



CUPS Implementation of IPP

Introduction

CUPS implements IPP/2.1 and the operations and attributes defined in the "IPP: Job and Printer Set Operations", "IPP/1.1: Output-bin Attribute Extension", and "IPP/1.1: finishings 'fold', 'trim', and 'bale' attribute values extension" specifications.

CUPS also provides 16 new operations and many new attributes to support multiple IPP printers and printer classes on a single host.

IPP URIs

CUPS supports the "http", "https", and "ipp" schemes. The following resource names are used:

scheme://hostname:port/

Can be used for all "get" operations and for server subscriptions.

scheme://hostname:port/admin/

Used for all administrative operations.

scheme://hostname:port/classes/name

Specifies a printer class.

scheme://hostname:port/jobs/id

Specifies a job.

scheme://hostname:port/printers/name

Specifies a printer.

So a typical printer URI would be "ipp://foo.bar.com/printers/LaserJet". In addition, the CUPS server also supports normal browser access via "http://hostname:port/" and "https://hostname:port/".

CUPS IPP Operations

CUPS provides 16 extension operations in addition to most of the standard IPP and registered extension operations:

Operation Name	CUPS Code		Brief Description
Print-Job	1.0	0x0002	Print a file.
Validate-Job	1.0	0x0004	Validate job attributes.
Create-Job	1.1	0x0005	Create a print job.
Send-Document	1.1	0x0006	Send a file for a print job.
Cancel-Job	1.0	0x0008	Cancel a print job.
Get-Job-Attributes	1.0	0x0009	Get job attributes.
Get-Jobs	1.0	0x000A	Get all jobs.
Get-Printer-Attributes	1.0	0x000B	Get printer attributes.
Hold-Job	1.1	0x000C	Hold a job for printing.

Hold-Job	1.1	0x000C	Hold a job for printing.
Release-Job	1.1	0x000D	Release a job for printing.
Restart-Job	1.1	0x000E	Restarts a print job.
Pause-Printer	1.0	0x0010	Pause printing on a printer.
Resume-Printer	1.0	0x0011	Resume printing on a printer.
Purge-Jobs	1.0	0x0012	Purge all jobs.
Set-Job-Attributes	1.1	0x0014	Set attributes for a pending or held job.
Create-Printer-Subscription	1.2	0x0016	Creates a subscription associated with a printer or the server.
Create-Job-Subscription	1.2	0x0017	Creates a subscription associated with a job.
Get-Subscription-Attributes	1.2	0x0018	Gets the attributes for a subscription.
Get-Subscriptions	1.2	0x0019	Gets the attributes for zero or more subscriptions.
Renew-Subscription	1.2	0x001A	Renews a subscription.
Cancel-Subscription	1.2	0x001B	Cancels a subscription.
Get-Notifications	1.2	0x001C	Get notification events for <code>ippget</code> subscriptions.
Enable-Printer	1.2	0x0022	Accepts jobs on a printer.
Disable-Printer	1.2	0x0023	Rejects jobs on a printer.
CUPS-Get-Default	1.0	0x4001	Get the default destination.
CUPS-Get-Printers	1.0	0x4002	Get all of the available printers.
CUPS-Add-Modify-Printer	1.0	0x4003	Add or modify a printer.
CUPS-Delete-Printer	1.0	0x4004	Delete a printer.
CUPS-Get-Classes	1.0	0x4005	Get all of the available printer classes.
CUPS-Add-Modify-Class	1.0	0x4006	Add or modify a printer class.
CUPS-Delete-Class	1.0	0x4007	Delete a printer class.
CUPS-Accept-Jobs	1.0	0x4008	Accept jobs on a printer or printer class.
CUPS-Reject-Jobs	1.0	0x4009	Reject jobs on a printer or printer class.
CUPS-Set-Default	1.0	0x400A	Set the default destination.
CUPS-Get-Devices	1.1	0x400B	Get all of the available devices.
CUPS-Get-PPDs	1.1	0x400C	Get all of the available PPDs.
CUPS-Move-Job	1.1	0x400D	Move a job to a different printer.
CUPS-Authenticate-Job	1.2	0x400E	Authenticate a job for printing.
CUPS-Get-PPD	1.3	0x400F	Get a PPD file.
CUPS-Get-Document	1.4	0x4027	Get a document file from a job.

Operations

The following sections describe the operations supported by CUPS. In the interest of brevity, operations which use only the standard IPP attributes are not described.

Print-Job Operation

The `Print-Job` operation (0x0003) is defined as:

The PRINT-JOB operation (0x00002) prints a file.

Print-Job Request

The following groups of attributes are supplied as part of the Print-Job request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri):

The client MUST supply a URI for the specified printer.

Group 2: Job Template Attributes

"auth-info" (1setOf text(MAX)); CUPS 1.3/Mac OS X 10.3

The client OPTIONALLY supplies one or more authentication values as specified by the "auth-info-required" attribute.

"job-billing" (text(MAX)); CUPS 1.1

The client OPTIONALLY supplies a billing string that is logged with the page accounting information.

"job-sheets" (1setof type3 keyword | name(MAX)); CUPS 1.1

The client OPTIONALLY supplies one or two banner pages that are printed before and after any files in the print job. The name of "none" is reserved to indicate that no banner page should be printed. If the client does not specify this attribute then the value of the "job-sheets-default" printer object attribute is used.

Note: Standard IPP only allows specification of a single job-sheets attribute value.

"media" (1setof type3 keyword | name(MAX)):

The client OPTIONALLY supplies one or more media attributes specifying the size, type, source, and color of the output media. If the client does not specify this attribute then the value of the "media-default" printer object attribute is used.

