Fraunhofer
IIS

easyDCP KDM Generator+

User manual

Version
4.2

Date
Erlangen, 18/12/2023

Contents

1 Welcome

Thank you for purchasing easyDCP KDM Generator+ software.

easyDCP KDM Generator+ allows you to generate KDMs of your encrypted DCP in a fast and convenient manner. Based on an easyDCP Digest file, which is created by easyDCP Creator+ along with each encrypted DCP, it is possible to generate KDMs or Distribution KDMs for digital cinema servers or mastering stations.

easyDCP KDM Generator+ also manages its own private and public key-pair, therefore enabling you to receive Distribution KDMs. A Distribution KDM is technically identical to a regular KDM. The difference is that it's recipient is another mastering station or KDM creation tool in the post-production or distribution chain. This feature makes easyDCP KDM Generator+ usable independently from easyDCP Creator+ and enables you to handle large KDM creation and distribution jobs for encrypted DCPs created by any mastering station.

easyDCP KDM Generator+ is able to generate KDMs in SMPTE or InterOp conformity mode. By default, the proper mode is selected automatically based on the recipient's certificate's conformity. easyDCP KDM Generator+ is laid out to batch process large KDM creation jobs. In addition to targeting a single server certificate you can also specify a directory containing as many as hundreds of server certificates. easyDCP KDM Generator+ will generate KDMs for all detected valid server certificates within seconds. Thanks to a configurable digital signature, you can make sure to deliver trustable keys to your customers. easyDCP KDM Generator+ requires no special hardware.

2 Feature Overview

- Creates standard compliant SMPTE or InterOp KDMs
- Usable from command line (CLI)
- Reads proprietary easyDCP Digest File
- Reads Distribution KDM (DKDM)
- Independent of easyDCP Creator+
- Available for 64 bit Windows 10
- Available for 64 bit Mac OS X (10.14-10.15)

3 Licensing

3.1 Demo Mode Restrictions

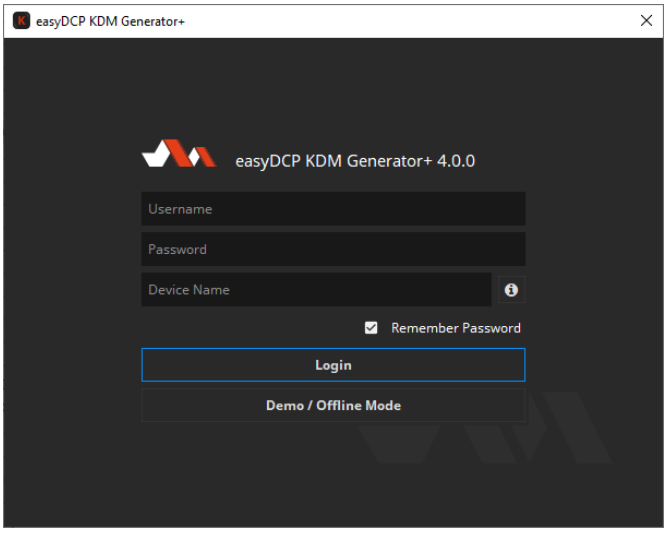
In the demo version of easyDCP KDM Generator+ you may only create KDMs with a valid period of two days or less. Furthermore the demo version provides automatically generated signer and server example certificates only.

3.2 License Activation and Certification

Download easyDCP KDM Generator+ at www.easydcp.com.

3.2.1 Offline workflow

After installing and starting easyDCP KDM Generator+ the following dialog appears:



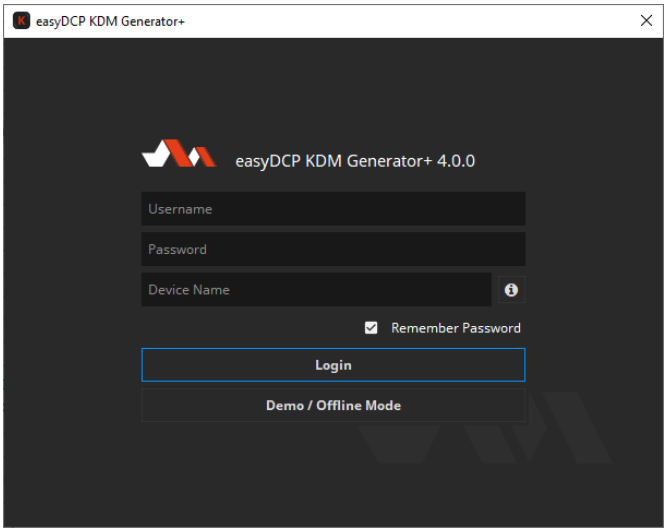
Click "Demo / Offline Mode" to start a free version of easyDCP KDM Generator+ which is subjected to the demo mode restrictions listed in chapter3.1. After startup has finished, go to "Help", "Request License & Certificates". Fill in the licensee's name, the URL that shall be stated in the custom server certificates and a password that is used to protect access to the certificates. If the computer is connected to the Internet, click the "submit" button. The default web-browser will open www.easydcp.com, where further instructions will guide you through the purchase process.

