CHAPTER 2

VSMS Commands

Table 2-1 provides a summary of the Video Surveillance Media Server (VSMS) commands. Each command is described in detail in the section that is listed.

Table 2-1 VSMS Command Summary

Name and Reference	Description
Get VSMS Version, page 2-2	Gets the VSM server version
Get SDP Information for Video Stream, page 2-3	Gets SDP information for the video stream
Camera Control, page 2-5	VSMS camera control module
RTSP Stream from VSMS, page 2-13	Gets the RTSP stream from VSMS

Get VSMS Version

http://*host***/info.bwt?type=version**

Purpose

Retrieves the VSMS version.

Required Fields

host	IP address or hostname (*hostname.domain*) where VSMS is running. By default, VSMS runs on port 80 (HTTP), however, you can use an alternate port, such as port 8080. For example, to specify port 8080, use *host***:8080**.
type=version	Version type. The **version** keyword specifies the version command type. The **version** keyword is a reserved value.

Return Values

A standard HTTP/1.x header followed by:

```
Content-Type: text/plain
Return Code: <[Server version] or -1 or output>
    [Server version] Successful completion of the URL command
    -1 Error in execution of the URL command
```

Examples

The following example retrieves the VSMS version (for example, 5.1):

```
http://vsms.cisco.com/info.bwt?type=version
```

Get SDP Information for Video Stream

http://*host***/info.bwt?type=sdp&name=***proxyName*

Purpose

Retrieves the Session Description Protocol (SDP) information from a video stream.

Required Fields

host	IP address or hostname (*hostname.domain*) where VSMS is running. By default, VSMS runs on port 80 (HTTP), however, you can use an alternate port, such as port 8080. For example, to specify port 8080, use *host***:8080**.
type=sdp	SDP type. The **sdp** keyword specifies the SDP command type. The **sdp** keyword is a reserved value.
name=*proxyName*	Proxy name where *proxyName* specifies the name of the proxy or archive. The valid value for *proxyName* is an alphanumeric string containing 1 to 256 of the following characters: • Digits (0 to 9) • Upper case letters (A to Z) • Lower case letters (a to z) • Underscore (_) • Hyphen (-) The reserved *proxyName* value is -1. **Note** Each proxy must have a unique name on a given VSMS host.

Return Values

A standard HTTP/1.x header followed by:

```
Content-Type: application/sdp
    v=0
    o=- 15011761763204733780 15011761763204733810 IN IP4 10.10.40.120
    s=Cisco Live Media Streaming Session
    e=NONE
    c=IN IP4 0.0.0.0
    b=AS:15000
    t=0 0
    a=control:*
    a=range:npt=now-
    m=video 0 RTP/AVP 97
    b=AS:15000
    a=rtpmap:97 H264/90000
    a=fmtp:97
    profile-level-id=4d4028;packetization-mode=0;sprop-parameter-sets=J01AKI2NKA8ARP9gIA==
    ,KO48gA==;width=1920;height=1088;4CIF=1
    a=x-codec:h264.cisco_hd
    a=framerate:5.00
    a=range:npt=now-
    a=control:rtsp://10.194.66.120/live/cisco_hd

    HTTP 400 Bad Request
```

Examples

Retrieving SDP Information from a Proxy

The following command retrieves the SDP information for a proxy named ABC:

```
http://vsms.cisco.com/command.bwt?type=sdp&name=ABC
```

Retrieving SDP information from an Archive

The following command retrieves the SDP information for an archive named BCD:

```
http://vsms.cisco.com/command.bwt?type=sdp&name=BCD
```

Camera Control

http://*host***/camera.bwt?source=***id@host***&srctype=***device***&model=***cameraModel***&protocol=D**
&comport=*portNum***&number=***chainNum***&priority=***priorityNum*
&command=*cmdLetterOperand***&button=***macroName***&speed=***speedNum***&ms=***msTime*

Purpose

Configures camera features (such as enabling or disabling backlight compensation or digital zoom) and controls camera functions (such as PTZ movement, iris control, and focus) through the network without having to know the low-level control protocols for specific cameras.