Note: Standard IPP only allows specification of a single media attribute value.

Other Job Template Attributes

The Print-Job request is followed by a file to be printed.

Print-Job Response

The following groups of attributes are send as part of the Print-Job Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

Group 2: Job Attributes

Standard Job Attributes

Group 3: Unsupported Attributes (status=client-err-attributes-or-values-not-supported)

Group 0: Unsupported Attributes (status: client error: attributes or values not supported)

auth-info-required (1setOf Type2 keyword)
The required authentication information.

Create-Job Operation

CUPS 1.1

The Create-Job operation (0x0005) creates a new, empty print job.

Create-Job Request

The following groups of attributes are supplied as part of the Create-Job request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri):

The client MUST supply a URI for the specified printer.

Group 2: Job Template Attributes

"auth-info" (1setOf text(MAX)): [CUPS 1.3/Mac OS X 10.5](#)

The client OPTIONALLY supplies one or more authentication values as specified by the "auth-info-required" attribute.

"job-billing" (text(MAX)): [CUPS 1.1](#)

The client OPTIONALLY supplies a billing string that is logged with the page accounting information.

"job-sheets" (1setof type3 keyword | name(MAX)): [CUPS 1.1](#)

The client OPTIONALLY supplies one or two banner pages that are printed before and after any files in the print job. The name of "none" is reserved to indicate that no banner page should be printed. If the client does not specify this attribute then the value of the "job-sheets-default" printer object attribute is used.

Note: Standard IPP only allows specification of a single job-sheets attribute value.

"media" (1setof type3 keyword | name(MAX)):

The client OPTIONALLY supplies one or more media attributes specifying the size, type, source, and color of the output media. If the client does not specify this attribute then the value of the "media-default" printer object attribute is used.

Note: Standard IPP only allows specification of a single media attribute value.

Standard Job Template Attributes

Create-Job Response

The following groups of attributes are send as part of the Create-Job Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

Group 2: Job Attributes

Standard Job Attributes

Group 3: Unsupported Attributes (status=client-error-attributes-or-values-not-supported)

auth-info-required (1setOf Type2 keyword)
The required authentication information.

Cancel Job Operation

The Cancel-Job operation (0x0008) cancels the specified job. CUPS 1.4 adds a new `purge-job` (boolean) attribute that allows you to purge both active and completed jobs, removing all history and document files for the job as well.

Cancel-Job Request

The following groups of attributes are supplied as part of the Cancel-Job request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri) and "job-id" (integer)

OR

"job-uri":

The client MUST supply a URI for the specified printer and a job ID number, or the job URI.

CUPS 1.4/Mac OS X 10.6 "purge-job" (boolean):

The client OPTIONALLY supplies this attribute. When true, all job files (history and document) are purged. The default is false, leading to the standard IPP behavior.

Cancel-Job Response

The following groups of attributes are send as part of the Cancel-Job Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

Purge-Jobs Operation

The Purge-Jobs operation (0x0012) cancels all of the jobs on a given destination and optionally removes all history and document files for the jobs as well.

Purge-Jobs Request

The following groups of attributes are supplied as part of the Purge-Jobs request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri):

The client MUST supply a URI for the specified printer or "ipp://.../printers" for all printers and classes.

CUPS 1.2/Mac OS X 10.5 "requesting-user-name" (name(MAX)):

The client OPTIONALLY supplies this attribute to specify whose jobs are purged or canceled.

CUPS 1.2/Mac OS X 10.5 "my-jobs" (boolean):

The client OPTIONALLY supplies this attribute to specify that only the jobs owned by the requesting user are purged or canceled. The default is false.

CUPS 1.2/Mac OS X 10.5 "purge-jobs" (boolean):

The client OPTIONALLY supplies this attribute to specify whether the jobs are purged (true) or just canceled (false). The default is true.

Purge-Jobs Response

The following groups of attributes are sent as part of the Purge-Jobs Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

Set-Job-Attributes Operation

CUPS 1.1

The Set-Job-Attributes operation (0x0014) changes the attributes of an active (not completed) job.

Set-Job-Attributes Request

The following groups of attributes are supplied as part of the Set-Job-Attributes request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri) and "job-id" (integer)

OR

"job-uri":

The client MUST supply a URI for the specified printer and a job ID number, or the job URI.

Group 2: Job Template Attributes

"job-sheets" (1setof type3 keyword | name(MAX)): **CUPS 1.1**

The client OPTIONALLY supplies one or two banner pages that are printed before and after any files in the print job. The name of "none" is reserved to indicate that no banner page should be printed. If the client does not specify this attribute then the value of the "job-sheets-default" printer object attribute is used.

Note: Standard IPP only allows specification of a single job-sheets attribute value.

"media" (1setof type3 keyword | name(MAX)):

The client **OPTIONALLY** supplies one or more media attributes specifying the size, type, source, and color of the output media. If the client does not specify this attribute then the value of the "media-default" printer object attribute is used.

Note: Standard IPP only allows specification of a single media attribute value.

Other Job Template Attributes

Set-Job-Attributes Response

The following groups of attributes are send as part of the Set-Job-Attributes Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

Create-Printer-Subscription

CUPS 1.2/Mac OS X 10.5

The Create-Printer-Subscription operation (0x0016) creates a subscription for printer or server event notifications. CUPS provides several additional events in addition to the standard events in the IPP notifications specification.

Create-Printer-Subscription Request

The following groups of attributes are supplied as part of the request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri):

The printer (`ipp://server/printers/printername`), class (`ipp://server/classes/classname`), or server (`ipp://server/`) URI for event notifications.

