Digital Content Manager Version 9.0.0 Release Note

Overview

Introduction

This document describes Digital Content Manager (DCM) software release V09.0.0. It contains a detailed description of the release including a list of features, known errors, and limitations since the previous major release (V08.09.00).

New Features

The following new features are included in this release.

New Features
Hardware
A new card has been introduced which adds support for receiving up to four DVB-S/S2 satellite signals. In addition, there are also up to four CAM slots for supporting descrambling of the received services. These CAM slots can also be used to descramble services coming from other cards, e.g., ASI, GbE.
A new version of the ASI SFN MKII board is available. The new version keeps generating a a valid clock reference if something goes wrong with the GPS input signals. Therefore, it is not necessary to stop streaming the SFN TS because of bad GPS signals.
Mux
A new ETV page allows the user to choose the source of ETV Data (EISS and Baseline EBIF). This can be configured differently for the primary service, and the insertion service. Streamtype tracking for EISS and Baseline EBIF have also been added.
Deterministic multiplexing feature has been added. The main purpose of the feature is to save satellite bandwidth when using SFN networks and DTF functionality.
IP Gateway
SNMP support for a subset of the IPGW functionality is added. Routing in IP-mode, configuration of SDI/RTP/ASI-ports and the Jpeg2k parameters are supported as well as genlock for the board. Only configuration of unicast streams is supported.

New Features
General
D9036 Statmux: Statmux controller functionality for D9036 encoders is added to the GbE I/O cards. Each GbE card can statmux up to 24 VSEs and supports a maximum of four pools.
The DCM software upgrade package does not contain the DCM D9900 and D9901 system guides and the IDL (external software interface) documents anymore. These documents can now be accessed via the user interface.
Digital Overlay
The stopping behavior of text banners upon timeout has changed. The default behavior is to stop directly upon timeout. The second option is to stop the banner after the current loop has finished.

Enhancements

IP Gateway

FEC error generator doesn't need to be disabled when deleting a stream (ID. CSCtl85878)

This error was found in V08.07.0.

Symptom in previous releases:
The FEC statistics counter "Fixed packets" is counting on the decoder on a given stream, while the FEC error generator on the encoder for the associated stream seems to be disabled.

Conditions:
If the FEC error generator has been enabled for stream A, and this stream is deleted, the FEC error generator does not stop.

A later created stream B with FEC enabled can then be affected if it is created on the same hardware resource as A occupied.

Workaround for previous releases:
Disable the FEC generator before deleting the stream with which it is associated.

If a stream that had the FEC error generator associated with it was deleted, then enable the FEC error generator for an existing stream on the encoder, and then disable it again.

Firmware

ASI bitrate limit support added on ASI SFN board (ID. CSCtq51265)

This error was found in all versions.

Symptom in previous releases:
Bandwidth limiting is not working on ASI SFN boards.

Conditions:
All software version prior to V09.0.0 supporting ASI SFN boards.

Workaround for previous releases:
Upgrade to V09.0.0.

The functionality was not present on the card, but the GUI was allowed to configure it.

The functionality has been merged into the SFN boards in release V09.0.0.

Corrected Errors

IP Gateway

Source IP on backup port not correct when port mirroring (ID. CSCtn99052)

This error was found in V08.07.0.

Symptom:
The MAC and IP addresses don't match the port on GbE-B when port mirroring is enabled, causing issues in configurations where multicast streams are used. This is the case when using hitless merge in port pair mode with port mirroring enabled.

Conditions:
Port mirroring is enabled.

Workaround for previous versions:
Use individual port mode instead.

Draining of de-jitter buffer by changing JPEG2K video bitrates (ID. CSCto55167)

This error was found in V08.09.0.

Symptom:
On a decoded JPEG2K stream, the dejitter buffer can be very much different from the configured value, and take a long time to convert to that value.

Conditions:
This can happen when the bit rate on the encoder is changed.

Workaround for previous versions:
When changing the bit rate on the encoder for a JPEG2K stream, pause the stream and activate it again. This will reset the dejitter buffer.

JPEG2K Decoder: HD Audio Clock Phase Increment values not set correctly (ID. CSCtr09397)

This error was found in V08.09.0.

Symptom:
Audio sample rate attribute with value "Not indicated" is handled incorrectly.

Conditions:
On a decoder, an audio input signal with the sample rate set to "Not indicated" was treated as disabled rather than having a sample rate of 48 kHz.

Workaround for previous versions:
Do not use the "No indicated" value.

IP Gateway Firmware

IP alias does not work on GbE port (ID. CSCtn02579)

This error was found in V08.07.0.

Symptom:
IP Aliasing does not work on the DCM IP Gateway in releases prior to V09.0.0.

Conditions:
Always.

Workaround for previous versions:
Upgrade to V09.0.0 or later.

Transrating/Splicing

GUI shows transrating groups of all ports on page of a specific port (ID. CSCtr06233)

This error was found in V08.09.0.

Symptom:
When reading the transrating groups for a specific port, all transrating groups on all ports of the board are returned.

Conditions:
When there are transrater groups on more than one port of an IO board, clicking on a port to see its transrating groups displays all the transrating groups on that board.

Workaround for previous versions:
None.

GPIO contact poll time to 5 msec and corrected timestamp (ID. CSCtq80929)

This error was found in all versions.

Symptom:
Enhanced frame accuracy of splicing with GPIO contacts by setting the contact poll time to 5 msec and correcting the timestamp by subtracting the debounce time.

Conditions:
None.

Workaround for previous versions:
None.

Reduced splice accurancy in manual splice between 8.3.0 and 8.9.0 (ID. CSCtr32766)

This error was found in V08.09.0.

Symptom:
During GPIO splicing, a less accurate splice from the main stream can be observed.

Conditions:
The inaccuracy typically increases with the delay of the main stream. This delay is inherent in the splicing process and is introduced when we return from insertion to the main stream.

Workaround for previous versions:
None.

Miscellaneous

Only one ECM should be requested every CP duration (notify CP extension) (ID. CSCto98840)

This error was found in V08.09.0.

Symptom:
While in CP extension, the DCM requests both current and next ECM, every CP duration.

Conditions:
Notify CP extension enabled for ECMG proxy and CP extension entered.

Workaround for previous versions:
None; however no issue should arise as the ECM at the output is updated every CP duration.

