information is usually compressed. It can be stored and transported just as any other digital information. Viewing digital video involves decompressing the video data, converting it to an analog form, displaying the video on a monitor, and playing the sound through an amplifier and speakers.

digitize. To convert analog video and audio signals into digital format.

digitized image. An image derived from a scanning device or a digitizing card with a camera.

Distributed Computing Environment (DCE). The Open Software Foundation (OSF) specification (or a product derived from this specification) that assists in networking. DCE provides such functions as authentication, directory service (DS), and remote procedure call (RPC).

document root directory. The primary directory where a Web server stores accessible documents. When the server receives requests that do not point to a specific directory, it tries to serve the request from this directory.

domain. That part of a computer network in which the data processing resources are under common control.

domain name. In the *Internet* suite of protocols, a name of a host system. A domain name consists of a sequence of subnames separated by a delimiter character.

domain name server. In the *Internet* suite of protocols, a server that responds to queries from clients for name-to-address and address-to-name mappings as well as for other information.

dotted decimal notation. The syntactical representation of an IP address. The 4 bytes of the address are written as four decimal numbers separated by periods (dots), for example, 9.37.83.123.

E

encode. To convert data by using a code in such a manner that reconversion to the original form is possible.

Ethernet. A 10-Mbps baseband local area network that allows multiple stations to access the transmission medium at will without prior coordination, avoids contention by using carrier sense and deference, and resolves contention by using collision detection and transmission.

Extensible Markup Language (XML). A standard metalanguage for defining markup languages that was derived from, and is a subset of, SGML. XML omits the more complex and less-used parts of SGML and makes it much easier to write applications to handle document types, author and manage structured information, and transmit and share structured information across diverse computing systems. The use of XML does not require the robust applications and processing that is necessary for SGML. XML is being developed under the auspices of the World Wide Web Consortium (W3C).

External Data Representation (XDR). A standard, developed by Sun Microsystems, Incorporated, for representing data in machine-independent format.

F

F-Coupler (frequency coupler). A physical device that merges broadband analog signals with digital data on an IBM Cabling System using shielded twisted-pair wiring. The IBM F-Coupler separates analog signals and sends them from the IBM Cabling System to the workstation. The F-Coupler allows the IBM Cabling System to accommodate simultaneous analog video with data traffic on a token-ring network.

FDDI. See *Fiber Distributed Data Interface*.

Fiber Distributed Data Interface. An American National Standards Institute (ANSI) standard for a 100-Mbps LAN using optical fiber cables.

file name extension. An addition to a file name that identifies the file type (for example, text file or program file).

file system. In AIX, the method of partitioning a hard drive for storage. See also *multimedia file system*.

file system manager. The component that manages the multimedia file system.

File Transfer Protocol (FTP). In the *Internet* suite of *protocols*, an application layer protocol that uses *Transmission Control Protocol (TCP)* and Telnet services to transfer bulk-data files between machines or hosts.

firewall. (1) In communication, a functional unit that protects and controls the connection of one network to other networks. The firewall (a) prevents unwanted or unauthorized communication traffic from entering the protected network and (b) allows only selected communication traffic to leave the protected network. (2) In equipment, a partition used to control the spread of fire.

fps. Frames per second. The number of frames displayed per second.

fragment. The smallest unit of file system disk space allocation. A fragment can be 512, 1024, 2048, or 4096 bytes in size. The fragment size is defined when a file system is created.

frequency coupler. See *F-coupler*.

FTP. See *File Transfer Protocol*.

full-motion video. Video reproduction at 30 frames per second (*fps*) for *NTSC* signals or 25 *fps* for *PAL* signals.

G

gateway. A functional unit that interconnects two computer networks with different network architectures. A gateway connects networks or systems of different architectures. A bridge interconnects networks or systems with the same or similar architectures.