After the purchase, a link to the zip file with the License & Certificate will be available for download within your user account at www.easydcp.com. The zip file can be dragged & dropped into easyDCP KDM Generator+ installation to unlock it.

Please be aware that this workflow only works with permanent licenses. For subscriptions you have to follow Online workflow.

3.2.2 Online workflow

Purchase one of the available subscription plans at www.easydcp.com. After the purchase, a license and the necessary certificate for easyDCP KDM



Generator+ is linked to your easyDCP account.

Install and start easyDCP KDM Generator+ and fill in the username and password you've used for your easyDCP account. After clicking "Login", easyDCP KDM Generator+ will automatically download the linked license and certificates from www.easydcp.com and activate your instance.

The "Device Name" field is prefilled with the name of the machine you use easyDCP Creator on. You can change the name freely. The name will be send to easyDCP.com and is used for convenient device identification only.

Please be aware that a permanent internet connection is required. As soon as easyDCP KDM Generator+ detects a connection loss, the graphical user interface will be locked until the internet connection has re-established.

With the online licensing workflow it's possible to run easyDCP KDM Generator+ on different systems with the same license. Please be aware that multiple subscriptions are necessary to run easyDCP KDM Generator+ instances at the same time on different machines.

Please be aware that for each computer a server certificate will be generated. Example: If you login on system 1 and afterwards on system 2, there will be two server certificates linked to your easyDCP account.

3.3 Application Data and Settings

easyDCP KDM Generator+ automatically creates an application data folder. It contains the settings file as well as a folder where the server certificates are stored.

The folder is located at
`<User Application Data>/Fraunhofer IIS/easyDCP KDM Generator+/`

Additionally, all easyDCP applications share a folder with additional files such as color space descriptions. It is located at
`<User Application Data>/Fraunhofer IIS/easyDCP Shared/`

The user application data folder on Windows is in
`C:/Users/<username>/AppData/Roaming/`

A shortcut is to just enter `%APPDATA%` into the address bar.

On Mac OS X, the user application data folder is at
`\Users\<username>\Library\Application Support\`

3.4 Software Update

Please make sure you leave the automatic check-for-updates enabled, so that you get informed immediately when new versions are available for download.

Multiple versions of easyDCP KDM Generator+ can be installed side-by-side, so there is no need to uninstall the old version before installing a new one.

A new license file is only required for major updates, e.g. version 3.6 to version 3.7, and can be purchased at www.easydcp.com. Point releases do not require a new license, e.g. 3.7.0 to 3.7.1.

The update procedure is as follows

Point Release (only the last version number changes, e.g. 3.7.0 to 3.7.1)

1. Log into your account at www.easydcp.com
2. Download the new installer file and install it
3. **Offline licensing workflow:** The new easyDCP KDM Generator+ version will automatically detect your existing license file and is good to go.
4. **Online licensing workflow:** easyDCP KDM Generator+ will automatically download the necessary license and certificates information from www.easyDCP.com as described in 3.2.1. There is nothing else you have to do.

Major Release (first or second version number changes, e.g. 3.6.x to 3.7.x)

Offline licensing workflow

1. Log into your account at www.easydcp.com and purchase the license for the new version. The installer is then available for download. Download and install it.

2. Open the new easyDCP KDM Generator+ version and proceed with the steps described in 3.2.1

    a. If you have already used easyDCP KDM Generator+ before, you likely already have personalized server certificates. easyDCP KDM Generator+ will prompt you for the password. If the password can be verified, the new version of easyDCP KDM Generator+ will continue to use your existing server certificates and only request a new license file (the next step will prompt for a server certificate URL and password anyway, but the inputs are ignored then).

Online licensing workflow

If you have a valid subscription plan the installer of the new version can be downloaded at www.easydcp.com. All further steps are described in 3.2.2.

4 Generating KDMs

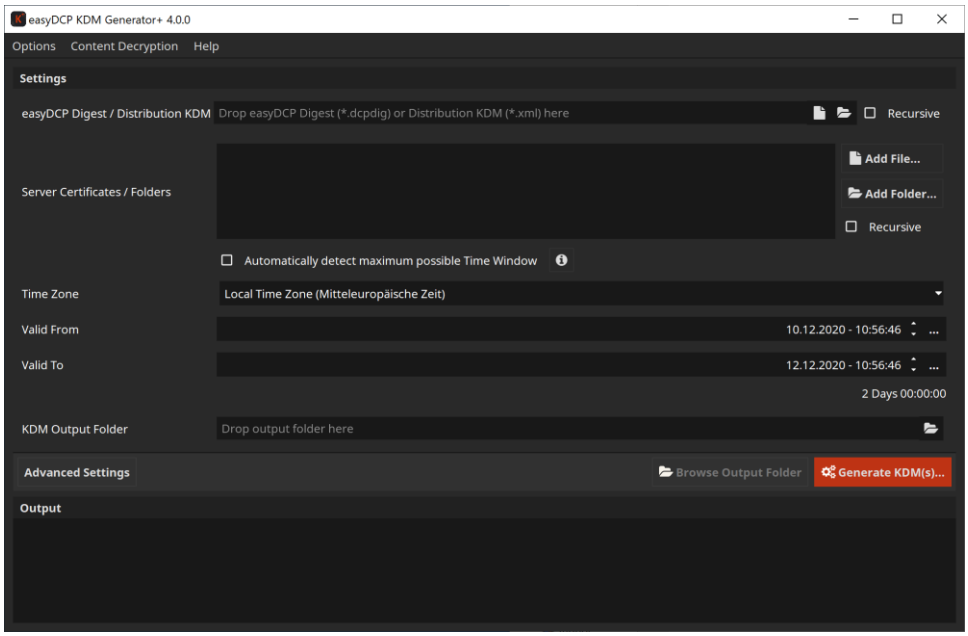
In order to generate KDMs for a Digital Cinema Package (DCPs), a key input file is required. Both easyDCP KDM Generator and easyDCP KDM Generator+ can read a proprietary easyDCP Digest file. This file is created by easyDCP Creator+ whenever an encrypted DCP is generated. The digest file describes not only the DCP's structure, but also contains all encryption keys.