"notify-events" (1setOf keyword):

The events to monitor. In addition to the standard events, CUPS adds the following keywords:

- `printer-added` - Get notified whenever a printer or class is added
- `printer-deleted` - Get notified whenever a printer or class is deleted
- `printer-modified` - Get notified whenever a printer or class is modified
- `server-audit` - Get notified when a security condition occurs
- `server-restarted` - Get notified when the server is restarted
- `server-started` - Get notified when the server is started
- `server-stopped` - Get notified when the server is stopped

Create-Printer-Subscription Response

The following groups of attributes are send as part of the response:

Group 1: Operation Attributes

Status Message:

The standard response status message

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

Group 2: Subscription Object Attributes

"subscription-id" (integer):

The subscription number.

CUPS-Get-Default Operation

The CUPS-Get-Default operation (0x4001) returns the default printer URI and attributes.

CUPS-Get-Default Request

The following groups of attributes are supplied as part of the CUPS-Get-Default request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"requested-attributes" (1setOf keyword) :

The client OPTIONALLY supplies a set of attribute names and/or attribute group names in whose values the requester is interested. If the client omits this attribute, the server responds as if this attribute had been supplied with a value of 'all'.

CUPS-Get-Default Response

The following groups of attributes are send as part of the CUPS-Get-Default Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

Group 2: Printer Object Attributes

The set of requested attributes and their current values.

CUPS-Get-Printers Operation

The CUPS-Get-Printers operation (0x4002) returns the printer attributes for every printer known to the system. This may include printers that are not served directly by the server.

CUPS-Get-Printers Request

The following groups of attributes are supplied as part of the CUPS-Get-Printers request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"first-printer-name" (name(127)): [CUPS 1.2/Mac OS X 10.5](#)

The client OPTIONALLY supplies this attribute to select the first printer that is returned.

"limit" (integer (1:MAX)):

The client OPTIONALLY supplies this attribute limiting the number of printers that are returned.

"printer-location" (text(127)): [CUPS 1.1.7](#)

The client OPTIONALLY supplies this attribute to select which printers are returned.

"printer-type" (type2 enum): [CUPS 1.1.7](#)

The client OPTIONALLY supplies a printer type enumeration to select which printers are returned.

"printer-type-mask" (type2 enum): [CUPS 1.1.7](#)

The client OPTIONALLY supplies a printer type mask enumeration to select which bits are used in the "printer-type" attribute.

"requested-attributes" (1setOf keyword) :

The client OPTIONALLY supplies a set of attribute names and/or attribute group names in whose values the requester is interested. If the client omits this attribute, the server responds as if this attribute had been supplied with a value of 'all'.

"requested-user-name" (name(127)) : [CUPS 1.2/Mac OS X 10.5](#)

The client OPTIONALLY supplies a user name that is used to filter the returned printers.

CUPS-Get-Printers Response

The following groups of attributes are send as part of the CUPS-Get-Printers Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

Group 2: Printer Object Attributes

The set of requested attributes and their current values for each printer.

CUPS-Add-Modify-Printer Operation

The CUPS-Add-Modify-Printer operation (0x4003) adds a new printer or modifies an existing printer on the system.

CUPS-Add-Modify-Printer Request

The following groups of attributes are supplied as part of the CUPS-Add-Modify-Printer request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri):

The client MUST supply a URI for the specified printer.

Group 2: Printer Object Attributes

"auth-info-required" (1setOf type2 keyword): [CUPS 1.3/Mac OS X 10.5](#)

The client OPTIONALLY supplies one or more authentication keywords that are required to communicate with the printer/remote queue.

"job-sheets-default" (1setOf name(127)): [CUPS 1.1.7](#)

The client OPTIONALLY supplies one or two banner page names that are printed before and after files in a job. The reserved name "none" is used to specify that no banner page should be printed.

"device-uri" (uri):

The client OPTIONALLY supplies a device URI for the specified printer.

"port-monitor" (name(127)):

The client OPTIONALLY supplies a port monitor name for the specified printer.

"ppd-name" (name(127)):

The client OPTIONALLY supplies a PPD name for the specified printer.

"printer-is-accepting-jobs" (boolean):

The client OPTIONALLY supplies this boolean attribute indicating whether or not the printer object should accept new jobs.

"printer-info" (text(127)):

The client OPTIONALLY supplies this attribute indicating the printer information string.

"printer-location" (text(127)):

The client OPTIONALLY supplies this attribute indicating a textual location of the printer.

"printer-more-info" (uri):

The client OPTIONALLY supplies this attribute indicating a URI for additional printer information.

"printer-state" (type2 enum):

The client OPTIONALLY supplies this attribute indicating the initial/current state of the printer. Only the "idle" and "stopped" enumerations are recognized.

"printer-state-message" (text(MAX)):

The client OPTIONALLY supplies this attribute indicating a textual reason for the current printer state.

"requesting-user-name-allowed" (1setof name(127) | delete)

OR

"requesting-user-name-denied" (1setof name(127) | delete):

The client OPTIONALLY supplies one of these attributes to specify an access control list for incoming print jobs. To allow all users access to a printer, use the delete tag for the attribute value.

The CUPS-Add-Modify-Printer request can optionally be followed by a PPD file or System V interface script to be used for the printer. The "ppd-name" attribute overrides any file that is attached to the end of the request with a local CUPS PPD file.

CUPS-Add-Modify-Printer Response

The following groups of attributes are send as part of the CUPS-Add-Modify-Printer Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

CUPS-Delete-Printer Operation

The CUPS-Delete-Printer operation (0x4004) removes an existing printer from the system.

CUPS-Delete-Printer Request

The following groups of attributes are supplied as part of the CUPS-Delete-Printer request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri):

The client MUST supply a URI for the specified printer.