Required Fields

host	IP address or hostname (*hostname.domain*) where VSMS is running. By default, VSMS runs on port 80 (HTTP), however, you can use an alternate port, such as port 8080. For example, to specify port 8080, use *host***:8080**.
source=*id@host*	Video source where *id@host* specifies the channel number and IP address of a video source where the *id* value can be one of the following: • Video input number of the IP camera or encoder. Valid values are 1 to 64. • Video input number and feed number (separated by an underscore) of the IP camera or encoder. This option applies only to video sources that support dual streaming. Valid input number values are 1 to 64. Valid feed number values are 1 and 2. • Name of the parent proxy. This option applies only to parent-child proxy configurations. The valid value is an alphanumeric string containing 1 to 256 of the following characters: – Digits (0 to 9) – Upper case letters (A to Z) – Lower case letters (a to z) – Underscore (_) – Hyphen (-) The reserved value is -1. For example: – 10.10.10.1 – 1@10.10.10.1 – 1_1@10.10.10.1. The *host* value is the IP address or hostname (*hostname.domain*) for the video source. You can optionally specify a port number with the IP address or hostname. For example, to specify port 8080, use *host***:8080**. If no port number is specified, port 80 is used by default. **Note** For child proxies, the parent proxy name becomes the source.

srctype=*device*	Source type where *device* specifies the device to use as the media source for the proxy, such as a parent proxy, an encoder, or an IP camera. If the source is a parent proxy, the *device* value is **proxy**. For all other devices (encoders and IP cameras), the valid *device* values are listed in the Keyword column of Table B-1 in Appendix B, "Supported Media Devices." The type of encoder or IP camera, which the module uses to select the appropriate device driver.
model=*modelNum*	The type of encoder or IP camera, which the module uses to select the appropriate device driver.
protocol=D	The particular variant of the camera control protocol for VSMS to employ. Only Pelco-D is supported. D is a reserved value.
comport=*portNum*	The encoder's serial port to which the camera is connected. This is required for analog cameras unless a proxy is provided. COM1 and COM2 are reserved values.
number=*chainNum*	The chain number for the camera. Valid values are 0 to 64.
priority=*priorityNum*	Assigns a priority for the current command. Each time a command is sent, the priority of the command is compared to the priority of the previous command. If the priority is lower than that of the previous command, it is rejected until a sufficient duration of time has passed since the previous command was executed. The default exclusive access is five minutes. This value can be modified in the PTZ Configuration section of the management console. The range of valid values is 1 to 100.

Operational Fields

command=*cmdLetterOperand*	Operational command. Defines a command to perform a camera control operation, such moving the camera, adjusting the camera focus, opening or closing the camera iris, and using camera position presets. An operational command is specified as a name-value pair using the following format: **command=***cmdLetterOperand* where: • The name is **command**. • The value is *cmdLetterOperand,* which represents a single letter identifying the command to be executed and the operand for that command. For example, **command=F9** specifies a command to shift the camera focus farther away by a distance of 9. **Note** Only one operational command or operational button should be specified in a camera control API command. That is, you should not use multiple operational commands, multiple operational buttons, or a mixture of operational commands and buttons in the same camera control API command. The operational command values are described in Table 2-2 through Table 2-6.
button=*macroName*	Operational Button. Specifies the name of a macro defined for a camera that performs a camera control operation, such as moving the camera, adjusting the camera focus, and opening or closing the camera iris. An operational button is specified as a name-value pair using the following format: **button=***macroName* where: • The name is **button**. • The value is *macroName*, which represents the name of the macro that is to perform a camera control operation. For example, **button=dzoom_on** specifies a macro that enables digital zoom. **Note** Only one operational command or operational button should be specified in a camera control API command. That is, you should not use multiple operational commands, multiple operational buttons, or a mixture of operational commands and buttons in the same camera control API command. The operational button values are described in Table 2-2 through Table 2-5.

speed=*speedNum*	(Optional) Sets the pan and tilt speed for momentary PTZ movement commands. The range of valid values is 1 to 100, with 1 being the slowest speed and 100 being the fastest speed.
ms=*msTime*	(Optional) Transforms a continuous PTZ movement operational command to a momentary one. After a continuous PTZ movement operational command (**command=***_pSpeed,tSpeed,zSpeed*) is sent, the server waits the time specified by the *msTime* value and then automatically issues a stop movement command to the camera. The range of valid values is 20 to 20000000 milliseconds.