Upon clicking the "`Generate KDM!`" button, easyDCP KDM Generator+ will create KDMs for all server certificates in a single job. Using the full version of easyDCP Player+, you can test the whole procedure by issuing a KDM to your easyDCP Player+'s public server certificate. By selecting the own exported public server certificate, easyDCP KDM Generator+ can even issue a DKDM to itself. By the way, this procedure is the same when you want to issue a Distribution KDM (DKDM) for your client's mastering station.

For advanced users it is also possible to create your own digest file as described in chapter 8.

4.1 The graphical user interface

easyDCP KDM Generator+ provides a graphical user interface which allows you to generate KDMs in a fast and convenient manner. All important settings can be applied with a few mouse clicks.



4.1.1 Settings section

The "Settings" section is the place to edit job specific input and output files or folders. You can either drag & drop files or folders onto the various input fields, or use the "…"buttons to browse for files or folders.

After all settings have been applied, the KDM batch processing job can be started by hitting the "`Generate KDM`..." button. The status messages will be printet in the output section.

A job can be aborted by hitting the same button again. An error message will appear in the output to inform the user.

"Digest / Distribution KDM"

Use this field to load the easyDCP Digest file, which contains the encrypted DCP's encryption keys. Note: A digest file contains information on all compositions of a DCP. However, a KDM only corresponds to a single composition. easyDCP KDM Generator+ will by default create KDMs for all compositions that are listed in the digest and reference encrypted content.

easyDCP KDM Generator+ also allows to read a Distribution KDM (DKDM). The DKDM will be validated when the "Generate KDM" button is clicked. It can only be read if it was specifically issued to your easyDCP KDM Generator+ installation's public server certificate that you previously exported with the "Export public server certificate" (F7) entry in the "Content Decryption" menu and sent to the DKDM's issuer. Furthermore, the DKDMs expiration date and signature is checked.

Server Certificates Input Folder

In this field you can either point to a single public server certificate file or to a directory containing multiple public server certificate files.

By checking "Recursive" easyDCP KDM Generator+ will include server certificates in all subfolders of a given directory also.

A public server certificate contains the server's public key which was calculated from the server's private key. The keys in a KDM will be encrypted with a single server's public key. This ensures that only the targeted server (i.e. the recipient) can decrypt the keys in the KDM, because it is the only entity that knows and has access to the private key.

It is perfectly possible to point to your own public server certificate and generate a DKDM. Subsequently you can load the DKDM into the "Digest / Distribution KDM" field. You can also issue a KDM to your easyDCP Player+ installation's public server certificate.

Usually, on the cinema server manufacturers' ftp servers you can find both the public server certificate and the signature chain that was used to sign the

certificate. If you decide to trust the certificate by examining the signature certificate chain, you only need the server certificate to create a KDM. It usually has either a *.pem or *.crt suffix. easyDCP KDM Generator+ will accept either. Furthermore, there will be pairs of certificate and chain that state "mpeg", "sha1" and "sha256". Like with DCPs, there are SMPTE and InterOp KDMs. Almost all modern servers prefer SMPTE KDMs. It is recommended to distribute only SMPTE KDMs, which are only valid if the the "sha256" server certificate version was used.

Time Zone

By default, the time zone is set to the time zone configured in the operating system. The *valid from-* and *valid to-* times are interpreted as local times of the selected time zone. During the KDM generation process these times are convertet to the equivalent UTC times. For direct use of UTC time select UTC from Time Zone.

Valid From Time / Valid To Time

By default, the validity period will be initialized to two days. By clicking on the "…" button, a calendar dialog will open.

