

MMS Compiler

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The MMS Compiler is an open-source command-line tool which can be used to generate Multimedia Messaging Service (MMS) files based on a predefined set of input files: text, images, audio, video. This tool can be used in Windows or Linux (x86).

Version 1.0
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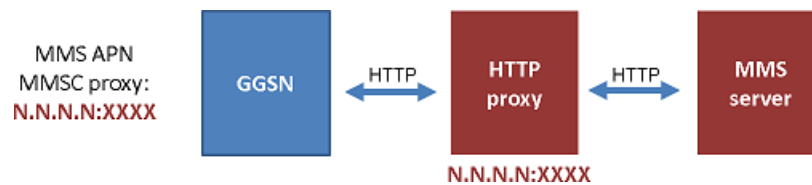
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1. Overview

The format and encoding of the Multimedia Messaging Service (MMS) files is defined in the W@P specifications.^A It is known as "m-retrieve-conf". Most modern mobile phones support the MMS service. The commercial introduction of MMS started in 2002.^B

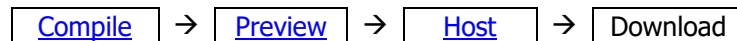
The MMS file encapsulates the multimedia contents (i.e. images, audio, video), the layout and the optional transitions between slides in SMIL format.^C

In order to display the MMS on a handset, the MMS file must be hosted on an HTTP webserver. The main requirement is that the webserver must be accessible through the MMS APN.¹ Usually there is an HTTP proxy between the GGSN² and the HTTP webserver. The proxy can be used for access control (cut off any non-MMS traffic), billing, reporting and so on. The following graphics presents the typical architecture:



If the MNO³ has an MMS Center,⁴ the HTTP proxy is usually part of the platform. Otherwise, a generic web proxy can be used, for example: Squid, HAProxy, Apache (with mod_proxy).

The following chapters describe the typical MMS lifecycle:



¹ Access Point Name (**APN**) settings connect the mobile to the Internet over the carrier's cellular network.

² The Gateway GPRS Support Node (**GGSN**) enables the mobility of the user in the GPRS/UMTS network.

³ The Mobile Network Operator (**MNO**) provides mobile communication services to an end user.

⁴ The carrier's MMS store and forward server is known as the MMS Center (**MMSC**).

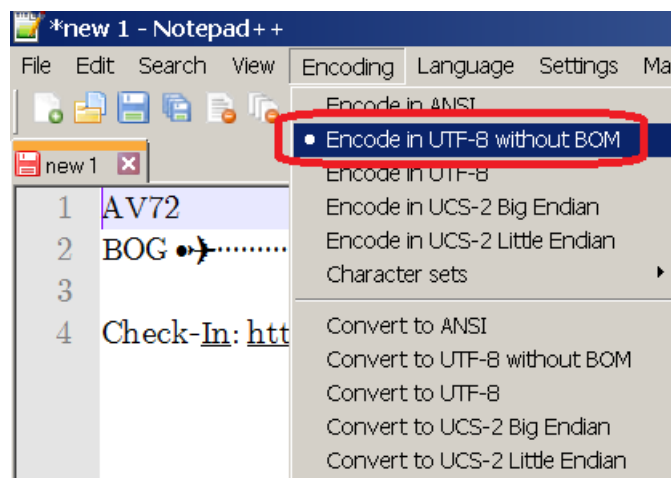
2. Compile

The MMS Compiler features a set of templates with common layouts and contents. Currently the following MMS templates are included:

0. Plain text
1. GIF image + optional text
2. JPEG picture + optional text
3. 3GP video + optional text
4. GIF animation + MIDI track
5. Text with simple [HTML formatting](#)

In order to modify the template contents just edit or replace the files in the `include` subfolder and run `compile.bat` to update the MMS. The same file can be used in Windows and Linux. This file acts as a batch file in Windows and a shell script in Linux. This file contains the source code of the template written as a set of macros for the FASM⁵ preprocessor. The syntax of the macros is described in the FASM Programmer's Manual.^D

The `text.txt` file containing the MMS text may include Unicode characters. This is useful to include icons (☺☹☺) or non-Latin text (中文, кириллица, عربى). In such case it must be saved in UTF-8⁶ format without BOM.⁷ For example, when using Notepad++:⁸



The `subject.txt` and `from.txt` files must not contain Unicode characters.

It is recommended that the `from.txt` file contents match the MMS originating address. In this case, if the user replies to the MMS, the message will be sent to the same address.

⁵ [FASM](#) (*flat assembler*) is a self-hosting free assembler available for multiple platforms.

⁶ [UTF-8](#) is a character encoding standard. It is capable of encoding Unicode characters.

⁷ The *Byte Order Mark (BOM)* is a magic number at the start of a text stream. It can be used to specify the byte order, endianness, among other characteristics.