CUPS-Delete-Printer Response

The following groups of attributes are send as part of the CUPS-Delete-Printer Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

CUPS-Get-Classes Operation

The CUPS-Get-Classes operation (0x4005) returns the printer attributes for every printer class known to the system. This may include printer classes that are not served directly by the server.

CUPS-Get-Classes Request

The following groups of attributes are supplied as part of the CUPS-Get-Classes request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"first-printer-name" (name(127)): [CUPS 1.2/Mac OS X 10.5](#)

The client OPTIONALLY supplies this attribute to select the first printer that is returned.

"limit" (integer (1:MAX)):

The client OPTIONALLY supplies this attribute limiting the number of printer classes that are returned.

"printer-location" (text(127)): [CUPS 1.1.7](#)

The client OPTIONALLY supplies this attribute to select which printer classes are returned.

"printer-type" (type2 enum): [CUPS 1.1.7](#)

The client OPTIONALLY supplies a printer type enumeration to select which printer classes are returned.

"printer-type-mask" (type2 enum): [CUPS 1.1.7](#)

The client OPTIONALLY supplies a printer type mask enumeration to select which bits are used in the "printer-type" attribute.

"requested-attributes" (1setOf keyword) :

The client OPTIONALLY supplies a set of attribute names and/or attribute group names in whose

The client **OPTIONALLY** supplies a set of attribute names and/or attribute group names in whose values the requester is interested. If the client omits this attribute, the server responds as if this attribute had been supplied with a value of 'all'.

"requested-user-name" (name(127)): [CUPS 1.2/Mac OS X 10.5](#)

The client **OPTIONALLY** supplies a user name that is used to filter the returned printers.

CUPS-Get-Classes Response

The following groups of attributes are sent as part of the CUPS-Get-Classes Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

Group 2: Printer Class Object Attributes

The set of requested attributes and their current values for each printer class.

CUPS-Add-Modify-Class Operation

The CUPS-Add-Modify-Class operation (0x4006) adds a new printer class or modifies an existing printer class on the system.

CUPS-Add-Modify-Class Request

The following groups of attributes are supplied as part of the CUPS-Add-Modify-Class request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri):

The client **MUST** supply a URI for the specified printer class.

Group 2: Printer Object Attributes

"auth-info-required" (1setOf type2 keyword): [CUPS 1.3/Mac OS X 10.5](#)

The client **OPTIONALLY** supplies one or more authentication keywords that are required to communicate with the printer/remote queue.

"member-uris" (1setOf uri):

The client **OPTIONALLY** supplies the "member-uris" set specifying the printers and printer classes that are part of the class.

"printer-is-accepting-jobs" (boolean):

The client **OPTIONALLY** supplies this boolean attribute indicating whether or not the class object should accept new jobs.

"printer-info" (text(127)):

The client **OPTIONALLY** supplies this attribute indicating the printer information string.

"printer-location" (text(127)):

The client **OPTIONALLY** supplies this attribute indicating a textual location of the class.

"printer-more-info" (uri):

The client **OPTIONALLY** supplies this attribute indicating a URI for additional class information.

"printer-state" (type2 enum):

The client **OPTIONALLY** supplies this attribute indicating the initial/current state of the class. Only the "idle" and "stopped" enumerations are recognized.

"printer-state-message" (text(MAX)):

The client **OPTIONALLY** supplies this attribute indicating a textual reason for the current class state.

"requesting-user-name-allowed" (1setof name(127))

OR

"requesting-user-name-denied" (1setof name(127)):

The client **OPTIONALLY** supplies one of these attributes to specify an access control list for incoming print jobs. To allow all users access to a class, use the delete tag for the attribute value.

CUPS-Add-Modify-Class Response

The following groups of attributes are send as part of the CUPS-Add-Modify-Class Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

CUPS-Delete-Class Operation

The CUPS-Delete-Class operation (0x4007) removes an existing printer class from the system.

CUPS-Delete-Class Request

The following groups of attributes are supplied as part of the CUPS-Delete-Class request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri):

The client **MUST** supply a URI for the specified printer class.

CUPS-Delete-Class Response

The following groups of attributes are send as part of the CUPS-Delete-Class Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

CUPS-Accept-Jobs Operation

The CUPS-Accept-Jobs operation (0x4008) is used to accept a print job for a printer class.

The CUPS-Accept-Jobs operation (0x4008) sets the "printer-is-accepting-jobs" attribute to true for the specified printer or printer class.

CUPS-Accept-Jobs Request

The following groups of attributes are supplied as part of the CUPS-Accept-Jobs request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri):

The client MUST supply a URI for the specified printer or printer class.

CUPS-Accept-Jobs Response

The following groups of attributes are send as part of the CUPS-Accept-Jobs Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

CUPS-Reject-Jobs Operation

The CUPS-Reject-Jobs operation (0x4009) sets the "printer-is-accepting-jobs" attribute to false for the specified printer or printer class.

CUPS-Reject-Jobs Request

The following groups of attributes are supplied as part of the CUPS-Reject-Jobs request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri):

The client MUST supply a URI for the specified printer or printer class.

Group 2: Printer Object Attributes

"printer-state-message" (text(MAX)):

The client OPTIONALLY supplies this attribute indicating a textual reason for the current printer state.

CUPS-Reject-Jobs Response

The following groups of attributes are send as part of the CUPS-Reject-Jobs Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

CUPS-Set-Default Operation

The CUPS-Set-Default operation (0x400A) sets the default printer destination for all clients when a resource name of "/printers" is specified.

CUPS-Set-Default Request

The following groups of attributes are supplied as part of the CUPS-Set-Default request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri):

The client MUST supply a URI for the specified printer or printer class.