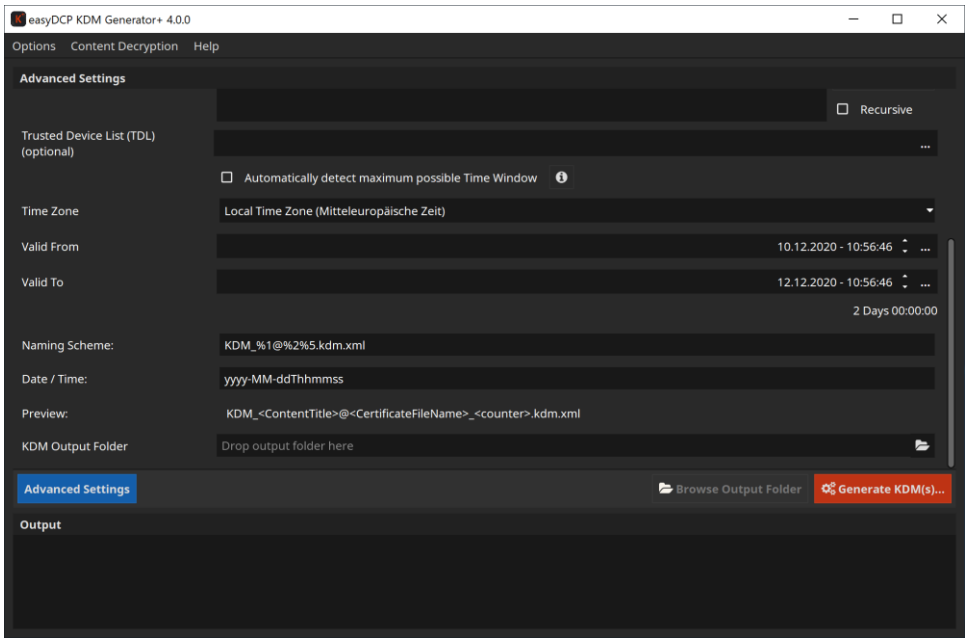
The KDM will only be valid between these two dates. Outside of this period it will not be possible to play back the corresponding encrypted DCP in a cinema. The entered dates and times are interpreted as local times according to the selected time zone.

KDM Output Folder

Specifies the directory where generated KDMs will be stored. By default, KDMs will be named
"kdm_<content_title>@<server_cert_filename>_<counter>.kdm.xml".

4.1.2 Advanced Settings

easyDCP KDM Generator offers a set of advanced options. To show or hide the advanced options click on “Advanced Settings” button.



Compositions

A list of all available compositions in the digest or DKDM. Only for selected compositions a KDM will be generated. By default all compositions are selected.

KDM Annotation Text

A KDM contains an annotation field that may contain useful information. By default the source composition’s annotation text is used.

Trusted Device List

A Trusted Device List (TDL) defines peripheral equipment (like projectors, sound systems, …) which are connected to the digital cinema server. Those devices may also have certificates for themselves in order to protect the DCP content (footage). To ensure playback add certificates of trusted devices to this list.

Naming Scheme

Naming scheme for the generated KDM(s), Valid place holders are:
%1 Composition Content Title
%2 File name of server certificate

%3 UUID of the KDM
%4 Date and/or Time (see Date Formate below)
%5 Counter if KDM already exsists

Date Format

Date format used for the date place holder %4 in the naming scheme.

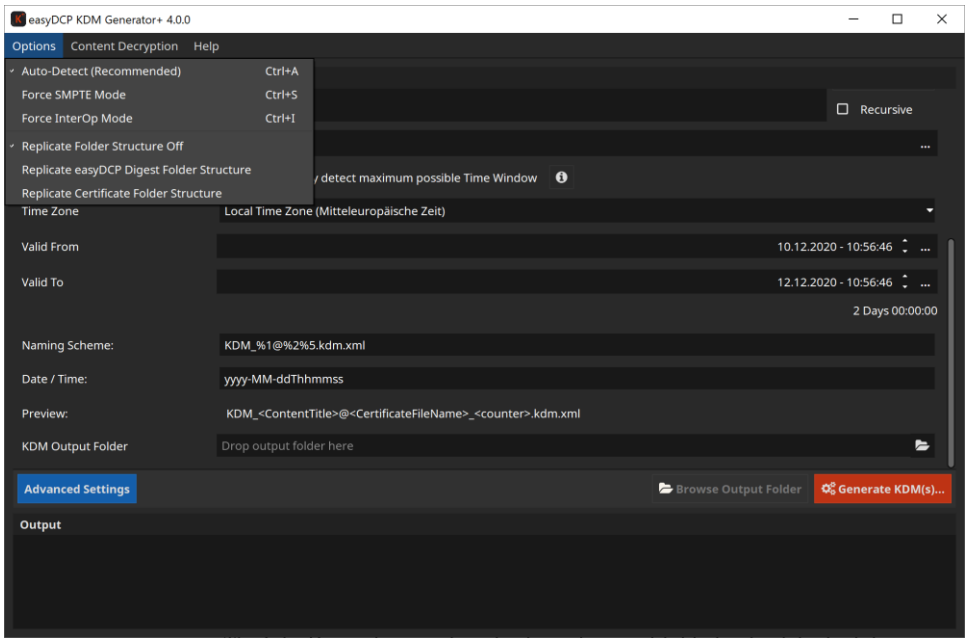
4.1.3 Output section

The output section shows a detailed description of the KDM creation process. It informs the user if all KDMs are generated successfully or if an error occurred and why. Furthermore it lists relevant properties of all server certificates.