GB. See *gigabyte*.

gigabyte (GB). (1) For processor storage, real and virtual storage, and channel volume, 2^{30} , or 1 073 741 824 bytes. (2) For disk storage capacity and communications volume, 1 000 000 000 bytes.

H

Hertz (Hz). A unit of frequency equal to one cycle per second. In the United States, line frequency is 60 Hz or a change in voltage polarity 120 times per second; in Europe, line frequency is 50 Hz or a change in voltage polarity 100 times per second.

home page. The initial Web page that is returned by a Web site when you enter the address for the Web site in a Web browser. For example, if a user specifies the address for the IBM Web site, which is <http://www.ibm.com>, the Web page that is returned is the IBM home page. Essentially, the home page is the entry point for accessing the contents of the Web site.

host. A computer, connected to a network, which provides an access point to that network. A host can be a client, a server, or a client and a server simultaneously.

host name. In the *Internet* suite of *protocols*, the name given to a computer. Sometimes, host name refers to the fully qualified domain name; other times, it is used to mean the most specific subname of a fully qualified domain name. For example, if mycomputer.city.company.com is the fully qualified domain name, either of the following might be considered the host name:

- mycomputer.city.company.com
- mycomputer

HTML. See *Hypertext Markup Language*.

HTTP (Hypertext Transfer Protocol). In the *Internet* suite of *protocols*, the protocol that is used to transfer and display hypertext documents

HTTPd. See *HTTP daemon*.

HTTP daemon. A multithreaded Web server that receives incoming *Hypertext Transfer Protocol (HTTP)* requests.

HTTP method. An action used by the *Hypertext Transfer Protocol (HTTP)*. HTTP methods include GET, POST, and PUT.

Hypertext Markup Language (HTML). A markup language that conforms to the SGML standard and was designed primarily to support the online display of textual and graphical information that includes hypertext links.

Hz. See *Hertz*.

I

I frame (information frame). In video compression a frame that has been compressed independently of any other frames. Also referred to as a reference frame, intra frame, or still frame.

i-node. In the AIX operating system, the internal structure that describes the individual files in the operating system; there is one i-node for each file. An i-node contains the node, type, owner, and location of a file. A table of i-nodes is stored near the beginning of a *file system*.

interactive video. Combining video and computer technology so the user's actions determine the sequence and direction the application takes.

Internet. The worldwide collection of interconnected networks that use the Internet suite of *protocols* and permit public access.

Internet Protocol (IP). In the *Internet* suite of *protocols*, a connectionless protocol that routes data through a network or interconnected networks and acts as an intermediary between the higher protocol layers and the physical network.

intranet. A private network that integrates *Internet* standards and applications (such as Web browsers) with an organization's existing computer networking infrastructure.

IP. See *Internet Protocol*.

IP address. The unique 32-bit address that specifies the actual location of each device or workstation on the *Internet*. The address field contains two parts: the first part is the network address; the second part is the host number. For example, 9.67.97.103 is an IP address.

IP multicast. Transmission of an *Internet Protocol (IP)* datagram to a set of systems that form a single multicast group. See *multicast*.

ISO-9660. Format used for files on CD-ROM. Used with DOS.

isochronous. A communications capability that delivers a signal at a specified, bounded rate, which is desirable for continuous data such as voice and full-motion video.

J

Joint Photographic Experts Group (JPEG). (1) A group that worked to establish the standard for the compression of digitized continuous-tone images. (2) The standard for still pictures developed by this group.

JPEG. See *Joint Photographic Experts Group*.

K

Kb. See *Kilobit*.

KB. See *Kilobyte*.

Kbps. *Kilobits* per second.

kilobit (Kb). (1) For processor storage, real and virtual storage, and channel volume, 210 or 1024 bits. (2) For disk storage capacity and communications volume, 1000 bits.

kilobyte (KB). (1) For processor storage, real and virtual storage, and channel volume, 210 or 1024 bytes. (2) For disk storage capacity and communications volume, 1000 bytes.