⁸ [Notepad++](#) is a free text editor for Windows.

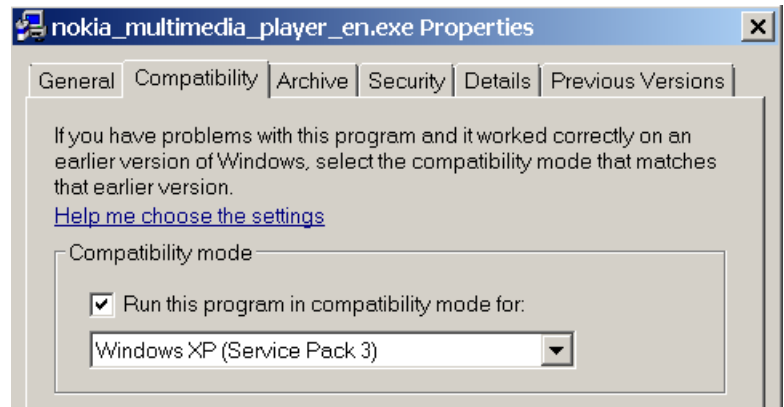
6. Preview

The Nokia Multimedia Player⁹ is a freeware tool for Windows, which can be used to preview the MMS messages.

It shall work fine in Windows XP or earlier.

In order to install it in Windows 7 it is mandatory to enable compatibility with Windows XP SP3 as shown in the screenshot.

Currently this tool is owned by Microsoft, who acquired the Nokia handset business. Unfortunately, the tool is not supported any longer and there is no simple way to install it in newer Windows versions. If you have Windows 10 consider using an emulator or preview the MMS in a real handset instead.



The Nokia Multimedia Player has the following known limitations:

- MPEG/MP4 videos are not displayed
- Animated GIFs are displayed as static images
- GIFs are displayed without transparency
- HTML is rendered as plain text

If you find a better free tool to test or preview the MMS, please let us know!

⁹ The official download page is no longer available, but there are multiple mirror sites.

7. Host

The MMS server can be a generic webserver like Apache Tomcat. If a generic webserver is used to host MMS files, the following MIME type must be configured for the MMS file extension:

```
application/vnd.wap.mms-message
```

The MMS server must be accessible through plain HTTP without SSL because some old handsets don't support downloading MMS through HTTPS. It is recommended to avoid URL redirects (i.e. URL shortening) because many handsets don't support this feature. Most handsets don't display any error if the MMS download fails. So, it's hard to troubleshoot any issues at the MMS download stage. That's why it is recommended to keep the communication between the HTTP proxy and the MMS server as simple and direct as possible.



If you want to test that the MMS download is working fine through the HTTP proxy, the `wget` command can be used, for example:

```
http_proxy=N.N.N.N:XXXX wget -d 'http://X.X.X.X:YYYY/sample.mms'
```

The value of **N.N.N.N:XXXX** is the HTTP proxy IP and port. It's the same value defined in the MMS APN. The value of **X.X.X.X:YYYY** is the address of the webserver where the MMS file is hosted.

8. HTML Formatting

MMS with hypertext markup is generally supported in iOS and some Android devices:^E

	iOS 3 and later
	MMS with HTML is supported in the AOSP version of the Messages app. The more recent Google Messages app (featuring compatibility with RCS) doesn't support MMS with HTML.

Other MMS clients may render the HTML tags as plain text!

A basic subset of HTML tags and attributes is supported by the Android MMS client:

- `<a>` (supports attribute "href")
- ``
- `<big>`
- `<blockquote>`
- `
`
- `<cite>`
- `<dfn>`
- `<div>`
- ``
- `` (supports attributes "color" and "face")
- `<i>`
- ``
- `<p>`
- `<small>`
- ``
- `<sub>`
- `<sup>`
- `<tt>`
- `<u>`

It's not possible to include JavaScript, CSS, forms and other advanced HTML features.

Known limitations:

Anchors / Hyperlinks

Make sure that the "href" contains a valid schema prefix ("http://" or "mailto:"). If no schema is specified the MMS client may crash.

Images

Even though the `` tag is supported it is not possible to include an image.

References

- ^A [«Multimedia Messaging Service Encapsulation Protocol Version 1.1»](#), Open Mobile Alliance (2002)
- ^B Gwenaél Le Bodic (2005). *«Mobile Messaging Technologies and Services: SMS, EMS and MMS»* (2nd ed.) John Wiley & Sons. ISBN 0-470-01143-2
- ^C [«Synchronized Multimedia Integration Language \(SMIL 2.1\)»](#), W3C (2005-12-13)
- ^D Tomasz Grysztar (2022-01-04). [«Flat Assembler 1.73 Programmer's Manual»](#).
- ^E Victor Celer (2020-01-01). [«MMS with HTML markup»](#), CelerSMS. ISSN 2745-2336