ECM group cannot be activated if initially no ECM can be retrieved (ID. CSCtq29577)

This error was found in V08.09.0.

Symptom:
ECMs for an ECM group added to the SCG are not available.

Conditions:
ECMs cannot be retrieved at SCG provision time and ECMs are provided after at least one CP duration.

Workaround for previous versions:
Remove ECM group from SCG and add ECM group to SCG again.

ECM not played out on AC change in CP extension (ID. CSCtq31648)

This error was found in V08.07.0.

Symptom:
ECM no longer played out, but service is still scrambled.

Conditions:
While in CP extension, AC is changed due to SCG reprovision and AC_delay_stop is negative and comes before delay_stop.

Workaround for previous versions:
Enable ECM generation to leave CP extension.

OutTsLoss Alarm does not always trigger Alarm metric in RIP messages (ID. CSCtq54165)

This error was found in V08.09.0.

Symptom:
A router receiving DCM RIP messages will still have the normal metric while the Output TS Loss Alarm is on.

Conditions:
Occurs during configuration if RIP is enabled for transport stream backup with anycast.

Workaround for previous versions:
For larger setups: reboot.
For smaller setups (to avoid reboot): change the source IP address of the TS while streaming.

Tuning 8VSB port triggers retune of other 8VSB ports. (ID. CSCtq54412)

This error was found in V08.01.86.

Symptom:
An 8VSB port will retune unconditionally when the tuning configuration is set, even if the tuning parameters are not modified.

Conditions:
The same tuning configuration is sent to an 8VSB port using the external IIOP interface. The issue cannot be triggered if the DCM GUI is used.

Workaround for previous versions:
When using the external IIOP interface, the new tuning configuration should only be applied if it has changed.

IOError: [Errno 28]: No space left on device (ID. CSCtq75259)

This error was found in V08.05.0.

Symptom:
Excessive logging on mainboard, especially ECMG connection loss/setup related. The web GUI might not be accessible.

Conditions:
ECMG does allow TCP connection but no channel establishment (e.g., ECMG sends stream_error or closes TCP connection on a channel_setup message).

Workaround for previous versions:
Correct connection issues on external ECMG.

Transcoding

Audio distortions after transcoding (ID. CSCtn68244)

This error was found in V08.05.0.

Symptom:
With the customer input source (MP1L2) being transcoded to HE-AAC, the output audio becomes distorted after some time; however, the lip synchronization is intact.

Conditions:
Normal Mp1L2 to HE-AAC transcoding.

Workaround for previous versions:
Disable transcoding.

DCM transcode output of 720p not H.264 Compliant (ID. CSCtr04247)

This error was found in V08.01.86.

Symptom:

After transcoding 720p60Hz input streams, there were frames missing at the output. As such, the output stream was not H.264/AVC compliant.

Conditions:

The incoming video bitstream should have a DTS-STC value of about 1000ms meaning that the decode buffer is almost completely full. These high values mean that the pictures have to stay for a long time in the decoder buffer. This buffer was too small in the transcoder for these specific streams resulting in the removal of certain pictures.

Workaround for previous versions:

No workaround available (prevent the usage of streams with a high DTS-STC value).

Mux

Loopthrough TS has no PIDs when created during co-processor reboot (ID. CSCtq23730)

This error was found in V08.09.0.

Symptom:
When a transparent loopthrough TS is created when the co-processor board is rebooting, nothing is output (no PIDs, zero bit rate).

Conditions:
The co-processor board reboots after a settings change (e.g., Coarse delay mode, delay, ...) at the moment the transparent loopthrough TS is created.

Workaround for previous versions:
Wait until the co-processor board has rebooted (after a configuration change) before creating a transparent loopthrough TS.

DCM stops streaming non transparant LT TSs after reboot (ID. CSCtq42847)

This error was found in V08.00.81.

Symptom:
Non loopthrough transport streams on a GbE port can stop streaming after a reboot.

Conditions:
If 23 or more loopthrough transport streams are present on a GbE port and also non loopthrough transport streams are present, after a reboot, the non loopthrough transport streams no longer stream.

Workaround for previous versions:
Stop streaming the loopthrough transport streams, start streaming the non loopthrough transport streams, and then start streaming the loopthrough streams again.

Wrong color of input tree icons when port is disabled (ID. CSCtq99622)

This error was found in all versions.

Symptom:
The input service icon is shown in red, but no service loss alarm is active.

Conditions:
A service loss alarm is active on an input service. When the port is disabled, the service loss alarm is cleared, but the service icon in the input tree is still shown in red.

Workaround:
Ensure the service loss alarm is cleared before disabling the port. This can be done by removing the service loss triggers on the input service when the service loss alarm is active.

TS Backup in combination with seamless alternate switching does not work (ID. CSCtq61787)

This error was found in V08.09.0.

Symptom:
Seamless Alternate service switching in combination with TS backup does not work as expected.

Conditions:
When an output service is configured for seamless alternate switching, and an alternate service is selected, and the input TS of this alternate service goes to backup, then the output service will have no video and audio.

Workaround for previous versions:
Stop and start streaming the output service.

Platform

root certificate is not updated after setting the date (ID. CSCtq17804)

This error was found in all versions.

Symptom:
The root CA certificate downloaded on the GUI page of the DCM is out of sync with the certificate in use for the current GUI https session.

Conditions:
There is a file mismatch on the device, possibly caused by power interrupt.

Workaround for previous versions:
Set the date back or forward for more than 10 years, reboot the device and restore the date and reboot once more.

GUI

Multiple edits on ASI SFN page are rejected (ID. CSCto80157)

This error was found in V08.05.0.

Symptom:
Changing SFN Mode to disabled for output TS on ASI SFN and modifying Total Bit Rate at the same time is not possible.

Conditions:
No special conditions.

Workaround for previous versions:
Change SFN Mode to disabled. Apply. Change Total Bit Rate. Apply.

Incorrect handling of non-printable ASCII characters in service name (ID. CSCtq14795)

This error was found in V08.02.75.

Symptom:
When opening the node for a transport stream in the overview page, the browser indicates a session timeout or shows a warning indicating the tree is being loaded, but does not complete this action.

Conditions:
Service name has non-printable ASCII characters in the SDT.

Workaround for previous versions:
Click Tree View menu item again and tree will show the services. Alternately, in Configuration - Display Settings page, 'JIT tree loading mode' can be set to disabled.