CUPS-Set-Default Response

The following groups of attributes are send as part of the CUPS-Set-Default Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

CUPS-Get-Devices Operation

CUPS 1.1

The CUPS-Get-Devices operation (0x400B) returns all of the supported device-uri's for the server.

CUPS-Get-Devices Request

The following groups of attributes are supplied as part of the CUPS-Get-Devices request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"device-class" (type1 keyword):

The client OPTIONALLY supplies a device class keyword to select which devices are returned.

"exclude-schemes" (1setOf name): [CUPS 1.4/Mac OS X 10.6](#)

The client OPTIONALLY supplies a set of scheme names that the requestor does not want to discover. If the client omits this attribute, the server responds with devices of all schemes specified by the "include-schemes" attribute.

"include-schemes" (1setOf name): [CUPS 1.4/Mac OS X 10.6](#)

The client OPTIONALLY supplies a set of scheme names that the requestor wants to discover. If the client omits this attribute, the server responds with devices of all schemes except those specified by the "exclude-schemes" attribute.

the exclude-schemes attribute.

"limit" (integer (1:MAX)):

The client OPTIONALLY supplies this attribute limiting the number of devices that are returned.

"requested-attributes" (1setOf keyword) :

The client OPTIONALLY supplies a set of attribute names and/or attribute group names in whose values the requester is interested. If the client omits this attribute, the server responds as if this attribute had been supplied with a value of 'all'.

"timeout" (integer (1:MAX)) : CUPS 1.4/Mac OS X 10.6

The client OPTIONALLY supplies this attribute to limit the duration of the lookup. The default timeout is 15 seconds.

CUPS-Get-Devices Response

The following groups of attributes are send as part of the CUPS-Get-Devices Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

Group 2: Device Object Attributes

The set of requested attributes and their current values for each device.

CUPS-Get-PPDs Operation

CUPS 1.1

The CUPS-Get-PPDs operation (0x400C) returns all of the locally available PPD files on the system.

CUPS-Get-PPDs Request

The following groups of attributes are supplied as part of the CUPS-Get-PPDs request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"exclude-schemes" (1setOf name) : CUPS 1.4/Mac OS X 10.6

The client OPTIONALLY supplies a set of scheme names that the requestor does not want to list. If the client omits this attribute, the server responds with PPDs of all schemes specified by the "include-schemes" attribute.

"include-schemes" (1setOf name) : CUPS 1.4/Mac OS X 10.6

The client OPTIONALLY supplies a set of scheme names that the requestor wants to list. If the client omits this attribute, the server responds with PPDs of all schemes except those specified by the "exclude-schemes" attribute.

"limit" (integer (1:MAX)):

The client OPTIONALLY supplies this attribute limiting the number of PPDs that are returned.

"ppd-make" (text(127)):

The client OPTIONALLY supplies a printer manufacturer to select which PPDs are returned.

"ppd-make-and-model" (text(127)) : CUPS 1.3/Mac OS X 10.5

The client OPTIONALLY supplies a make and model to select which PPDs are returned.

"ppd-model-number" (integer): CUPS 1.3/Mac OS X 10.5

The client OPTIONALLY supplies a model number to select which PPDs are returned.

"ppd-natural-language" (naturalLanguage): CUPS 1.3/Mac OS X 10.5

The client OPTIONALLY supplies a language to select which PPDs are returned.

"ppd-product" (text(127)): CUPS 1.3/Mac OS X 10.5

The client OPTIONALLY supplies a PostScript product string to select which PPDs are returned.

"ppd-psversion" (text(127)): CUPS 1.3/Mac OS X 10.5

The client OPTIONALLY supplies a PostScript version string to select which PPDs are returned.

"ppd-type" (type1 keyword): CUPS 1.3/Mac OS X 10.5

The client OPTIONALLY supplies a driver type to select which PPDs are returned.

"requested-attributes" (1setOf keyword) :

The client OPTIONALLY supplies a set of attribute names and/or attribute group names in whose values the requester is interested. If the client omits this attribute, the server responds as if this attribute had been supplied with a value of 'all'. Specify "ppd-make" to get a list of manufacturers.

CUPS-Get-PPDs Response

The following groups of attributes are send as part of the CUPS-Get-PPDs Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

Group 2: PPD Attributes

The set of requested attributes and their current values for each PPD file.

CUPS-Move-Job Operation

CUPS 1.1

The CUPS-Move-Job operation (0x400D) moves an active print job or all print jobs for a printer to a different printer.

CUPS-Move-Job Request

The following groups of attributes are supplied as part of the CUPS-Move-Job request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri)

OR

"printer-uri" (uri) and "job-id" (integer)

OR

"job-uri":

The client MUST supply a URI for the specified printer, the URI for the specified printer and a job ID number on the job URI.

number, or the job URI.

Group 2: Job Template Attributes

"job-printer-uri" (uri)

The client MUST supply a URI for a printer on the same server.

CUPS-Move-Job Response

The following groups of attributes are send as part of the CUPS-Move-Job Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

CUPS-Authenticate-Job Operation

CUPS 1.2/Mac OS X 10.5

The CUPS-Authenticate-Job operation (0x400E) authenticates a print job for printing, releasing the job if it is held. Typically this is used when printing to a remote server. The authentication information is passed in the HTTP request; the HTTP connection is normally encrypted for this type of request.

CUPS-Authenticate-Job Request

The following groups of attributes are supplied as part of the CUPS-Authenticate-Job request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri) and "job-id" (integer)

OR

"job-uri":

The client MUST supply a URI for the specified printer and a job ID number, or the job URI.