To save the result of your process in a text file it is possible to select the content of the output window and copy & paste it to an editor. Otherwise it is not possible to edit the content of the output window.

4.1.4 Options menu

The option menu allows the user to set some additional options of the generated KDMs.



KDM conformity

By default the conformity (i.e. SMPTE vs InterOp) is automatically detected. Under normal circumstances this setting should not have to be changed. If a targeted public server certificate employs the sha256 algorithm, the KDM will be generated in SMPTE mode, otherwise in InterOp mode.

This automatic selection can be overridden by either selecting “Force SMPTE mode” or “Force InterOp mode”. Note: The example signer certificates and any customized certificates obtained from Fraunhofer IIS are sha256 certificates. Therefore even an InterOp KDM will be signed with SMPTE-compliant sha256 signer certificates.

The InterOp mode provides a backward compatibility to obsolete digital cinema servers which use the former InterOp standard. It is not recommended to use this option for current productions.

KDM Signature Setup

See chapter 5 KDM Signature.

Other Options

“Replicate Certificate Folder Structure” specifies if the output folder structure shall be the same as the input directory subfolder structure. This option only

has effect when combined with the “Recursive” server certificate input folder option. E.g. an input folder “ServerCerts\” with a server certificate in a subfolder “ServerCerts\Cinema01\cert.cert” and an output directory “KDM\” will result in following output: “KDM\Cinema01\kdm.xml”.

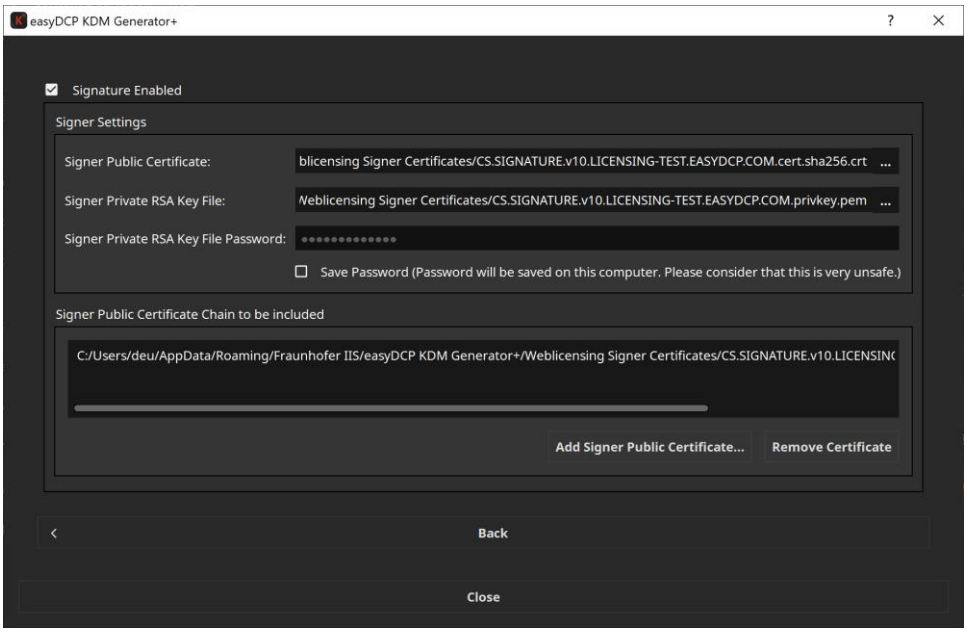
The “Show Signer Password in Output Window” option specifies, if the user password should be displayed with asterisks (*) or in plain-text in the output window. It is recommended to keep this option disabled.

5 KDM Signature

A valid KDM needs to be digitally signed by a signer certificate (leaf). This signer certificate is signed by another authority and that by another, and so forth until the last certificate in the certificate chain signs itself (root). Altering an existing KDM will lead to its invalidation. By inspecting the certificate chain, the KDM’s recipients can decide if they trust the KDM or not.

The demo version of easyDCP KDM Generator+ will automatically generate an example signer certificate set at the first start-up. The signature setup dialog will be pre-filled with the generated signer certificate set.

After licensing easyDCP KDM Generator+ users may import the previously requested license and certificates by using the “Import License & Certificates” option in the help menu (see chapter 3.4). Doing so will automatically fill in the signature setup dialog with the imported signer certificate set. Of course, you may also use this dialog to set up another signature chain.



This dialog shows the currently used digital signature and certificate chain.

Signer Public Certificate

This field specifies the leaf certificate, which starts with "signer" and has a "crt" suffix. The signer certificate contains the signature's public key.

Signer Private RSA Key File

This field specifies a file that contains the signature's private key. The file is encrypted with a user password.

Signer Private RSA Key File Password

The password used to decrypt the signer's Signer Private RSA Key File. The default signature's user password is stored in a text file and read from there by default. When importing a custom chain, the user password may optionally also be stored in a text file. Note that this is potentially harmful as unauthorized access to the password may be possible and your digital signature may get compromised.

