

MIME media-types for Print Formats

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Abstract

This memo defines media-type designators for various printer control file formats which are popularly used in the industry, and proposes a means to correlate the printer interpreter types as specified in the Printer MIB ([RFC-1759](#)).

1. Overview

MIME media-types describe the format of MIME objects, which are used in internet email (SMTP), web applications (HTTP), and others. MIME media types such as application/postscript and text/plain are examples of print formats which are interpreted by many printers. However, there are many other file formats which are frequently used with printers which are not supported by MIME media-type designations. This document proposes a set of MIME media-type designations for these popular print file formats. The result of this work should support transport of these printer formats to enable internet printing scenarios.

2. Definition Method

The printer MIB ([RFC-1759](#)) is used as a source of much of the information in this document. Each section of this document is formatted according to the MIME media-type

registration procedure ([RFC-1590](#)).

[RFC 1759](#) (_Printer MIB_) contains a group, `PrtInterpreterLang`, with objects that identify various file formats and protocols which are used to submit jobs and interact with print equipment. The purpose for this list is to allow a network administrator to garner information regarding the capabilities or view and set current settings of a printer peripheral.

MIME (Multimedia Internet Mail Extensions) contain a registration method and registry for defining various media-types (or `_data formats_`). The purpose of this registration method and registry is to allow transfer of file data via email MIME body parts and allow the receiver to handle each part in a graceful manner.

The ability to reference file formats is important in the Multifunction product area as we are submitting jobs to dial-up or email-remote printers. The lack of a single registry has been a key problem in this area.

[2.1](#) OBSERVATIONS

The MIME registry is targeted at `_data formats_` and does not specify protocols which would not be transportable using internet store-and-forward mail technology. Therefore, some of the objects contained in `prtInterpreterLang` group would probably not be appropriate for the MIME registry. For example, TIPSI (IEEE-1284.1) is a good candidate for this characteristic since TIPSI requires bidirectional communication to operate. Such formats may be compatible with certain limitations. This is the way that Postscript is treated. This document will not attempt to sanitize any formats that require a special protocol.

[RFC-1759](#) does not specify exact versions as a part of the `prtInterpreterLang` group, especially when the language can self-identify or gracefully handle various generations of the same format. In some cases, a given interpreter will not gracefully handle the various generations, and yet the version is not specified.

There may be some need to refine [RFC-1759](#) or other documents as a result of completing this work.

[3](#). Method to handle Vendor-specific formats

It is generally the case that the Interpreter Languages as defined by [RFC-1759](#) are vendor-specific and are not ietf or public standards. The MIME designation will be generated using a standard "recipe" to allow easy correlation with [RFC-1759](#), without unduly burdening the

MIB or the MIME media-types with absolute synchronization. The general recipe is to form the MIME media type as follows (Angle brackets are to group syntactical elements and do not occur in the string; square brackets indicates optional):

```
vnd.<vendor name or initials>-<language family name as
per langXXXX in MIB>[;Version=<Level from MIB (lower
case)>]
```

For example, for LangPCL, Level 3, the resulting string is:

```
application/vnd.hp-pcl;version=3
```

4. Prior Generations also accepted by the media-type

If a given device claims that it can handle a given printer media-type by examining the MIB prtInterpreterLang object, it may also be able to handle other media-types of prior generations. A maker of a MIME object should designate the minimum media-type designation possible. A device should claim support in the device MIB of the latest generation of a given media-type which has several generations.

This document includes a profile which defines the exact MIB field contents and their relation to the proposed MIME types. The use of the recipe to form the MIME media-type designation will allow the vendor that is actually responsible for the given format to enhance the format without revision of this profile.

4. Summary of the printer media-types

In the table below, the term "Also Accepted" indicates that the device would also accept another generation of the format or another format by inspecting the object. There is usually no use in referencing more than a single prior generation since it can also reference other generations, however, in some cases, more than one language is lumped together with some form of automatic sensing.

In the table below, the columns are defined as follows:

"Family"	prtInterpreterLangFamily string
"Code"	numeric entry of Printer MIB
"Level"	prtInterpreterLangLevel string

If a media-type string is defined, a prior generation or other format which is also parsed and interpreted by this interpreter if the printer MIB indicates this format is supported.