L

LAN. See *local area network*.

latency. The time interval between the instant at which an instruction control unit initiates a call for data and the instant at which the actual transfer of the data starts.

LBR. See *low bit rate*.

local area network (LAN). A network in which a set of devices are connected to one another for communication and that can be connected to a larger network.

low bit rate (LBR). A generic term for an interleaved H.263/G.723 stream. Low bit rate streams range from 6.4 Kbps up to 384 Kbps.

M

Management Information Base (MIB). A collection of objects that can be accessed by means of a network management *protocol*.

maximum transmission unit (MTU). In *LANs*, the largest possible unit of data that can be sent on a given physical medium in a single frame. For example, the MTU for *Ethernet* is 1500 bytes.

Mb. See *megabit*.

MB. See *megabyte*.

Mbps. *Megabits* per second.

MCA. See *Micro Channel architecture*.

megabit (Mb). (1) For processor storage, real and virtual storage, and channel volume, 220 or 1 048 576 bits. (2) For disk storage capacity and communications volume, 1 000 000 bits.

megabyte (MB). (1) For processor storage, real and virtual storage, and channel volume, 220 or 1 048 576 bytes. (2) For disk storage capacity and communications volume, 1 000 000 bytes.

method. In Java design or programming, the software that implements the behavior specified by an operation. Synonymous with member function in C++.

MIB. See *Management Information Base*.

MIB variable. A managed object that is defined in the *Management Information Base (MIB)*. The managed object is defined by a textual name and a corresponding object identifier, a syntax, an access mode, a status, and a description of the semantics of the managed object. The MIB Variable contains pertinent management information that is accessible as defined by the access mode.

Micro Channel Architecture (MCA). The rules that define how subsystems and adapters use the Micro Channel *bus* in a computer. The architecture defines the services that each subsystem can or must provide.

MIDI. See *Musical Instrument Digital Interface*.

MIME type. An Internet standard for identifying the type of object being transferred across the Internet. MIME types include several variants of audio, image, and video. Each object has a MIME type.

M-JPEG. See *Motion JPEG*.

Motion JPEG (M-JPEG) . Used for animation.

Moving Pictures Expert Group (MPEG). (1) A group that is working to establish a standard for compressing and storing motion video and animation in digital form. (2) The standard under development by this group.

MPEG. See *Moving Pictures Expert Group*.

MTU. See *maximum transmission unit*.

multicast. Transmission of the same data to a selected group of destinations.

multimedia. Combining different media elements (text, graphics, audio, still image, video, animation) for display and control from a computer.

multimedia file system. A *file system* that is optimized for the storage and delivery of video and audio.

Multipurpose Internet Mail Extensions (MIME) . See *MIME type*.

Musical Instrument Digital Interface (MIDI). A *protocol* that allows a synthesizer to send signals to another synthesizer or to a computer, or a computer to a musical instrument, or a computer to another computer.

N

name server. See *domain name server*.

National Television Standard Committee (NTSC). (1) A committee that sets the standard for color television broadcasting and video in the United States (currently in use also in Japan). (2) The standard set by the NTSC committee.

NTSC. See *National Television Standard Committee*.

P

page pool. The area in the shared memory segment from which buffers are allocated for data that is read from or written to disk. Page pool size is one of the file manager startup configuration parameters.

PAL. See *Phase Alternation Line*.

pattern-matching character. See *wildcard character*.

PCI. See *Peripheral Component Interconnect*.

peak rate. The maximum rate encountered over a given period of time.

performance group. A group of file systems sharing system resources that can affect file system performance.

Peripheral Component Interconnect (PCI). A type of *bus* architecture.