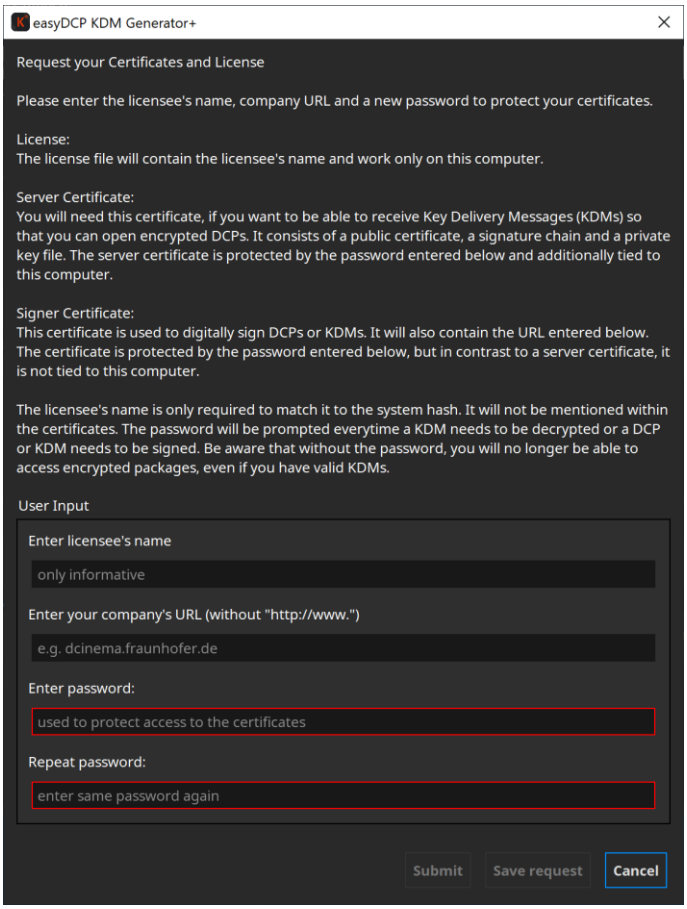
Signer Public Certificate Chain to be included

To complete the signer settings, the certificate chain's intermediate and root certificates need to be imported. To add a certificate, click the button "`Add Signer Public Certificate...`". To remove a certificate from the list, highlight it and click "`Remove Certificate`".

6 Distribution KDM

easyDCP KDM Generator+ can read Distribution KDMs (DKDM). A DKDM is technically identical to a regular KDM. The difference is that it targets another mastering station instead of a cinema server. A scenario would be if a post production house is contracted to create KDMs for a number of cinemas or a whole region or country. The supplier would provide a single DKDM issued to the post production house's easyDCP KDM Generator+ installation. This enables them to supply a new group of recipients with KDMs containing the same keys as the original DKDM. The procedure is identical to generating regular KDMs. The post production house does not even have to have a copy of the DCP itself.

Each installation manages its own private key and public key. The private key is known only to your easyDCP KDM Generator+ installation, whereas the public key is contained in a public server certificate and may be distributed to content providers. When content providers choose to encrypt a DCP, they need to somehow provide the decryption keys (there is one key for every encrypted track file) to the play out system or mastering station. To ensure that no one else is able to read these sensitive decryption keys, they are themselves encrypted in a way that only the targeted system is able to decrypt them. To do this, the content provider will need the recipient’s public server certificate (export certificate with ‘F7’). This encrypted message is called a Key Delivery Message (KDM). When the KDM does not target a digital cinema server, but rather another mastering station in the post-production or distribution chain, it is referred to as a Distribution KDM (DKDM). easyDCP KDM Generator+ does not keep loaded DKDMs in a repository.



When the easyDCP KDM Generator+ demo is first started, it will create a new random private key as well as a public server certificate. The certificate is digitally signed by four other certificates. These certificates are referred to as a certificate chain and this certificate chain, even though already included in the public server certificate, is additionally saved in a separate file. The certificate's critical private key is not only protected by a user password, but it is also asynchronously encrypted to ensure maximum security of encrypted DCP content. Likewise, if the user chooses to store their password for convenience, the saved data still needs to be asynchronously decrypted. The user password needs to have 8 to 12 letters and **cannot be changed after it was created**. The user will be prompted to specify a password when the application first launches.

The commercial edition, on the other hand, does not auto-generate certificates. Instead certificates are requested and imported with the "Request License & Certificates" and "Import License & Certificates" option in the help menu. These certificates are meant for commercial use as they state the licensee's URL and have a unique serial number that links the certificates to the license. Such certificates are tied to the machine's easyDCP system hash. When the license should need to be migrated to another machine, a new certificate set will have to be requested.

All mentioned files are stored in the user application data folder's certificates subfolder (see Application Data and Settings). Hence, the OS user management can be used to maintain multiple sets of certificates. In order to easily determine which files belong together, they are each identified by a unique ID. The ID of the set that is currently used by easyDCP KDM Generator+ is also listed in the "about" dialog (hit 'F6').