Source UDP port value in TS Advanced port settings incorrectly applied (ID. CSCtq20669)

This error was found in V08.02.75.

Symptom:
The UDP port value in TS Advanced settings for port is incorrectly applied for GbE cards.

Conditions:
Only one TS is available on this port or port pair.

Workaround for previous versions:
Modifying the UDP port on the advanced settings of the output TS applies the new value correctly.

PID value cannot be entered in hexadecimal when 'Adding PMT Descriptor' (ID. CSCtq44783)

This error was found in V08.05.0.

Symptom:
GUI error is reported when applying changes to Adding a PMT Descriptor table.

Conditions:
PID value is specified in hexadecimal.

Workaround for previous versions:
PID value can be specified in decimal.

[TS Input]: Backup TS as active - Click on Cancel in popup reports error (ID. CSCtq91548)

This error was found in V08.02.75.

Symptom:
Web Error is reported when the user cancels the warning message when applying a change to an output transport stream.

Conditions:
The Main and Backup transport streams are configured for this output transport stream, and the Backup transport stream has been made active.

Workaround for previous versions:
Accepting the change when the warning message is shown, works as expected.

SI view of EIT other tables on the input does not work (ID. CSCtq93876)

This error was found in V08.02.75.

Symptom:
The SI view of the EIT other tables on the input does not work. EITo pf: SID is not processed, EITo sch: SID is not processed, EITo sch selection is not processed, EITa sch: EITa sch selection is not processed.

Conditions:
Normal functionality.

Workaround for previous versions:
Not available for EITa sch: always uses 0x50.

Operational Limitations and Errors

Firmware

IP Streams with 1 MPEG packet can affect others if FEC board is present (ID. CSCtl24748)

This error was found in V08.05.0.

Symptom:
FEC encoding of TS streams with one MPEG packet in the UDP payload can cause MPEG packet loss in other output streams. FEC decoding of TS streams with one MPEG packet in the UDP payload can cause a packet drop of incoming packets of other streams.

Conditions:
FEC decoding of TS streams with one MPEG packet in the UDP payload.

Workaround:
Limit the number of MPEG packets per UDP packet to a minimum of 2 when the FEC board is present on the GbE IO card.

DRD

DRD S2: LNC bias not active on Port 2 after enabling (ID. CSCtr09047)

This error was found in V09.0.0.

Symptom:
The enabled port cannot be tuned to a valid input signal (remains unlocked). Signal status shows: ?input level too high?

Conditions:
Enabling multiple input ports in a single configuration step may occasionally trigger this.

Workaround:
Disable and re-enable the port again.

DRD DVB-S2: BER measurement value in DVB-S2 mode is too low

This error was found in V09.0.0.

Symptom:
Measurement of the BER value in DVB-S2 mode is too low.

Conditions:
Occurs when C/N margin is low.

Workaround:
None.

DRD DVB-S2: LNB overcurrent alarm is not triggered

This error was found in V09.0.0.

Symptom:
LNB overcurrent alarm is not generated.

Conditions:
Output current of LNB exceeds maximum value (450 mA).

Workaround:
None.

DRD DVB-S2: port remains unlocked after enabling all 4 ports at once

This error was found in V09.0.0.

Symptom:
Port remains unlocked even though a valid signal is present and the port is enabled.

Conditions:
Occurs when all four ports are enabled at once.

Workaround:
Disable/enable the specific port.

DRD DVB-S2: LNC bias not active on port 2 after enabling the setting

This error was found in V09.0.0.

Symptom:
Port 2 cannot lock even though a valid signal should be present.

Conditions:
Enable the LNC bias of 2 ports at once.

Workaround:
Disable/enable the specific port.

GUI

DCM Search shows the service Twice (ID. CSCtq86043)

This error was found in V08.05.0.

Symptom:
When searching for a service in the input tree, some services are shown twice in the result window.

Conditions:
It only occurs when the search string matches a service name of a service in a SPTS. The search results displays hits: The SPTS and the service.

Workaround:
None.

Webserver error TS grooming page

This error was found in V09.0.0.

Symptom:
Web Server error when clicking on the TS ID hyperlink in TS Grooming table.

Workaround:
Double clicking on the Input TS in tree view will navigate to the settings page correctly.

Other Known Limitations and Errors	Workaround
General limitations	
Known issue in V08.02.87 and later (seamless alternate services): Seamless switching to an alternate service will not always work properly if tracking rules are not defined correctly. This is the case if the user switches between two services with the same PID values, but other stream types (e.g., from PID 101 audio eng to PID 101 Teletext).	Configure tracking rules for all the components in the service.
Known issue in V08.02.87 and up (seamless alternate services): Seamless switching to an alternate service will not always work properly if both services contain PIDs with stream type 0x86 (with the same PID value) and one of the services contains a CUEI descriptor and the other service does not.	None
When upgrading from V06.05 or earlier to V08.05 or later, the new software is not installed completely.	Upgrade twice to install the new software completely.
Symptom: When upgrading from a release prior to V07.01 to a V08.0 onward, the licenses are no longer valid. Conditions: License transfer has been done on a release that does not support license transfer. This is done by increasing the license version and then passing the validation key to License-it to transfer the freed licenses to a new device. Because License Transfer is not supported yet, the new version is not stored properly. Although the version is already shown in the GUI, it is not used to validate the licenses. DCMs prior to V08.01 don't generate a verification key, so without overruling, License-it can't transfer the licenses. (Ref. CSCtk15250)	Get the last generated license file from Hesule and install it on the device. Then reboot.
When the co-processor board is configured for pure TS Delay, it is not possible to configure the other co-processor features: splicing, transrating, PID sync, audio leveling or Still Picture generation.	None
When you export the settings on V08.01 and upgrade to V08.09, the IP config service will be enabled. If you then restore the settings, the IP config service will be disabled again (where it should stay enabled). (Ref. CSCto93746)	Enable the IP config service again after the settings restore.