Group 2: Job Attributes

"auth-info" (1setOf text(MAX)); CUPS 1.3/Mac OS X 10.5

The client OPTIONALLY supplies one or more authentication values as specified by the "auth-info-required" attribute.

"job-hold-until" (keyword | name(MAX)); CUPS 1.3/Mac OS X 10.5

The client OPTIONALLY supplies a new job-hold-until value for the job. If specified and not the "no-hold" value, the job is held instead of released for printing.

CUPS-Authenticate-Job Response

The following groups of attributes are send as part of the CUPS-Authenticate-Job Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of

the IPP Model and Semantics document.

Group 2: Unsupported Attributes (status=client-error-attributes-or-values-not-supported)

auth-info-required (1setOf Type2 keyword)
The required authentication information.

CUPS-Get-PPD Operation

CUPS 1.3/Mac OS X 10.5

The CUPS-Get-PPD operation (0x400F) gets a PPD file from the server. The PPD file can be specified using a `ppd-name` returned by `CUPS-Get-PPDs` or using the `printer-uri` for a queue.

If the PPD file is found, `successful-ok` is returned with the PPD file following the response data.

If the PPD file cannot be served by the local server because the `printer-uri` attribute points to an external printer, a `cups-see-other` status is returned with the correct URI to use.

If the PPD file does not exist, `client-error-not-found` is returned.

CUPS-Get-PPD Request

The following group of attributes is supplied as part of the CUPS-Get-PPD request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri)

OR

"ppd-name" (name(255)):

The client MUST supply a printer URI or PPD name.

CUPS-Get-PPD Response

The following group of attributes is sent as part of the CUPS-Get-PPD Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

"printer-uri" (uri):

The printer that provides the actual PPD file when the status code is `cups-see-other` (0x280)

If the status code is `successful-ok`, the PPD file follows the end of the IPP response.

CUPS-Get-Document Operation

CUPS 1.4/Mac OS X 10.6

The CUPS-Get-Document operation (0x4027) gets a document file from a job on the server. The document file is specified using the `document-number` and either the `job-uri` or `printer-uri` and `job-id` identifying the job.

If the document file is found, `successful-ok` is returned with the document file following the response data.

If the document file does not exist, `client-error-not-found` is returned.

If the requesting user does not have access to the document file, `client-error-not-found` is returned.

If the requesting user does not have access to the document file, `client-error-not-authorized` is returned.

CUPS-Get-Document Request

The following group of attributes is supplied as part of the CUPS-Get-Document request:

Group 1: Operation Attributes

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.1 of the IPP Model and Semantics document.

"printer-uri" (uri) and "job-id" (integer)

OR

"job-uri" (uri):

The client MUST supply a printer URI and job ID or job URI.

"document-number" (integer(1:MAX)):

The client MUST supply a document number to retrieve. The `document-count` attribute for the job defines the maximum document number that can be specified. In the case of jobs with banners (`job-sheets` is not "none"), document number 1 will typically contain the start banner and document number N will typically contain the end banner.

CUPS-Get-Document Response

The following group of attributes is sent as part of the CUPS-Get-Document Response:

Group 1: Operation Attributes

Status Message:

The standard response status message.

Natural Language and Character Set:

The "attributes-charset" and "attributes-natural-language" attributes as described in section 3.1.4.2 of the IPP Model and Semantics document.

"document-format" (mimeType):

The format of the document file.

"document-number" (integer(1:MAX)):

The requested document number.

"document-name" (name(MAX)):

The name that was supplied with the document, if any.

If the status code is `successful-ok`, the document file follows the end of the IPP response.

Attributes

CUPS provides many extension attributes to support multiple devices, PPD files, standard job filters, printers, and printer classes.

Device Attributes

Device attributes are returned by the CUPS-Get-Devices operation and enumerate all of the available hardware devices and network protocols that are supported by the server.

device-class (type2 keyword)

The device-class attribute specifies the class of device and can be one of the following:

- "file" - a disk file.
- "direct" - a parallel or fixed-rate serial data port, currently used for Centronics, IEEE-1284, and USB printer ports.
- "serial" - a variable-rate serial port.
- "network" - a network connection, typically via AppSocket, HTTP, IPP, LPD, or SMB/CIFS protocols.

device-id (text(127))

CUPS 1.2/Mac OS X 10.5

The device-id attribute specifies the IEEE-1284 device ID string for the device.

device-info (text(127))

The device-info attribute specifies a human-readable string describing the device, e.g. "Parallel Port #1".

device-location (text(127))

CUPS 1.4/Mac OS X 10.6

The device-location attribute specifies the physical location of the printer.

device-make-and-model (text(127))

The device-make-and-model attribute specifies a device identification string provided by the printer connected to the device. If the device or printer does not support identification then this attribute contains the string "unknown".

device-uri (uri)

The device-uri attribute specifies a unique identifier for the device. The actual format of the device-uri string depends on the value of the device-class attribute:

- "file" - The device-uri will be of the form "file:///path/to/filename".
- "direct" - The device-uri will be of the form "scheme:/dev/filename" or "scheme://vendor/identifier", where scheme may be "parallel" or "usb" in the current implementation.
- "serial" - The device-uri will be of the form "serial:/dev/filename?baud=value+parity=value+flow=value". The baud value is the data rate in bits per second; the supported values depend on the underlying hardware. The parity value can be one of "none", "even", or "odd". The flow value can be one of "none", "soft" (XON/XOFF handshaking), "hard" or "rts/cts" (RTS/CTS handshaking), or "dtrdsr" (DTR/DSR handshaking).

The URI returned by CUPS-Get-Devices will contain the maximum baud rate supported by the device and the best type of flow control available ("soft" or "hard").