Table 2-2 Configuration Values

Value	Type	Description
*	Command	Passes through a low-level, camera-specific command. All camera drivers support the pass through feature, but the interpretation of the operational command depends on the driver. For example, the following command passes through the low-level command that disables backlight compensation for PTZ cameras using the PelcoD protocol: **command=*00310001** Using the pass through feature is a way to use camera features that are not currently supported by VSM. To display the syntax for a particular model, find the appropriate entry in the camera PTZ XML file.
backlight_off	Button	Disables backlight compensation.
backlight_on	Button	Enables backlight compensation.
dzoom_off	Button	Disables digital zoom.
dzoom_on	Button	Enables digital zoom.
focus_auto	Button	Enables auto focus.
focus_manual	Button	Enables manual focus.
init	Button	Initializes the default PTZ control settings.
iris_auto	Button	Enables auto iris.
iris_manual	Button	Enables manual iris.
night_auto	Button	Enables auto night mode.
night_off	Button	Disables night mode.
night_on	Button	Enables night mode.
reset	Button	Resets the PTZ control settings.
wb_auto	Button	Enables auto white balance.
wb_indoor	Button	Enables indoor white balance.
wb_outdoor	Button	Enables Outdoor white balance.
wb_manual	Button	Enables Manual white balance.

Table 2-3 Focus Values

Value	Type	Description
F*dist*	Command	Shifts the camera focus farther away specified by the *dist* value. The range of valid *dist* values is 0 to 9, where 0 is a short distance and 9 is a long distance.
R*dist*	Command	Shifts the camera focus nearer specified by the *dist* value. The range of valid *dist* values is 0 to 9, where 0 is a short distance and 9 is a long distance.
far	Button	Focus farther away.
near	Button	Focus nearer.

Table 2-4 Iris Values

Value	Type	Description
D*closeNum*	Command	Closes (dims) the camera iris specified by the *closeNum* value. The range of valid *closeNum* values is 0 to 9, where 0 is a small amount and 9 is a large amount.
E*openNum*	Command	Opens (brightens) the camera iris specified by the *openNum* value. The range of valid *openNum* values is 0 to 9, where 0 is a small amount and 9 is a large amount.
bright	Button	Opens (brightens) the camera iris.
dim	Button	Closes (dims) the camera iris.

Table 2-5 PTZ Values

Value	Type	Description
B*dist*	Command	Moves the camera down and left the relative distance specified by the *dist* value. The range of valid *dist* values is 1 to 360, where 1 is a short distance and 360 is a long distance.
H*dist*	Command	Pans the camera left the relative distance specified by the *dist* value. The range of valid *dist* values is 1 to 360, where 1 is a short distance and 360 is a long distance.
J*dist*	Command	Tilts the camera down the relative distance specified by the *dist* value. The range of valid *dist* values is 1 to 360, where 1 is a short distance and 360 is a long distance.
K*dist*	Command	Tilts the camera up the relative distance specified by the *dist* value. The range of valid *dist* values is 1 to 360, where 1 is a short distance and 360 is a long distance.
L*dist*	Command	Pans the camera right the relative distance specified by the *dist* value. The range of valid *dist* values is 1 to 360, where 1 is a short distance and 360 is a long distance.
N*dist*	Command	Moves the camera down and right the relative distance specified by the *dist* value. The range of valid *dist* values is 1 to 360, where 1 is a short distance and 360 is a long distance.

Table 2-5 PTZ Values

Value	Type	Description
U*dist*	Command	Moves the camera up and right the relative distance specified by the *dist* value. The range of valid *dist* values is 1 to 360, where 1 is a short distance and 360 is a long distance.
W*dist*	Command	Zooms the camera out the relative distance specified by the *dist* value. The range of valid *dist* values is 1 to 360, where 1 is a short distance and 360 is a long distance.
Y*dist*	Command	Moves the camera up and left the relative distance specified by the *dist* value. The range of valid *dist* values is 1 to 360, where 1 is a short distance and 360 is a long distance.
Z*dist*	Command	Zooms the camera in the relative distance specified by the *dist* value. The range of valid *dist* values is 1 to 360, where 1 is a short distance and 360 is a long distance.
_pSpeed,tSpeed,zSpeed	Command	Starts continuous PTZ movement. The camera will continue to move at the speeds specified by the *pSpeed*, *tSpeed*, and *zSpeed* values until a subsequent command is issued (unless an **ms=***msTime* parameter is supplied with this operational command). The range of valid speed values is -100 to 100, where: • For the *pSpeed* value, negative values indicate pan left, and positive values indicate pan right. • For *tSpeed* value, negative values indicate tilt down, and positive values indicate tilt up. • For *zSpeed* value, negative values indicate zoom out, and positive values indicate zoom in. • For all three values, -100 and 100 indicate the fastest movement, and 0 indicates a stop (no movement). For example, **command=_0,0,0** stops all camera PTZ movement.
down	Button	Tilts the camera down.
downleft	Button	Moves the camera down and left.
downright	Button	Moves the camera down and right.
left	Button	Pans the camera left.
right	Button	Pans the camera right.
stop	Button	Stops all PTZ movement.
tele	Button	Zooms the camera in.
up	Button	Tilts the camera the camera up.
upleft	Button	Moves the camera the camera up and left.
upright	Button	Moves the camera up and right.
wide	Button	Zooms the camera out.