Phase Alternation Line (PAL). The television broadcast standard for European video outside of France and the countries of the former Soviet Union.

pin. Keeping the program from being paged out after it is loaded into memory.

port. A system or network access point for data entry or exit. In the *Internet* suite of *protocols*, a specific logical connector between the *Transmission Control Protocol (TCP)* or the *User Datagram Protocol (UDP)* and a higher-level protocol or application.

port group. A logical name used to group one or more ports (network devices or interfaces) of the same network type that can be used to reach a given end-user destination. For example, if multiple *ATM* adapters in the VideoCharger Server complex are connected to the same *ATM* networks, these adapters can be configured under the same port group. The controller selects ports as necessary to balance the load.

presentation formatter. A *CGI* program that defines the forms used to select and present assets to clients.

protocol. The meanings of, and the sequencing rules for, requests and responses used for managing a network, transferring data, and synchronizing the states of network components.

protocol gateway. A type of *firewall* that protects computers in a business network from access by users outside that network.

proxy server. A server that receives requests intended for another server and that acts on the client's behalf (as the client's proxy) to obtain the requested service. A proxy server is often used when the client and the server are incompatible for direct connection (for example, when the client is unable to meet the security authentication requirements of the server but should be permitted some services).

Q

quality of service (Do's). For an *asynchronous transfer mode (ATM)* virtual channel or a Networking BroadBand Services (NBBS) network connection, a set of communication characteristics such as end-to-end delay, jitter, and packet loss ratio.

R

RAID. See *Redundant Array of Independent Disks*.

README file. A file that should be viewed before the program associated with it is installed or run. A README file typically contains last-minute product information, installation information, or tips for using the product.

real time. The processing of information that returns a result so rapidly that the interaction appears to be instantaneous.

Real-Time Transport Protocol (RTP). A *protocol* that provides end-to-end network transport functions suitable for applications transmitting real-time data, such as audio, video or simulation data, over *multicast* or *unicast* network services.

rebalance. Restriping and redistributing data across the available hard disks after a disk or disks have been removed from a *file system*.

Redundant Array of Independent Disks (RAID). A collection of two or more disk drives that present the image of a single disk drive to the system. In the event of a single device failure, the data can be read or regenerated from the other disk drives in the array.

remote procedure call (RPC). (1) A facility that a *client* uses to request the execution of a procedure call from a server. This facility includes a library of procedures and an external data representation. (2) A client request to a service provider located in another node.

request. The part of a Web address that follows the *protocol* and server *host name*. For example, in the *address* `http://www.server.com/rfoul/sched.htm`, the request is `/rfoul/sched.html`.

ReSerVation Protocol (RSVP). A resource reservation setup *protocol* designed for an integrated services *Internet*. The protocol provides receiver-initiated setup of resource reservations for *multicast* and *unicast* data flows.

Resource Interchange File Format (RIFF). Used for storing sound or graphics for playback on different types of computer equipment.

restriping. Redistributing and rebalancing data across all available and defined disks in a *multimedia file system*. This is typically done when a disk is removed from a file system for repair or when a new disk is added to a *file system*.

RIFF. See *Resource Interchange File Format*.

RLE. See *Run-Length Encoding*.

RPC. See *remote procedure call*.

RSVP. See *ReSerVation Protocol*.

RTP. See *Real-Time Transport Protocol*.

Run-Length Encoding (RLE). A type of *compression* that is based on strings of repeated, adjacent characters or symbols, which are called "runs."

S

SCSI. See *small computer system interface*.

server. A functional unit that provides services to one or more clients over a network. Examples include a file server, a print server, and a mail server.

Simple Network Management Protocol (SNMP). In the *Internet* suite of *protocols*, a network management protocol that is used to monitor routers and attached networks. SNMP is an application layer protocol. Information on devices managed is defined and stored in the application's *Management Information Base (MIB)*.

small computer system interface (SCSI). A standard hardware interface that enables a variety of peripheral devices to communicate with one another.

SMIT. See *System Management Interface Tool*.