Other Known Limitations and Errors	Workaround
Transrating (applies only to services that are part of a transrating group)	
With regards to the feature "PES header insertion" there is the drawback that the values are only updated when there is a DTS or PTS present in the header.	None
Black frames always have default values in their PES headers.	None
The MPEG-1 Layer-II audio leveling feature only works for 48 kHz.	None
When audio leveling a service with a HD video, no video will be output.	Set the service settings to HD.
Maximum number of streams that can be transrated on a co-processor card is 350 NTSC, 420 PAL SD streams and 85 HD streams.	None
No support for streams containing floating PES headers.	None
If the transrater group bit rate equals the transport stream bit rate, small bandwidth overshoots will be evident in the case where the data bit rates of the service are extremely bursty. Resulting peaks would be max 100 kbps on 40 Mbps depending on the data bit streams.	Configure transrater group bit rate 0.25% smaller than the transport stream bit rate.
Transcoder	
Streams containing floating PES headers cannot be transcoded. (Ref. 8991)	None
When trying to transcode an audio stream with an invalid PCR, an alarm is generated. When applying a valid PCR afterwards, the alarm is not always cleared. (Ref. 10684)	None
DPI	
No full support for SCTE-35 Version 1 (ANSI_SCTE-302005). Init_Request version1 is accepted, but handled as being a version 0 Init_Request.	None
No support for source specific IGMPv3 joining.	None
SCTE-35 cue message re-stamping is done only outside of the avail: SCTE-35 cue messages on a spliceable service, transmitted during an avail and leaving the DCM will not be accurate for downstream splicers.	None

Other Known Limitations and Errors	Workaround
Abort of the ad insertion process in case of: Change (block, force …) service PID of the primary channel which is currently spliced in. Input PMT updates that trigger a similar action at the output (no abort if "Add Unspliced Insertion PIDs" mode is configured). Change SID of primary channel. Changing TS input standard (DVB, ATSC, DC-II) if ES type interpretation changes (e.g., video to data). Stop streaming TS output. Putting a spliceable service in or out a transrating group. A PMT change of the primary channel which does not involve PIDs that are currently spliced in does not result in an insertion abort. Also adding/removing a descriptor doesn't result in a splice abort.	None
No audio splicing possible in case of: MPEG-1 video coding. Dolby™ Digital (AC-3) coding with: sample rate 44.1 kHz and bandwidth 640 kbps sample rate 32 kHz and bandwidth 640, 576, 512 kbps AAC audio	None
In a service with 2 video PIDs, only one of them will be spliced. It is however, not advised to use this setup as it can lead to invalid DTS-STC distances.	None
PMT changes in the ad or regional program will be ignored.	None
Splicing a service that shares PIDs with other services at the output is not supported and could lead to corrupted or missing video and audio.	None.
DPI mode SCTE-35 only and SCTE-35 only (custom) will only work properly if the primary feed contains splice-insert cues with the out_of_network_indicator alternating between 1 and 0 (alternating splice-out and splice-in).	None
During an ad, the transrater can overshoot the configured group bit rate when the bit rate of the ad stream audio PIDs is larger than the bit rate of the network feed audio PIDs.	None
In (manual) DPI configurations, an output channel name has to be given. If this channel name contains the +-sign, the splice shall not be executed successfully.	Give another output channel name without the +-sign. This is possible because the output channel is defined manually.

Other Known Limitations and Errors	Workaround
During ad-to-ad or ad-to-main transitions, the configured transrating bit rate might overshoot for a brief period due to miscalculation of the audio bit rate. If the TS rate is equal to the transrater group bit rate, this could result in cc errors.	Foresee a margin between TS rate and transrater group bit rate.
The only audio format that is supported for DPI is MPEG1-LII and Dolby Digital (AC-3). AAC audio splicing is not supported.	None
Known limitation in all versions: SCTE-35 messages with a fragmented header are ignored by the DCM.	None
For updating the PTS values in SCTE-35 messages, the messages must not contain an adaptation field. Furthermore, the length of such an SCTE-35 must be limited to one transport packet.	None
AVC splicing	
A change between the MPEG-2 and H.264/MPEG-4 AVC splicing on the co-processor board will lead to removal of all co-processor related settings and restart of the co-processor.	None
For H.264/AVC splicing, only CABAC-coded video streams are supported. When using two DCMs, spliced streams from DCM1 can no longer be decoded by DCM2 because of the inserted, CAVLC-coded black frames (i.e., the splicer can only process CABAC-coded streams).	None
Back-to-back splicing is not supported by the H.264/AVC splicer.	None
The input stream has to consist of exactly one slice for the H.264/AVC splicer.	None
In order to splice between H.264/AVC coded videos streams, the input must be coded as frame-coded pictures (i.e., progressive coded or macroblock-adaptive coded). Field-coded streams (i.e., only containing field-coded macroblocks) are not supported.	None
AAC audio splicing is also not supported in the H.264/AVC splicer.	None
The splice shall be seamless as long as the main and tail stream has the same coding latency. If the coding latency is different between main and tail, the splice shall be executed, but not guaranteed in a seamless manner.	None

Other Known Limitations and Errors	Workaround
Multiplexer	
NIT import via IIOP: when a NIT with identical network id is imported via IIOP and PSIG, the last imported NIT will be used at the output TS. In addition, when the DCM reboots, it is not determined which of the sub-tables will be restored.	Only import NIT via one method (PSIG or IIOP).
NIT import via IIOP: the binary data containing the NIT must contain sections of the same sub-table. Mixing of sections of different sub-tables (e.g., NIT other of different networks) is not supported. The binary data must contain sections with section numbers in sequence.	None
On DCM V06.0, ATSC PSIP TVCT and CVCT tables could have different ETM_location_field settings. Since this is no longer possible, upgrading to DCM V06.05 or higher will set both ETM_location_fields to the V06.0 value of TVCT.	None
Known limitation on all versions with PSIP support when passing CEAM from another I/O board. The maximum number of different CEAM sources per output board is limited to 10. Trying to define one more source will result in an error. Using one source for multiple outputs, counts as one. The TS containing the CEAM must have a minimum input TS rate of 1.6 kbps for the ASI interface or 2.1 kbps (seven MPEG packets per UDP) for GbE interface and contain at least one packet prior to the CEAM message. The CEAM will be played out exactly as it is received at the input. No playout rate settings are available. Every packet at the input corresponds with exactly one packet at the output, which is binary identical. When two packets are received within a very short time (<10 ms), the second packet can be lost.	None
If a transport stream is passed transparently, then services belonging to that input TS could not be spliced or used as an insertion channel for splicing. (Ref. 10193)	None
GbE	
The receiving GbE port can only receive a MPTS with a bit rate of maximum 300 Mbit/s.	None