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Family	Code	Level	media-type (Prior Generation)	Notes
=====	=====	=====	=====	=====
other	1	x		NOTE 1
langPCL	3	3	vnd.hp-pcl;version=3	
langPCL	3	4	vnd.hp-pcl;version=4 (vnd.hp-pcl;version=3)	
langPCL	3	5	vnd.hp-pcl;version=5 (vnd.hp-pcl;version=4) (vnd.hp-hpgl;version=2)	
langPCL	3	5e	vnd.hp-pcl;version=5e (vnd.hp-pcl;version=5)	
langHPGL	4	2	vnd.hp-hpgl;version=2	
langPJL	5	1	vnd.hp-pjl;version=1	
langPS	6	1	postscript;version=1	
langPS	6	2	postscript;version=2 (postscript;version=1)	
langPS	6	3	postscript;version=3 (postscript;version=2)	
langPSPrinter	42		vnd.adobe-PSPrinter	NOTE 2
langIPDS	7		vnd.ibm-ipds	NOTE 2
langPPDS	8		vnd.lexmark-ppds	
langEscapeP	9		vnd.epson-escapep	
langEpson	10	80	vnd.epson-fx;version=80	NOTE 3
langEpson	10	100	vnd.epson-fx;version=100	NOTE 3
langDDIF	11		vnd.dec-dx	
langInterpress	12			NOTE 1
langISO6429	13		text/iso6429	
langLineData	14		text/linedata	
langMODCA	15		vnd.ibm-modca	NOTE 2
langREGIS	16		vnd.dec-regis	
langSCS	17			NOTE 1
langSPDL	18		iso10180	
langTEK4014	19		vnd.tek-4014	
langPDS	20			NOTE 1
langIGP	21			NOTE 1
langCodeV	22		vnd.qms-codev	
langDSCDSE	23			NOTE 1
langWPS	24			NOTE 1
langLN03	25		vnd.dec-ln03	
langCCITT	26		image/g3fax	
langQUIC	27		vnd.qms-quic	
langCPAP	28		vnd.dec-cpap	
langDecPPL	29		vnd.dec-ppl	
langSimpleText	30		text/plain	NOTE 4
langNPAP	31			NOTE 1

langDOC	32	vnd.qms-doc	NOTE 2
langimPress	33	vnd.qms-impress	
langPinwriter	34	vnd.nec-pinwriter	
langNEC201PL	36	vnd.nec-201pl	
langAutomatic	37		NOTE 5
langPages	38	vnd.ibm-pages	

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langLIPS	39	vnd.cie-lips
langTIFF	40	image/tiff
langDiagnostic	41	octet-stream
langCaPSL	43	vnd.canon-psl
langEXCL	44	vnd.talaris-excl
langLCDS	45	vnd.xerox-lcds
langXES	46	vnd.xerox-xes

=====

NOTES

- 1: No media-type definable.
- 2: Is this really mappable?
- 3: Level is just a guess.
- 4: Need charset
- 5: automatic will need to list the media-types accepted.

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APPENDIX 1: Media-Type Registrations

The following are proposed registrations of media-types required for those printer interpreters listed in [RFC-1759](#). Not all of these types may be worthwhile additions as MIME media-types. At this time, there are many missing published specifications and contact names.

=====

Media Type name: application
Media subtype name: vnd.hp-pcl
Required parameters: none
Optional parameters:
 version=3 indicates HP PCL-3 (default)
 version=4 indicates HP PCL-4
 version=5 indicates HP PCL-5
 version=5e indicates HP PCL-5e
Encoding considerations:
 base-64 preferred
 (is quoted-printable a good choice?)
Security considerations:
 Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.
Published specification:
 HP-PCL5: PCL5 Printer Language Technical Reference Manual, HP Manual Part No. 5961-0888.
Contact:

=====

Media Type name: application
Media subtype name: vnd.hp-pgl
Required parameters: none
Optional parameters:
 version=2 indicates HPGL/2
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.
Published specification:
 HPGL manual
Contact:

=====

NOTE the following is an amendment of an existing media-type since the "version=#" parameter is added as an optional parameter.

Media Type name: application

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Media subtype name: postscript
Required parameters: none
Optional parameters:
 version=1 indicates Postscript Level 1 (default)
 version=2 indicates Postscript Level 2
 version=3 indicates Postscript Level 3
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior. See RFC ???? for cautionary statements with
regard to the use of Postscript.
Published specification:
Postscript Language Reference Manual, Adobe Systems Inc.,
ISBN 0-201-10174-2
Postscript Language Level - 2 Reference Manual, Adobe
Systems Inc.
Contact:

=====

Media Type name: application
Media subtype name: vnd.adobe-PSPrinter
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior.
Published specification:
Contact:

=====

Media Type name: application
Media subtype name: ibm-ipds
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior.