SNMP. See *Simple Network Management Protocol*.

sticky pool. The part of the *page pool* that is made available to cache the first block of frequently used interactive files. Sticky pool size is one of the file manager startup configuration parameters.

streamed data. Any data sent over a network connection at a specified rate. A stream can be one data type or a combination of types. Data rates, which are expressed in bits per second, vary for different types of streams and networks.

stripe group. A collection of disks that are grouped together for serving media streams. The *multimedia file system* uses stripe groups to optimize delivery of multimedia *assets*.

stripe width. The size of the block that data is split into for *striping*.

striping. Splitting data to be written into equal blocks and writing blocks simultaneously to separate disk drives. Striping maximizes performance to the disks. Reading the data back is also scheduled in parallel, with a block being read concurrently from each disk then reassembled at the host.

System Management Interface Tool (SMIT). An interface tool of the AIX operating system for installing, maintaining, configuring, and diagnosing tasks.

T

Tagged Image File Format (TIFF). A file format for storing high-quality graphics.

TCP. See *Transmission Control Protocol*.

TCP/IP. See *Transmission Control Protocol/Internet Protocol*.

throughput. A measure of the amount of information transmitted over a network in a given period of time. For example, a network's data transfer rate is usually measured in bits per second. Throughput is a measure of performance. It is also measured in *Kbps* or *Mbps*.

TIFF. See *Tagged Image File Format*.

token ring. According to IEEE 802.5, network technology that controls media access by passing a token (special packet or frame) between media-attached stations.

token-ring network. A network that uses a ring topology, in which tokens are passed in a circuit from node to node. A node that is ready to send can capture the token and insert data for transmission.

topology. In communications, the physical or logical arrangement of nodes in a network, especially the relationships among nodes and the links between them.

Transmission Control Protocol (TCP). A communications *protocol* used in the *Internet* and in any network that follows the Internet Engineering Task Force (IETF) standards for internetwork protocol. TCP provides a reliable host-to-host protocol between hosts in packet-switched communications networks and in

interconnected systems of such networks. It uses the *Internet Protocol (IP)* as the underlying protocol.

Transmission Control Protocol/Internet Protocol (TCP/IP). The suite of transport and application *protocols* that run over the Internet Protocol.

U

UDP. See *User Datagram Protocol*.

uniform resource locator (URL). A sequence of characters that represent information resources on a computer or in a network such as the Internet. This sequence of characters includes the abbreviated name of the protocol used to access the information resource and the information used by the protocol to locate the information resource. For example, in the context of the Internet, these are abbreviated names of some protocols used to access various information resources: http, ftp, gopher, telnet, and news.

User Datagram Protocol (UDP). In the *Internet* suite of *protocols*, a protocol that provides unreliable, connectionless datagram service. It enables an application program on one machine or process to send a datagram to an application program on another machine or process. UDP uses the *Internet Protocol (IP)* to deliver datagrams.

V

video mixing. The process of dynamically inserting or combining multiple *video objects* into a single object for distribution. An example would be the mixing of commercials and broadcast programs for satellite distribution.

video object. The data file containing a program recorded for playback on a computer or television set.

video-on-demand (VOD). A service for providing consumers with movies and other programming almost immediately, per request.

video stream. The path data follows when read from the VideoCharger Server system to the display unit.

VOD. See *Video-on-demand*.

W

WAIS. See *Wide Area Information Service*.

WAV. A format to store digitally recorded sound.

Web server. A server that is connected to the *Internet* and is dedicated to serving Web pages.

Wide Area Information Service (WAIS). A network information system that enables clients to search documents on the World Wide Web.

wildcard character. A special character such as an asterisk (*) or a question mark (?) that can be used to represent one or more characters. Any character or set of characters can replace a wildcard character.

World Wide Web (WWW). A network of servers that contain programs and files. Many of the files contain hypertext links to other documents available through the network.

WWW. See *World Wide Web*.

X

XML. See *Extensible Markup Language*.

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