- easydcpkdmgen_<ID>.privkey.pem contains the encrypted private key
- easydcpkdmgen_<ID>.cert.sha256.crt is the public server certificate
- easydcpkdmgen_<ID>.chain.sha256.pem contains the certificate chain
- easydcpkdmgen_<_<ID>.privkey.passwd contains the encrypted user password

When easyDCP KDM Generator+ is uninstalled, none of these files will be removed. If the user password file (*.passwd) is manually deleted, the user will simply be prompted for the password again the next time a DKDM is loaded.

In the demo version, if any of the other three files are removed, all remaining files will be renamed (to <original filename>.bak) and a new private key along with new certificates will be created. The user will also be asked to specify a new password.

7 Using the command line program

Apart of using the graphical user interface it is also possible to generate KDMs from the command line. This is handy in automatized environments or for embedding easyDCP KDM Generator in large workflows.

In Windows, the standard easyDCP KDM Generator.exe cannot directly print to the command line. Instead call easyDCP KDM Generator.com. On Mac, there is no such limitation.

To print all available arguments and flags, start easyDCP KDM Generator from the command line with the `-h` option.

7.1 Parameters

```
C:\Program Files\Fraunhofer IIS\easyDCP KDM Generator+ 4.0.0\bin>"easyDCP KDM
Generator+.com" -h

usage: easyDCP KDM Generator+ -d <DistributionKDMFile> -m
<ServerPrivateKeyFilePassword> -cpl <CplSelection> -i
<ServerCertificatesInputFolder|ServerCertificate> [-recursive] -l
<TrustedDeviceListCertificates, TrustedDeviceListThumbprints> -o
<OutputFolder> [-replicate-structure] -tz <TimeZone> -s <ValidityStartTime> -
e <ValidityEndTime> -v <ValidityPeriodInDays> -k <SignerPrivateKeyFile> -p
<SignerPrivateKeyFilePassword> -a <AnnotationText> [-t|-r] -w -n -h -u

-d       DCP Digest File or Distribution KDM file (*.dcpdig, *.xml).
         The DCP Digest / Distribution KDM file holds the encryption
         keys for a specific DCP or composition thereof.
         WARNING: DIGEST FILES HOLD THE KEYS TO DECRYPT DCPS AND SHALL
         NOT BE DELIVERED TO A THEATER!
-cpl     Create KDM(s) only for a subset of composition containing the given
         string in thir title or uuid.
         If this pramaeter is not given KDM(s) will be generated
         for all composition.
-username
         easyDCP login username
-password
         easyDCP login password
-m       Password for the Server Certificate Private Key File,
         which is required to decrypt Distribution KDM(s).
-u       Save the password for decrypting your Distribution KDM(s).
         Please consider that this is very unsafe.
-i       Server Certificate input file or folder holding the
         Server Certificate(s) for which KDM(s) will be created.
-recursive
         Look for Server Certificates in subfolders also.
-l       Server Certificate input filenames or thumbprints of
         Trusted Device List (TDL) for which KDM(s) will be created.
         Filenames or thumbprints may be mixed and comma separated.
         If no input is given, the "assume trust" thumbprint
         "2jmj7l5rSw0yVb/vlWAYkK/YBwk=" will be added.
         NOTE: The parameters "-t" and "-l" are mutually exclusive.
-o       Path to output folder where the KDMs will be stored after creation.
-replicate-structure
         If the parameter -recursive is given, subfolder structure of the
         input Server Certificate directory will be replicated
         in the output directory.
         Otherwise this parameter has no effect.
```

```
-p       Password for the Signer Certificate Private Key File.
-tz      Target time zone for the KDM(s). The given date and times
         will be interpret as local date and times of this time zone.
         If no time zone is given local time zone of system will be used.
         To print a list of all valid time zones use -tz list .
         If times are given in UTC, this parameter is invalid.
-s       Start Time (as local or UTC time) for the validity period of the
KDM.
         Following format expected: "YYYY-MM-DD[Thh:mm:ss[<+|->hh:mm]]"
         (e.g. 2020-12-10T11:12:48).
-e       End Time (as local or UTC time) for the validity period of the KDM.
         Following format expected: "YYYY-MM-DD[Thh:mm:ss[<+|->hh:mm]]"
         (e.g. 2020-12-12T11:12:48).
-v       Validity period in days from now on (e.g. 2)
-a       Annotation Text for the KDM. If no Annotation Text is given, the
         Content Title of the Composition Playlist (CPL) is used.
-t       Enforces "INTEROP" mode. NOTE: This setting is for backward
         compatibility only and is not recommended.
-r       Enforces "SMPTE" mode. NOTE: The parameters "-t" and
         "-r" are mutually exclusive. It is recommended to omit
         both switches in order to auto-detect the conformity based
         on the targeted server certificates.
-naming-scheme
         Placeholders are:
         %1: CPL Content Title
         %2: Certificate File Name
         %3: KDM UUID
         %4: Date, user defined date and/or time format
         %5: Counter
-naming-scheme-date-format
         Date format for naming scheme.
-h -?  -help
          Shows Help and Licensing Information.
```

7.2 Date and Time Specification

The command line allows more advanced date and time specifications for the *valid from* and *valid to* times. The parameters `-s` and `-e` are used for a concrete date and/or time. The values can be a date only, a date and time or a date and time with time zone offset. Date and time without time zone offset is interpreted as a local time. If no time zone is specified with the parameter `-tz` the current configured local time of the operating system will be used. Date and time with time zone offset will always be interpreted as UTC time. In this case the parameter `-tz` is invalid. To print a list of all available time zones use the parameter `-tz` with list, e.g. `-tz list`.