Published specification:

Contact:

=====

Media Type name: application

Media subtype name: vnd.lexmark-ppds

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Required parameters: none

Optional parameters: none

Encoding considerations:

base-64

Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

=====

Media Type name: application

Media subtype name: epson-escapep

Required parameters: none

Optional parameters: none

Encoding considerations:

base-64

Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

=====

Media Type name: application

Media subtype name: lexmark-ppds

Required parameters: none

Optional parameters: none

Encoding considerations:

base-64

Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

=====

Media Type name: application

Media subtype name: epson-fx

Required parameters: none

Optional parameters:

version=80 indicates fx-80
version=100 indicates fx-100

Encoding considerations:

base-64 preferred
(is quoted-printable a good choice?)

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Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

=====

Media Type name: application

Media subtype name: vnd.dec-dx

Required parameters: none

Optional parameters: none

Encoding considerations:

base-64

Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

=====

Media Type name: text

Media subtype name: iso6429

Required parameters: none

Optional parameters: none

Encoding considerations:

quoted printable

Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

ISO-6429

Contact:

=====

Media Type name: text

Media subtype name: linedata

Required parameters: none

Optional parameters: none

Encoding considerations:

quoted printable

Security considerations:

Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior.
Published specification:
Contact:

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Media Type name: application
Media subtype name: vnd.ibm-modca
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior.
Published specification:
Contact:

=====

Media Type name: application
Media subtype name: vnd.dec-regis
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior.
Published specification:
Contact:

=====

Media Type name: application
Media subtype name: iso10180
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior.
Published specification:
 ISO-10180
Contact:

=====

Media Type name: application

Media subtype name: vnd.tek-4014
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64

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Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

=====

Media Type name: application

Media subtype name: vnd.qms-codev

Required parameters: none

Optional parameters: none

Encoding considerations:

base-64

Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

=====

Media Type name: application

Media subtype name: dec-ln03

Required parameters: none

Optional parameters: none

Encoding considerations:

base-64

Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

=====

Media Type name: application

Media subtype name: vnd.qms-quic

Required parameters: none

Optional parameters: none

Encoding considerations:

base-64

Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.
Published specification:
Contact:

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Media Type name: application
Media subtype name: vnd.dec-cpap
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior.
Published specification:
Contact:

=====

Media Type name: application
Media subtype name: vnd.dec-ppl
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior.
Published specification:
Contact:

=====

Media Type name: application
Media subtype name: vnd.qms-doc
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior.
Published specification:
Contact:

=====

Media Type name: application
Media subtype name: vnd.qms-impress

Required parameters: none
Optional parameters: none
Encoding considerations:
base-64

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Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

=====

Media Type name: application

Media subtype name: vnd.nec-pinwriter

Required parameters: none

Optional parameters: none

Encoding considerations:

base-64

Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

=====

Media Type name: application

Media subtype name: vnd.nec-201pl

Required parameters: none

Optional parameters: none

Encoding considerations:

base-64

Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

=====

Media Type name: application

Media subtype name: vnd.ibm-pages

Required parameters: none

Optional parameters: none

Encoding considerations:

base-64

Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.
Published specification:
Contact:

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Media Type name: application
Media subtype name: vnd.cie-lips
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior.
Published specification:
Contact:

=====

Media Type name: application
Media subtype name: vnd.canon-psl
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior.
Published specification:
Contact:

=====

Media Type name: application
Media subtype name: vnd.talaris-excl
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64
Security considerations:
 Delivery of this format to a printer which is not
capable of parsing the format may result in poor printer
behavior.
Published specification:
Contact:

=====

Media Type name: application

Media subtype name: vnd.xerox-lcds
Required parameters: none
Optional parameters: none
Encoding considerations:
 base-64

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Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

=====

Media Type name: application

Media subtype name: vnd.xerox-xes

Required parameters: none

Optional parameters: none

Encoding considerations:

base-64

Security considerations:

Delivery of this format to a printer which is not capable of parsing the format may result in poor printer behavior.

Published specification:

Contact:

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