CDDM Management Utility

This appendix describes the management utility for Cisco Videoscape Distribution Suite-TV (VDS-TV) Content Delivery Devices.

Utility Name

cddm - Content Delivery Device Management

Synopsis

cddm [*options*]

cddm [*devnum*]

cddm [*options*] [*devnum*]

Description

cddm is a management utility for CDS-TV's Content Delivery Devices (CDD). It's used to report a variety of device information and manage device configuration and events such as device failure and device replacement.

For options that require a device number, *devnum* can be set to any one value 1..**n** where **n** is equal to the number of storage devices. *devnum* may define a set of device numbers, for example,'**1,3,5,7**'. It may indicate a range of device numbers, for example,'**13-24**' (the second device number in the range must be greater than the first device number) and it may define sets of ranges, for example,'**1-8,16-24**' *devnum* may also be the word '**all**' to indicate that *options* is to be applied to all devices. Note that only some options support multiple devices. Options that support multiple devices are indicated by an asterisk following the *devnum* in the option prototype.

Option **--show= state** is the default option when *options* is not defined.

Options

-a *<attribute>*, **--attrib**=<attribute><*devnum*>*

Report the value of the specified attribute. If *devnum* is provided then *attribute* must be an attribute of the device. If *devnum* is not provided then *attribute* is considered a global attribute. For example **cddm --attributive 1**' will return the name of the device vendor of device 1 and **cddm --attrib=max_error_rate**' will report the global value for the maximum error rate health threshold applicable to all devices. See the *--show* option for sets of available attributes.

-C *<on/off>*,**--slot_check**=*<on/off>*

This option is used to check the proper connection of device cables and the working order of device lights. It will cause the identify light (red LED) of the devices to illuminate in a Johnson Counter fashion; starting with the first slot and progressing to the last slot in ˜1/2 second steps. After all lights are on then all lights will be turned off in the same order. This behavior will repeat until this option is turned off.

-F, **--no-format**

This option is used to remove the default output formatting performed by other options. Only options subsequent to this option on the command line are effected.

-I, --interrogate *devnum*

Creates a report of events for the specified device. The source of the report may come from a variety of sources that will be identified in the report.

-i [*on/off***], --identification]** *devnum*

Turns on or off the specified device's identifying indicator. For *identify*, if *on* or *off* is not specified then this option will toggle the state. The identification is typically a slow blinking red light (˜1 seconds period) found at the front of the slot associated with the device. The identifying indicator will remain on until it is turned off or the device fails at which time the indicator will be lit solidly.

-r *devnum*, **--remove** *devnum*

Logically removes the specified device prior to the device being *physically* removed from the chassis A logically removed device will be dismounted from the file system and either spun-down or placed on standby (HDD or SSD, respectively).

When the device has completed the logical remove process, a notification will be posted on the console indicating that the device can be pulled. A logically-removed device's red identifying indicator will be displaying a fast blink (˜1/2 second period or faster).

It is always best to logically remove a device before pulling it from the chassis. A failed device does not need to be logically removed.

Note   A logically removed device cannot be place back online until it has been removed from the chassis. **All contents of a logically removed device will be deleted** when it is reinserted into the chassis.

-s *value*, **--show**=*<set,set,...> <devnum>*

This is used to show selected sets of global or device information.

Note   Sets that require a devnum cannot be mixed with sets that do not require a devnum

The collection of some device information has a negative impact on device performance, therefore, this impactive information is cached and automatically updated periodically usually when the device is idle. *set* selects one of the different categories of information defined as follows:

all *devnum*

Show all available device information.

dev_spec

Show device type specific information. This will report various points of information specific to the device technology and is a function of vendor implementation.

errors *devnum*

Shows all error counters.

health *devnum*

Shows information relative to a device's health

phys *devnum*

Show physical information about the device; make, model, vendor, capacity, serial number, etc.

raw

This sub option will cause some information sets to be reported in raw data format. For example, this option will cause the SATA S.M.A.R.T. attributes reported in the *dev_spec* set to be reported as it's collected from the device as opposed to interpreting it.

smart *devnum*

Shows available Self-Monitoring, Analysis and Reporting Technology values. These values are technology specific (SCSI, ATA) and implementation is varied from vendor to vendor.

state *devnum*

Show device state information only.

stats *devnum*

Show device statistical information

update

This sub option is not an information set, but instead, will force a refresh of the device information cache possibly momentarily impacting device performance.

globals

Show global settings used to monitor devices

location *devnum*

Show the location of a given device within a chassis

-V --versions

Reports the version of cddm and CDD drivers information.

-v, --version

Reports the version of cddm.

--VIOLATE_POLICY

This option is used to disable policy enforced by cddm. It is not recommended that this option be utilized except in extraneous cases. This option must precede other options on the command line for which policy is to violated.

-X, --unsuspend *devnum*

This option will unsuspend a not-yet-pulled suspended device. (See the *suspend* option.)

-x [*minutes***], --suspend[=***minutes***]** *devnum*

The **suspend** option prepares a healthy device to be safely removed from the chassis and allowing it to be reinserted later without incurring data loss.