- "network" - The device-uri will be of the form "scheme://[username:password@]hostname[:port]/[resource]", where scheme may be "http", "https", "ipp", "lpd", "smb", or "socket" in the current implementation.

The URI returned by CUPS-Get-Devices will only contain the scheme name ("scheme"). It is up to the client application to add the appropriate host and other information when adding a new printer.

The URI returned by Get-Printer-Attributes and CUPS-Get-Printers has any username and password information stripped; the information is still stored and used by the server internally to perform any needed authentication.

Job Template Attributes

auth-info (1setOf text(MAX))

CUPS 1.3/Mac OS X 10.5

The auth-info attribute specifies the authentication information to use when printing to a remote device. The order and content of each text value is specified by the [auth-info-required](#) printer attribute.

blackplot (boolean)

The blackplot attribute specifies whether HP-GL/2 plot files should be rendered entirely in black ink (blackplot=true) or using the colors and shades specified in the file (blackplot=false). The default value is false.

brightness (integer(0:200))

Deprecated

The brightness attribute specifies the overall brightness of the printed output in percent. A brightness of 100 is normal, while 200 is twice as bright and 50 is half as bright. The default value is 100.

Brightness is applied to the Cyan, Magenta, Yellow, and Black values using the function "f(x) = brightness / 100 * x".

Note:

This attribute is deprecated and will be removed from a future CUPS release.

columns (integer(1:4))

Deprecated

The columns attribute specifies the number of columns to generate when printing text files. The default value is 1.

cpi (type2 enum)

The cpi attribute specifies the number of characters per inch when printing text files. Only the values 10, 12, and 17 are currently supported. The default value is 10.

document-count (integer(1:MAX))

The document-count attribute specifies the number of documents that are present in the job.

fit-to-page (boolean)

CUPS 1.4/Mac OS X 10.6

The fit-to-page attribute specifies whether to scale documents to fit on the selected media (fit-to-page=true) or use the physical size specified in the document (fit-to-page=false). The default value is false.

fitplot (boolean)

Deprecated

The fitplot attribute specifies whether to scale HP-GL/2 plot files to fit on the selected media (fitplot=true) or use the physical scale specified in the plot file (fitplot=false). The default value is false.

gamma (integer(1:10000))

Deprecated

The gamma attribute specifies the luminance correction for the output. A value of 1000 specifies no correction, while values of 2000 and 500 will generate lighter and darker output, respectively. The default value is 1000.

Gamma is applied to the Red, Green, and Blue values (or luminance for grayscale output) using the function "f(x) = x^(1000/gamma)".

Note:

This attribute is deprecated and will be removed from a future CUPS release.

hue (integer(-180:180))

Deprecated

The hue attribute specifies a color hue rotation when printing image files. The default value is 0.

Note:

This attribute is deprecated and will be removed from a future CUPS release.

job-billing (text(MAX))

CUPS 1.1

The job-billing attribute provides a text value to associate with a job for billing purposes.

job-hold-until (keyword | name(MAX))

CUPS 1.1

The job-hold-until attribute specifies a hold time. In addition to the standard IPP/1.1 keyword names, CUPS supports name values of the form "HH:MM" and "HH:MM:SS" that specify a hold time. The hold time is in Universal Coordinated Time (UTC) and *not* in the local time zone. If the specified time is less than the current time, the job is held until the next day.

job-media-progress (integer(0:100))

CUPS 1.4/Mac OS X 10.6

The job-media-progress attribute specifies the percentage of completion of the current page. It is only valid when the job-state attribute has the "processing" value (5).

job-printer-state-message (text(MAX))

CUPS 1.3/Mac OS X 10.5

The job-printer-state-message attribute provides the last known value of the printer-state-message attribute for the printer that processed (or is processing) the job.

job-printer-state-reasons (1setOf type2 keyword)

CUPS 1.3/Mac OS X 10.5

The job-printer-state-reasons attribute provides the last known value of the printer-state-reasons attribute for the printer that processed (or is processing) the job.

job-sheets (1setof type3 keyword | name(MAX))

CUPS 1.1

The job-sheets attribute specifies one or two banner files that are printed before and after a job. The reserved value of "none" disables banner printing. The default value is stored in the job-sheets-default attribute.

If only one value is supplied, the banner file is printed before the job. If two values are supplied, the first value is used as the starting banner file and the second as the ending banner file.

job-originating-host-name (name(MAX))

(CUPS 1.1.5 and higher)

The job-originating-host-name attribute specifies the host from which the job was queued. The value will be the hostname or IP address of the client depending on whether hostname resolution is enabled. The localhost address (127.0.0.1) is **always** resolved to the name "localhost".

This attribute is read-only.

lpi (type2 enum)

The lpi attribute specifies the number of lines per inch when printing text files. Only the values 6 and 8 are currently supported. The default value is 6.

mirror (boolean)

The mirror attribute specifies whether pages are mirrored on their X axis, which is useful for printing transfer

images on special media. The default value is false.

natural-scaling (integer(1:1000))

CUPS 1.1.9

The natural-scaling attribute specifies the scaling of image files with respect to the natural image size. A value of 100 specifies that the image file should exactly the natural size, while 50 is half the natural size and 200 is twice the natural size. The default value is 100.