Other Known Limitations and Errors	Workaround
The transmitting GbE port can have a maximum TS bit rate of 950 Mbit/s if seven MPEG packets per UDP packet are configured, no RTP and no VLAN. If one MPEG packet per UDP packet is configured, the maximum TS bit rate wll be 158,625 Mbit/s.	None
FEC encoding of TS streams with one MPEG packet in UDP payload can cause MPEG packet loss in other output streams. FEC decoding of TS streams with one MPEG packet in the UDP payload can cause packet drop of incoming packets of other streams.	Limit the number of MPEG packets per UDP packet to a minimum of two when the FEC board is present on the GbE IO card.
Statistical Multiplexing of D9032 encoders and combined	
The maximum number of encoders supported is 60 per I/O board (except for remote statmux).	None
In Remote statmux a maximum of 30 encoders are supported.	None
Network name, priority, and frame format for D9054 encoders are not shown in the DCM GUI.	None
Encoder drop out alarm. If an encoder drops out of a statmux pool for a short period of time (<1 sec) then the alarm will not be raised.	Drop in and out of encoders are always logged in the trace files.
When an encoder is removed from a statmux pool, the "Encoder drop out alarm" stays active.	Explicitly clear the "Encoder drop out alarm" after removing any encoder from a statmux pool.
Video PIDs containing lots of PES packet stuffing will disrupt the proper working of the stat multiplexing algorithm. As a consequence, bit rate will be wasted and the quality will not be optimal.	There is no workaround for previous releases.
Statistical Multiplexing of D9036 Encoders	
Validation of min/default/max bit rate settings for the VSEs may not be consistent with the validation on the D9036. This means that the user may be allowed to apply a bit rate setting on the DCM that is not valid for the VSE. In this case, the alarm "VSE Configuration Error" is raised, when the setting is rejected by the D9036.	Apply valid settings according to the D9036 documentation.
GUI	
Known limitation since V06.09: <Alt + S> can no longer be used to search in the services trees.	Use the search button or the context menu.

Other Known Limitations and Errors	Workaround
The preferred browsers to use when viewing the embedded user interface are Microsoft Internet Explorer 7 or 8 and Firefox 3.5 or 3.6. Internet Explorer 6 and Firefox 3.0 are no longer supported.	None
When clicking "Find Destinations" on an input service, it will only list the output services where the input service was used as main source. (Alternates, merging, and backup sources are not included).	None
The time on the device should be configured correctly to ensure the browser cache can be used correctly. It is also required to ensure the browser uses its cache when you access the DCM through its user interface. The default browser settings are sufficient to achieve this. If this is not the case, loading of a page can take longer than expected.	None
IP Video Gateway	
The 10 GB GbE interface has a limited throughput of approx. 9.7 GB.	None
Digital Overlay	
IIOP interface of DCM limits the encoding of banner texts to ASCII when using deprecated TC_Banner_t or StartEAS. This issue can not occur when using the GUI.	Use TC_Banner_V2_t and StartEAS_V3 to control the encoding of text banners.
When uploading a font file, the user should wait long enough before doing another action on the GUI. Currently the GUI does not give an indication when the font file was completely uploaded. In case the user does not wait long enough, it is possible the font file is incomplete and not all characters can be displayed.	Wait long enough.
The resolution of each logo, static or animated, is at most 320x180.	None
The amount of frames in an animated logo is at most 250 frames. Longer animations are not allowed.	None
Logos can be inserted into 720p or SD streams (1080i input video streams are not supported).	None
At most four input streams will be supported on one transcoder board.	None

Other Known Limitations and Errors	Workaround
The logo insertion application can only work on a revision 3 transcoder board. The revision number can be found in the user interface, Configuration page, Version info, transcoder board: "TC CO-P DSP Revision" should be V03.XX.YY or higher.	None
The output of the logo insertion has to be transrated by an MPEG-2 transrater (in the DCM) in order to ensure that the generated output stream can be decoded by a STB. Without a transrater after the logo insertion engine, it is not guaranteed that the generated stream will be compliant with the video specifications.	None
The scrolling text can contain no more than 3500 characters.	None
The animated MNG files should have the following limitations: all frames in the file must have the same offset size of (0, 0), and the same frame delay. Each color channel has to have 8 bits per channel and the frame delay must be different from 0.	None
To guarantee a good visual quality of the scrolling text, the speed of the text must be limited to 6 pixels per frame for HD and 12 pixels per frame for SD.	None
Scrambling	
For BISS descrambling, when the session word or parity changes on the scrambling device, the descrambling DCM will still show the service as descrambled while it is no longer physically descrambled.	
Scrambled services cannot be combined with the following co-processor features: Transrating (scrambled services can be put in Pass-Through mode) DPI, PID Sync, PCR Continuity	None

Other Known Limitations and Errors	Workaround
Miscellaneous	
CEAM EAS Support: It is not possible to configure text crawl generation from a specific EAS proxy. It is only possible to enable/disable text crawling for a given service. All EAS proxies which have text crawl enabled can trigger text crawl insertion. The DCM does not support audio break away and forced tuning to the details channel. An SCTE-18 message with empty alert_text field will not trigger text crawl insertion.	None
EAS proxy in multicast mode: due to reverse path filtering, only multicast datagrams from the same subnet can be received.	The reverse route to the other subnet must be established. This can be configured on the "configuration – routes" screen.
RIPv2 support is only possible on Port 1 and Port 3, manually configured. All other configurations can only be configured via Port 1 and Port 3, making anycast impossible.	
When RIPv2 is enabled on a transport stream and the source IP address is changed, it will not be published that the old source IP address has been removed, so the routers will only react after a timeout.	First stop the transport stream before changing the source IP address.
Auto TS streaming	
"Auto TS Streaming" can be configured for transparent loop through Transport Streams, but this setting will have no effect on the streaming state of the output TS (the behavior is the same as for streaming "on").	None
Outgoing digital Transport Formatter (DTF) Transport Streams will not support the Auto TS Streaming mode.	None

Operational Limitations and Errors – Supercrypt

The latest version of Supercrypt is DCM release V06-00-89. Supercrypt is no longer supported in higher versions.

V08.09.01

Corrected Errors

Transrating/Splicing

GPIO contact poll time to 10 ms and corrected timestamp (ID. CSCtq80929)

This error was found in all versions.