The CDE470 platform has two devices in each tray. When one device in a tray has failed the other device in the tray will need to be suspended before the tray is pulled from the chassis.

The volume on the suspended device is not dismounted from the file system but placed in a quiescent state. The file system will not attempt to access the volume during the suspend period. While

a device is suspended, necessary data residing on the device will be reconstructed from data on other devices.

A device cannot remain suspended indefinitely due to a potential performance impact to the system. The default amount of time that a device may remain suspended is 20 minutes. A suspended and removed device that is reinserted before the suspend period expires will automatically and immediately be placed online and its volume returned to full operation.

If the suspend period expires before the device is reinserted then the device will be considered lost and its volume will be abandoned by the file system. A suspended device reinserted after the suspend period expires will be considered a new device and its current contents will be discarded. If, by happenstance, a suspended and removed device is replaced with another device then the suspended volume will be discarded by the file system and the replacement device will be considered new and its current contents discarded.

If a suspended device is not pulled from the chassis then it will return to online and normal operation when the suspend period expires. A suspended but not yet removed device can be unsuspended with the *unsuspend* option.

The *minutes* parameter may be provided to override the default suspend period. The *suspend* option with the *minute* parameter may be used on a device already suspended to modify the cur- rent suspend period.

Note   To preserve data resilience, cddm will enforce a policy of only one device suspended at a time.This option is valid for the CDE470 platform only.

Return Codes

cddm will return 0 if the command is successful and non-zero if unsuccessful. A negative return value indicates a system failure. A positive is an error generated within *cddm* and defines as follows:

- 101 Invalid device
- 102 Invalid option
- 103 Invalid value
- 104 CDD drivers are not loaded
- 105 Incompatible drivers
- 106 Device not found
- 107 Policy violation
- 108 Unsupported option

- 109 System error

Examples

cddm --show=all,dev_spec,smart 3

Produces the following output and indicates all available attributes:

```
alleged_media_errors              0
bytes_read                        110080
bytes_written                     4775341056
connection                        21.2
device_type                       SAS HDD
dev_link_rate                     6000
dev_max_operating_temp            69
dev_max_operational_starts        0
dev_mfg_wk
dev_mfg_yr
dev_temp                          23
direct_submits                    20766
dubious_LBAs                      0
errors                            0
errors_reported                   0
errors_reported_rate              0
errors_to_reset                   0
eval_wait_time                    0 ms
hard_resets                       0
location                          1.3.1.0
max_transfersize                  262144
media_error_rate                  0
media_errors                      0
model                             WD4001FYYG-01SL3
name                              csd3
print_flags                       0x0
proc_flags                        0x20
reqs_free                         20
reqs_in_cb_queue                  0
reqs_in_progress                  0
reqs_lost                         0
reqs_queued                       0
requests                          468662
reset_rate                        0
resets                            0
retries                           0
rev                               VR07
sector_size                       512
serial                            WMC1F1989829
sick_cnt                          0
slot                              3
smart_age                         00.09.45
smart_glist_count                 0
smart_nonmedium_errors            3466
smart_rd_corrected_errors_long    1
smart_rd_corrected_errors_short   114490
smart_rd_correction_algorithm_use 1
smart_rd_retries                  1
smart_rd_total_bytes_processed    47071765710848
smart_rd_total_corrected_errors   114491
smart_rd_uncorrected_errors       0
smart_startups                    0
```

```
smart_status                      OK
smart_wr_corrected_errors_long    124
smart_wr_corrected_errors_short   59641
smart_wr_correction_algorithm_use 124
smart_wr_retries                  124
smart_wr_total_bytes_processed    10133345524736
smart_wr_total_corrected_errors   59765
smart_wr_uncorrected_errors       0
state                             0x800007; DEV_ALLOCATED DEV_ATTACHED DEV_READY
timeout_comp_err                  0
timeout_comp_max                  0 ms
timeout_comp_min                  0 ms
timeout_comp_ok                   0
timeout_rate                      0
timeouts                          0
total_sectors                     7814037167
vendor                            WD
smart_age                         00.09.45
smart_glist_count                 0
smart_nonmedium_errors            3466
smart_rd_corrected_errors_long    1
smart_rd_corrected_errors_short   114490
smart_rd_correction_algorithm_use 1
smart_rd_retries                  1
smart_rd_total_bytes_processed    47071765710848
smart_rd_total_corrected_errors   114491
smart_rd_uncorrected_errors       0
smart_startups                    0
smart_status                      OK
smart_wr_corrected_errors_long    124
smart_wr_corrected_errors_short   59641
smart_wr_correction_algorithm_use 124
smart_wr_retries                  124
smart_wr_total_bytes_processed    10133345524736
smart_wr_total_corrected_errors   59765
smart_wr_uncorrected_errors       0
dev_link_rate              6000
dev_max_operating_temp     69
dev_max_operational_starts 0
dev_mfg_wk
dev_mfg_yr
dev_temp                   23
```

cddm --attrib=bytes_written 1

Will report the value of the number of byte written to the device since last system start, for example:

85269151744

cddm --supend=30 8

cddm --remove 17

cddm --identify=on 42

cddm --slot_check=on