The parameter `-v` is used to specify a time-window in days beginning at the given start time. The resulting time-window of the generated KDM may deviate from the amount of specified days by plus or minus one hour. This is because easyDCP KDM Generator+ takes daylight saving time (DST) into account. Therefore the local end time will always be the same as the local start time regardless if the start or end date is DST. E.g. if the start time is 13:30:00 local time, the end time will also be 13:30:00 local time.

8 Creating proper Digest Files

To generate your own digest file it is recommended to use an already existing digest file as a template. Open the file in an ordinary text editor. Afterwards it is possible to edit the specified fields with your own data and information.

If you have issues with an easyDCP Digest file, please contact the support. Detailed contact information can be found in chapter 10 (Contact).

9 Frequently Asked Questions (FAQs)

What does the KDM workflow look like with the easyDCP KDM Generator+?

easyDCP Creator+ generates a proprietary DCP digest file along with each encrypted DCP. This digest file contains all encrypted track files' keys. Whenever you want to generate KDMs, you can load this digest file into easyDCP KDM Generator+. All you need to do is collect your recipients' public server certificates and put them into a local folder. Use only the "cert.sha256" files. Usually, they have either a *.crt or *.pem suffix. In easyDCP KDM Generator, you merely need to load the digest file, point to the folder with the server certificates and specify the start and end dates of the KDMs' validity period. Upon clicking the "Generate KDM…" button, easyDCP KDM Generator+ will create KDMs for all server certificates in a single job. Note, that a digest file may contain multiple compositions, but a KDM only ever contains keys for a single composition. Thus, easyDCP KDM Generator+ will create <number of compositions in digest file> x <number of server certificates in folder> KDMs. Using the full version of easyDCP Player+, you can test the whole procedure by issuing a KDM to your easyDCP Player+'s public server certificate. By the way, this procedure is the same when you want to issue a Distribution KDM (DKDM) for your client's mastering station.

The demo version of easyDCP KDM Generator+ is restricted in that it only generates KDMs with a maximum validity of 48 hours, starting from the time when the KDM is generated.

Where can I get the server certificates needed to create KDMs?

This is different in every country. We can’t send you the certificates. The best way is asking the cinema owner directly. They should either have the certificates of the projection system in their screening rooms themselves or tell you the model and serial number. If they give you the model and serial number, you need to contact the manufacturer and ask for access to their database. This is often a password protected ftp server. We can't give you the access details. For now, it is a good idea to maintain your own personal collection of certificates so you do not need to repeat this procedure for every job.

Why are there so many public certificates for a single cinema server?

Usually, on the cinema server manufacturers' ftp servers you can find both the public server certificate and the signature chain that was used to sign the certificate. If you decide to trust the certificate by examining the signature certificate chain, you only need the server certificate to create a KDM. It has either a *.pem or *.crt suffix. easyDCP KDM Generator+ will accept either, but do not use both. Furthermore, there will be pairs of certificate and chain that

state "mpeg", "sha1" and "sha256". Like with DCPs, there are SMPTE and InterOp KDMs. Almost all modern servers prefer SMPTE KDMs. It is recommended to use the “Auto-detect” conformity option in order to infer the conformity from the targeted public server certificate (i.e. SMPTE for "sha256" certificates and InterOp for „sha1“ certificates).

Only if you know your recipient only accepts InterOp KDMs, use the "sha1" certificate.

How can I generate my own digital signature to sign my DCPs or KDMs?

Digital signatures are used to authenticate content. You can sign both DCPs and KDMs. For customers of easyDCP KDM Generator+ we offer to generate signature chains for free.

We would only need to know your URL (without www), which is stated within the signature, e.g. "fraunhofer.de". Refer to chapter 5 for a guide on how to import the certificate chain.

My client wants me to send an encrypted DCP along with a Distribution KDM (DKDM). What is he talking about?

A Distribution KDM is technically identical to a regular KDM. The difference is that it targets another mastering station instead of a cinema server. A scenario would be if a post production house is contracted to add subtitles to a finished DCP. The supplier would send a copy of the encrypted DCP and issue a DKDM to the post production house's mastering station, enabling them to decrypt and alter the DCP. You can generate a DKDM with easyDCP KDM Generator+. The procedure is identical to generating a regular KDM.

Can easyDCP KDM Generator issue new KDMs based on a DKDM?

Yes, but only easyDCP KDM Generator+ can. Please refer to chapter 6.

10 Contact

We very much appreciate any feedback or annotations about easyDCP KDM Generator+. In order to enhance the software and to optimize it for your applications, we are looking forward to your cooperation.

If you have any problems or questions, please contact us at the following addresses:

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