Symptom:
Enhanced frame accuracy of splicing with GPIO contacts by setting the contact poll time to 10msec and correcting the timestamp by subtracting the debounce time.

Improved splice point for local program insertion (ID. CSCtq80903)

This error was found in all versions.

Symptom:
When splicing back from insertion to network stream using manual splicing, the splice point is displaced by a couple of frames.

Conditions:
The situation is worse if the network stream is late at the beginning of the splice.

Workaround for previous versions:
None.

Platform

flashuboot broken on IP adapter cards (ID. CSCtq78064)

This error was found in V08.09.0.

Symptom:
When upgrading the bootloader of an IP Video Gateway card, either by upgrading it on the IP Video Gateway card itself or by upgrading all bootloaders at once from the mainboard, the bootloader upgrade script hangs.

Conditions:
The IP Video Gateway card is present in the chassis and the user is performing a bootloader upgrade of the card. The latter should only be done when requested by customer service.

Workaround for previous versions:
Upgrading the bootloader of the IP Video Gateway cards is not possible with this release, but all other cards can have their bootloader upgraded by logging in to the card and performing the bootloader upgrade command on the card itself. To upgrade the bootloader of the IP Video Gateway card, a previous or later software release can be used.

Operational Limitations and Errors

Limitations and Errors	Workaround
General limitations	
Known issue in V08.02.87 and later (seamless alternate services): Seamless switching to an alternate service will not always work properly if tracking rules are not correctly defined. This is the case if the user switches between two services with the same PID values, but different stream types (e.g., from PID 101 audio eng to PID 101 Teletext).	Configure tracking rules for all the components in the service.
Known issue in V08.02.87 and up (seamless alternate services): Seamless switching to an alternate service will not always work properly if both services contain PIDs with stream type 0x86 (with the same PID value) and one of the services contains a CUEI descriptor and the other service doesn't.	None
When upgrading from V06.05 or earlier to V08.05 or later, the new software is not installed completely.	Upgrade twice to completely install the new software.

Limitations and Errors	Workaround
Symptom: When upgrading from a release prior to V07.01 to V08.0 or later, the licenses are no longer valid. Conditions: License transfer has been performed on a release that does not support license transfer. This is done by increasing the license version and then passing the validation key to License-it to transfer the freed licenses to a new device. Because License Transfer is not supported, the new version is not stored properly. Although the version is already shown in the web GUI, it is not used to validate the licenses. DCMs prior to V08.01 don't generate a verification key, so without overruling, License-it can't transfer the licenses. (Ref. CSCtk15250)	Obtain the last generated license file from Hesule and install it on the device. Then reboot the unit.
When the co-processor board is configured for pure TS Delay, it is not possible to configure the other co-processor features: splicing, transrating, PID sync, audio leveling or Still Picture generation.	None
When you export the settings on V08.01 and upgrade to V08.09, the IP config service will be enabled. If you then restore the settings, the IP config service will be disabled again (where it should stay enabled). (Ref. CSCto93746)	Enable the IP config service again after the settings restore.
Transrating (applies only to services that are part of a transrating group)	
With regards to the feature "PES header insertion" there is the drawback that the values are only updated when there is a DTS or PTS present in the header.	None
Blackframes always have default values in their PES headers.	None
The MPEG-1 Layer-II audio leveling feature only works for 48 kHz.	None
When a service is audio leveled with HD video, there is no video output.	Set the service settings to HD.
The maximum number of streams that can be transrated on a coprocessor card is 350 NTSC, 420 PAL SD streams and 85 HD streams.	None
No support for streams containing floating PES headers.	None

Limitations and Errors	Workaround
If the transrater group bit rate equals the transport stream bit rate, one might see small bandwidth overshoots in the case that the data bit rates of the service are extremely bursty. The resulting peaks would be max 100 kbps on 40 Mbps depending on the data bit streams.	Configure transrater group bit rate 0.25% smaller than the transport stream bit rate.
Transcoder	
Streams containing floating PES headers cannot be transcoded. (Ref. 8991)	None
When trying to transcode an audio stream with an invalid PCR, an alarm is generated. When applying a valid PCR afterwards, the alarm is not always cleared. (Ref. 10684)	None
DPI	
No full support for SCTE-35 Version 1 (ANSI_SCTE-302005). Init_Request version1 is accepted but handled as being a version 0 Init_Request.	None
No support for source specific IGMPv3 joining.	None
SCTE-35 cue message re-stamping is done only outside of the avail: SCTE-35 cue messages on a spliceable service, transmitted during an avail and leaving the DCM will not be accurate for downstream splicers.	None
Abort of the ad insertion process in case of: Change (block, force …) service PID of the primary channel which is currently spliced in. Input PMT updates that trigger a similar action at the output (no abort if "Add Unspliced Insertion PIDs" mode is configured). Change the SID of the primary channel. Changing TS input standard (DVB, ATSC, DC-II) if ES type interpretation changes (e.g., video to data). Stop streaming TS output. Putting a spliceable service in or out of a transrating group. A PMT change of the primary channel which does not involve PIDs that are currently spliced in does not result in an insertion abort. Also adding/removing a descriptor doesn't result in a splice abort.	None

Limitations and Errors	Workaround
No audio splicing possible in case of: MPEG-1 video coding Dolby Digital (AC-3) coding with: sample rate 44.1 kHz and bandwidth 640 kbps sample rate 32 kHz and bandwidth 640, 576, 512 kbps AAC audio	None
In a service with 2 video PIDs, only one of them will be spliced. It is however not advised to use this setup as it can lead to invalid DTS-STC distances.	None
PMT changes in the ad or regional program will be ignored.	None
Splicing a service that shares PIDs with other services at the output is not supported and could lead to corrupted or missing video and audio.	None
DPI mode SCTE-35 only and SCTE-35 only (custom) will only work properly if the primary feed contains splice-insert cues with the out_of_network_indicator alternating between 1 and 0 (alternating splice-out and splice-in).	None
During an ad, the transrater can overshoot the configured group bit rate when the bit rate of the ad stream audio PIDs is larger than the bit rate of the network feed audio PIDs.	None
In (manual) DPI configurations, an output channel name has to be given. If this channel name contains the +-sign, the splice will not be executed successfully.	Give another output channel name without the +-sign. This is possible because the output channel is defined manually.
During ad-to-ad or ad-to-main transitions, the configured transrating bit rate might overshoot for a brief period due to miscalculation of the audio bit rate. If the TS rate is equal to the transrater group bit rate, this could result in cc errors.	Foresee a margin between TS rate and transrater group bit rate.
The only audio format that is supported for DPI is MPEG1-LII and Dolby Digital (AC-3). AAC audio splicing is not supported.	None
Known limitation in all versions: SCTE-35 messages with a fragmented header are ignored by the DCM.	None
For updating the PTS values in SCTE-35 messages, the messages must not contain an adaptation field. Furthermore, the length of such an SCTE-35 must be limited to one transport packet.	None