Table 2-6 Presets Values

Value	Type	Description
G*presetNum*	Command	Moves the camera to the preset position specified by the *presetNum* value. Preset numbering starts at 1. Most cameras support at least 10 presets.
S*presetNum*,*label*	Command	Assigns a preset number and text label to the current camera position, as specified by the *presetNum* and *label* values. Preset numbering starts at 1. Most cameras support at least 10 presets.

Examples

Starting Continuous PTZ Movement

The following example starts a continuous PTZ movement, with pan moving left at a speed of 75, tilt moving up at a speed of 50, and zoom moving in at a speed of 25:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&command=_-75,50,25
```

Stopping Continuous PTZ Movement

The following example stops continuous PTZ movement:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&command=_0,0,0
```

Stopping Continuous PTZ Movement After a Specific Amount of Time

The following example stops continuous PTZ movement after 1,250 milliseconds (1.25 seconds):

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&command=_-75,50,25
&ms=1250
```

Passing Through a Low-Level Camera-Specific Command

The following example passes through the low-level command that switches to manual iris control for a PTZ camera using the PelcoD protocol:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&command=*002D0002
```

Momentary Pan

The following example uses an operational command to perform a momentary pan left for a relative distance of 100:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&command=H100
```

The following example uses an operational command to perform a momentary pan left for a relative distance of 100 at a speed of 80:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&command=H100&speed=80
```

The following example uses an operational button to perform a momentary pan right:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&button=right
```

Momentary Tilt

The following example uses an operational command to perform a momentary tilt up for a relative distance of 125:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&command=K125
```

The following example uses an operational command to perform a momentary tilt up for a relative distance of 125 at a speed of 75:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&command=K125&speed=75
```

The following example uses an operational button to perform a momentary tilt down:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&button=down
```

Momentary Zoom

The following example uses an operational command to perform a momentary zoom out for a relative distance of 35:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&command=W35
```

The following example uses an operational command to perform a momentary zoom out for a relative distance of 35 at a speed of 50:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&command=W35&speed=50
```

The following example uses an operational button to perform a momentary zoom in:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&button=tele
```

Assigning a Preset

The following example assigns the current PTZ position to preset 1 and labels the preset as Front_Door:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&command=S1,Front_Door
```

Going to a Preset

The following example moves the camera to PTZ position preset 5:

```
http://vsms.cisco.com/camera.bwt?source=1@192.168.1.109&srctype=sony_snc_rz30
&model=sony_snc_rz30&protocol=D&comport=COM1&number=0&priority=100&command=G5
```

RTSP Stream from VSMS

rtsp://*host***/live/***proxyName*

rtsp://*host***/archive/***archiveName*

Purpose

Retrieves a Real Time Streaming Protocol (RTSP) stream from a proxy or archive for a third party video player.

Required Fields

host	IP address or hostname (*hostname.domain*) where VSMS is running. By default, VSMS runs on port 80 (HTTP), however, you can use an alternate port, such as port 8080. For example, to specify port 8080, use *host***:8080**.
live/*proxyName*	The name of the proxy. The valid *proxyName* value is an alphanumeric string containing 1 to 256 of the following characters: – Digits (0 to 9) – Upper case letters (A to Z) – Lower case letters (a to z) – Underscore (_) – Hyphen (-) The reserved value is -1.
archive/*archiveName*	The name of the archive. The valid *archiveName* value is an alphanumeric string containing 1 to 256 of the following characters: – Digits (0 to 9) – Upper case letters (A to Z) – Lower case letters (a to z) – Underscore (_) – Hyphen (-) The reserved value is -1.

Examples

Retrieving an RTSP Stream from a Proxy

The following command retrieves an RTSP stream from proxy ABC for a 3rd party video player (such as VLC Player):

```
rtsp://vsms.cisco.com/live/ABC
```

Retrieving an RTSP Stream from an Archive

The following command retrieves an RTSP stream from archive BCD for a 3rd party video player (such as VLC Player):

```
rtsp://vsms.cisco.com/archive/BCD
```