Limitations and Errors	Workaround
It is only possible to perform 60 simultaneous switches of seamless alternate services. If more services are switched simultaneously, some might not be seamless. Switches are simultaneous if the IDL commands to switch the services happen at exactly the same time.	None
AVC Splicing	
A change between the MPEG-2 and H.264/MPEG-4 AVC splicing on the co-processor board will lead to a removal of all co-processor related settings and a restart of the co-processor.	None
For H.264/AVC splicing, we only support CABAC-coded video streams. This means that our own spliced stream cannot be used anymore to be spliced on downstream in the network (because the inserted CABAC-coded black frames can no longer be decoded by the splicer).	None
Back-to-back splicing is not supported by the H.264/AVC splicer.	None
The input stream has to consist of exactly one slice for the H.264/AVC splicer.	None
In order to splice between H.264/AVC coded video streams, the input must be coded as frame-coded pictures (i.e., progressive coded or macroblock-adaptive coded). Field-coded streams (i.e., only containing field coded macroblocks) are not supported.	None
AAC audio splicing is also not supported in the H.264/AVC splicer.	None
The splice will be seamless as long as the main and tail stream has the same coding latency. If the coding latency is different between main and tail, the splice will be executed but not guaranteed in a seamless manner.	None
Multiplexer	
NIT import via IIOP: when a NIT with identical network id is imported via IIOP and PSIG, the last imported NIT will be used at the output TS. In addition, when the DCM reboots, it is not determined which of the sub-tables will be restored.	Only import NIT via one method (PSIG or IIOP).

Limitations and Errors	Workaround
NIT import via IIOP: the binary data containing the NIT must contain sections of the same sub-table. Mixing of sections of different sub-tables (e.g., NIT other of different networks) is not supported. The binary data must contain sections with section numbers in sequence.	None
On DCM V06.0, ATSC PSIP TVCT and CVCT tables could have different ETM_location_field settings. Since this is not possible anymore, upgrading to DCM V06.05 or later will set both ETM_location_fields to the V06.0 value of TVCT.	None
Known limitation on all versions with PSIP support when passing CEAM from another I/O board: The maximum number of different CEAM sources per output board is limited to 10. Trying to define one more source will result in an error. Using one source for multiple outputs, counts as one. The TS containing the CEAM must have a minimum input TS rate of 1.6 kbps for the ASI interface or 2.1 kbps (7 MPEG packets per UDP) for GbE interface and contain at least one packet prior to the CEAM message. The CEAM will be played out exactly as it is received at the input. No playout rate settings are available. Every packet at the input corresponds with exactly one packet at the output, which is binary identical. When two packets are received within a very short time (<10 ms), the second packet can be lost.	None
If a transport stream is passed transparently, then services belonging to that input TS could not be spliced or used as insertion channel for splicing. (Ref. 10193)	None
GbE	
The receiving GbE port can only receive a MPTS with a bit rate of maximum 300 Mbit/s.	None
The transmitting GbE port can have a maximum TS bit rate of 950 Mbit/s if seven MPEG packets per UDP packet are configured, no RTP and no VLAN. If one MPEG packet per UDP packet is configured, the maximum TS bit rate wll be 158,625 Mbit/s.	None
FEC encoding of TS streams with one MPEG packet in UDP payload can cause MPEG packet loss in other output streams. FEC decoding of TS streams with one MPEG packet in the UDP payload can cause packet drop of incoming packets of other streams.	Limit the number of MPEG packets per UDP packet to minimum two when the FEC board is present on the GbE IO card.

Limitations and Errors	Workaround
Statistical Multiplexing of Encoders	
The maximum number of encoders supported is 60 per I/O board (except for remote statmux).	None
In Remote statmux a maximum of 30 encoders are supported.	None
Network name, priority, and frame format for D9054 encoders are not shown in the DCM web GUI.	None
Encoder drop out alarm. If an encoder drops out of a statmux pool for a short period of time (<1 sec) then the alarm will not be raised.	Drop in and out of encoders are always logged in the trace files.
When an encoder is removed from a statmux pool the "Encoder drop out alarm" stays active.	Explicitly clear the "Encoder drop out alarm" after removing any encoder from a statmux pool.
Video PIDs containing lots of PES packet stuffing will disrupt the proper working of the stat multiplexing algorithm. As a consequence bit rate will be wasted and the quality will not be optimal.	There is no workaround.
GUI	
Known limitation since V06.09: <Alt + S> can no longer be used to search in the services trees.	Use the search button or the context menu.
The preferred browsers to use when viewing the embedded user interface are Internet Explorer 7 or 8 and Firefox 3.5 or 3.6. Internet Explorer 6 and Firefox 3.0 are no longer supported.	None
When clicking "Find Destinations" on an input service it will only list the output services where the input service was used as the main source. (Alternates, merging, and backup sources are not included)	None
The time on the device should be configured correctly to make sure the browser cache can be used correctly. It is also required to make sure the browser uses its cache when you access the DCM through its user interface. The default browser settings are sufficient to achieve this. If this is not the case, a page load can take longer than expected.	None

Limitations and Errors	Workaround
It is possible that on some pages non-ASCII characters are not displayed. In such a case, when you apply another setting on the same page the string without the special characters will be applied also, effectively changing this setting at the same time. (Ref. CSCtk18668)	None
IP Video Gateway	
The mode of the FEC error generator cannot be changed for a stream if FEC is not enabled for that stream. For example, if FEC is disabled for a stream on which the error generator is active, the mode of the error generator cannot be changed (disabled). (Ref. CSCtl85878)	Always disable the error generator before disabling FEC, or re-enable FEC and change mode.
The 10 GB GbE interface has a limited throughput of approx. 9.7 GB.	None
FEC default socket inconsistency when configuring an out going GbE stream to `individual port` mode and using multicast destination IP addresses. **Notes:** ■ If the destination address of a stream is (IP, port), the default for FEC-ROW socket is (IP, port+2) if IP is a unicast and (IP+2, port) is a multicast. Similar for FEC-COL with +4 instead of +2. ■ In `individual port` mode, the destination socket is configured per GbE port for the outgoing stream in question. Limitation is that the FEC destination socket can only be specified for first GbE port in `individual port` mode. In order for FEC to be able to work on GbE-B port, the FEC destination socket is fixed to (IP_B, $port_B$+2) and (IP_B, $port_B$+4) for ROW and COL respectively, where IP_B is the destination IP address for the stream on GbE-B (Ref. CSCtl85824)	When routing a SDI to a GbE and choosing a multicast address, and then afterwards configuring to `individual port` mode, then default FEC-ROW sockets will be (IP_A+2, $port_A$) for GbE-A, and (IP_B, $port_B$+2) for GbE-B. For GbE-A, this can be changed, but for B it is fixed. Also note that on the corresponding decoder, the FEC socket must be changed in this case.
Swapping of IP-addresses between GbE port A and B is not possible. In other words, moving the IP address from GbEport A to GbEport B and vice versa is not possible in one step. (Ref. CSCtl60346)	First assign unused dummy IP addresses to both ports and then assign the correct new addresses.

Limitations and Errors	Workaround
Digital Overlay	
When uploading a font file, the user should wait long enough before performing another action on the web GUI. Currently, the GUI does not give an indication when the font file was completely uploaded. In case the user does not wait long enough, it is possible the font file is incomplete and not all characters can be displayed.	Wait long enough.
The resolution of each logo, static or animated, is at most 320x180.	None
The amount of frames in an animated logo is at most 250 frames. Longer animations are not allowed.	None
Logos can be inserted into 720p or SD streams (1080i input video streams are not supported).	None
At most 4 input streams will be supported on one transcoder board	None
The logo insertion application can only work on a revision 3 transcoder board. The revision number can be found in the user interface, Configuration page, Version info, transcoder board: "TC CO-P DSP Revision" should be V03.XX.YY or higher.	None
The output of the logo insertion has to be transrated by an MPEG-2 transrater (in the DCM) in order to be sure that the generated output stream can be decoded by a STB. Without a transrater after the logo insertion engine, it is not guaranteed that the generated stream will be compliant to the video specifications.	None
The scrolling text can contain at most 3500 characters.	None
The animated MNG files should have the following limitations: all frames in the file must have the same size an offset of (0, 0), and the same frame delay. Each color channel has to have 8 bits per channel and the frame delay must be different from 0.	None
To guarantee a good visual quality of the scrolling text, the speed of the text must be limited to 6 pixels per frame for HD and 12 pixels per frame for SD.	None

Limitations and Errors	Workaround
Scrambling	
For BISS descrambling, when the session word or parity changes on the scrambling device, the descrambling DCM will still show the service as descrambled while it is no longer physically descrambled.	
Scrambled services cannot be combined with the following co-processor features: Transrating (scrambled services can be put in *Pass-Through* mode though). DPI PID Sync PCR Continuity	None
Miscellaneous	
CEAM EAS Support: It is not possible to configure text crawl generation from a specific EAS proxy. It is only possible to enable/disable text crawling for a given service. All EAS proxies which have text crawl enabled can trigger text crawl insertion. The DCM does not support audio brake away and forced tuning to details channel. An SCTE-18 message with empty alert_text field will not trigger text crawl insertion.	None
EAS proxy in multicast mode: due to reverse path filtering, only multicast datagrams from the same subnet can be received.	The reverse route to the other subnet must be established. This can be configured in the "configuration – routes" screen.
RIPv2 support is only possible on Port 1 and Port 3 manually configurated. All other configurations will only configurate via Port 1 and Port 3, making anycast impossible.	
When RIPv2 is enabled on a transport stream and the source ip address is changed, it will not be published that the old source ip address is removed, so the routers will only react on that after a timeout.	First stop the transport stream before changing the source IP address.
Auto TS Streaming	
"Auto TS Streaming" can be configured for transparent loop through Transport Streams, but this setting will have no effect on the streaming state of the output TS (the behavior is the same as for streaming "on").	None

Limitations and Errors	Workaround
Outgoing digital Transport Formatter (DTF) Transport Streams will not support the Auto TS Streaming mode.	None

Operational Limitations and Errors – Supercrypt

The latest version of Supercrypt is DCM release V06-00-89. Supercrypt is no longer supported in higher versions.

Common Release Information

Interface specification

The following documents/files describe the interface by which the device is accessible:

- DCM IDL Reference manual
- DCM.idl
- DCM_Types.idl

Installation guidelines

Software download

Tool to be used	Upgrade-It
Location of software download tool	Upgrade-It.exe
Description download procedure	Upgrade.doc

Handling details

None

Related Publications

Refer to:

- Digital Content Manager (DCM) - Configuration Guide, part number 4011746
- Cisco Series DCM D9900 Digital Content Manager - System Guide, part number 4034565
- Cisco DCM Series D9901 Digital Content Manager System Guide, part number 4026665
- Digital Content Manager (DCM) Model D9900 – System Guide, part number 4011745

For Information

Cisco provides customers with telephone support from anywhere in the world. If you require technical telephone assistance or product training support, or if you have any questions concerning your Cisco product, you may contact the appropriate Customer Support Center from those listed below. Charges may apply for customers without a current and applicable product support agreement.

Customers	Location	Phone Number
Programmers and Broadcasters	USA and Canada	Toll-free: 1.888.949.4786 +1.770.236.4786 dmn_support@cisco.com
Telcos and Cable Service Providers	Cisco Services	Toll-free: 1.800.722.2009 Local: 678.277.1120 (Press **2** at the prompt) customer-service@cisco.com
All customers	Europe	+32.56.445.155 or +32.56.445.197 saemea-support@cisco.com
All customers	Asia	+852.2588.4746 saapac-support@cisco.com

Customers who call a Customer Support Center are asked specific questions in order to identify their needs. In this way, each call can be directed to the customer support representative most experienced with your Cisco product.

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