The `ppi` option can be used to override the natural resolution of the image, which controls the natural size.

number-up-layout (type2 keyword)

CUPS 1.1.15

The number-up-layout attribute specifies the order each input page is placed on each output page. The following keywords are presently defined:

- `btlr` - Bottom to top, left to right
- `btrl` - Bottom to top, right to left
- `lrbt` - Left to right, bottom to top
- `lrbt` - Left to right, top to bottom (default)
- `rlbt` - Right to left, bottom to top
- `rltb` - Right to left, top to bottom
- `tblr` - Top to bottom, left to right
- `tbrl` - Top to bottom, right to left

page-border (type2 keyword)

CUPS 1.1.15

The page-border attribute specifies whether a border is drawn around each page. The following keywords are presently defined:

- `double` - Two hairline borders are drawn
- `double-thick` - Two 1pt borders are drawn
- `none` - No border is drawn (default)
- `single` - A single hairline border is drawn
- `single-thick` - A single 1pt border is drawn

page-bottom (integer(0:MAX))

The page-bottom attribute specifies the bottom margin in points (72 points equals 1 inch). The default value is the device physical margin.

page-label (text(MAX))

CUPS 1.1.7

The page-label attribute provides a text value to place in the header and footer on each page. If a classification level is set on the server, then this classification is printed before the page label.

page-left (integer(0:MAX))

The page-left attribute specifies the left margin in points (72 points equals 1 inch). The default value is the device physical margin.

page-right (integer(0:MAX))

The page-right attribute specifies the right margin in points (72 points equals 1 inch). The default value is the device physical margin.

page-set (type2 keyword)

The page-set attribute specifies which pages to print in a file. The supported keywords are "all", "even", and "odd". The default value is "all".

page-top (integer(0:MAX))

The page-top attribute specifies the top margin in points (72 points equals 1 inch). The default value is the device physical margin.

penwidth (integer(0:MAX))

The penwidth attribute specifies the default pen width in micrometers when printing HP-GL/2 plot files. The default value is 1000 (1 millimeter).

position (type2 keyword)

The position attribute specifies the location of image files on the media. The following keyword values are recognized:

- `center` - Center the image on the page (default)
- `top` - Print the image centered at the top of the page
- `left` - Print the image centered on the left of the page
- `right` - Print the image centered on the right of the page
- `top-left` - Print the image at the top left corner of the page
- `top-right` - Print the image at the top right corner of the page
- `bottom` - Print the image centered at the bottom of the page
- `bottom-left` - Print the image at the bottom left corner of the page
- `bottom-right` - Print the image at the bottom right corner of the page

ppi (integer(1:MAX))

The ppi attribute specifies the resolution of an image file in pixels per inch. The default value is the resolution included with the file or 128 if no resolution information is available.

prettyprint (boolean)

The prettyprint attribute specifies whether text files should be printed with a shaded header and keyword highlighting (`prettyprint=true`) or without additional formatting (`prettyprint=false`). The default value is `false`.

saturation (integer(0:200))**Deprecated**

The saturation attribute specifies the color saturation when printing image files. A saturation of 100 is normal, while values of 50 and 200 will be half and twice as colorful, respectively. The default value is 100.

Note:

This attribute is deprecated and will be removed from a future CUPS release.

scaling (integer(1:1000))

The scaling attribute specifies the scaling of image files with respect to the selected media. A value of 100 specifies that the image file should fit 100% of the page, or as much as possible given the image dimensions. The default value is unspecified.

The scaling attribute overrides the ppi attribute if specified.

wrap (boolean)

The wrap attribute specifies whether long lines should be wrapped (`wrap=true`) or not (`wrap=false`) when printing text files. The default value is `true`.

PPD Attributes

ppd-device-id (text(127))

The `ppd-device-id` attribute specifies the IEEE-1284 device ID string for the device described by the PPD file.

ppd-make (text(127))

The `ppd-make` attribute specifies the manufacturer of the printer (the `Manufacturer` attribute in the PPD file). If the manufacturer is not specified in the PPD file then an educated guess is made using the `NickName` attribute in the PPD file.

ppd-make-and-model (text(127))

The `ppd-make-and-model` attribute specifies the manufacturer and model name of the PPD file (the `NickName` attribute in the PPD file). If the make and model is not specified in the PPD file then the `ModelName` or `ShortNickName` attributes are used instead.

ppd-model-number (integer)

CUPS 1.3/Mac OS X 10.5

The `ppd-model-number` attribute provides the `cupsModelNumber` value from the PPD file.

ppd-name (name(255))

The `ppd-name` attribute specifies either the PPD filename on the server relative to the model directory or a URI that maps to a specific driver interface in the driver directory. The forward slash (/) is used to delineate directories.

ppd-natural-language (1setOf naturalLanguage)

The `ppd-natural-language` attribute specifies the language encoding of the PPD file (the `LanguageVersion` attribute in the PPD file). If the language is unknown or undefined then "en" (English) is assumed.

ppd-product (1setOf text(127))

The `ppd-product` attribute specifies the `Product` attribute values in the PPD file.

ppd-psversion (1setOf text(127))

CUPS 1.3/Mac OS X 10.5

The `ppd-product` attribute specifies the `PSVersion` attribute values in the PPD file.

ppd-type (type1 keyword)

CUPS 1.3/Mac OS X 10.5

The `ppd-type` attribute specifies the type of driver described by the PPD file:

- `fax` - A facsimile or multi-function device
- `pdf` - A PDF printer
- `postscript` - A PostScript printer (no filters)
- `raster` - A CUPS raster driver
- `unknown` - An unknown or hybrid driver

Printer Attributes

auth-info-required (1setOf type2 keyword)

CUPS 1.3/Mac OS X 10.5

The `auth-info-required` attribute specifies the authentication information that is required for printing a job. The following keywords are recognized:

- `domain` - A domain name is required.
- `none` - No authentication is required - this keyword can only appear by itself.
- `password` - A password is required.
- `username` - A username is required.

job-k-limit (integer)

CUPS 1.1

The `job-k-limit` attribute specifies the maximum number of kilobytes that may be printed by a user, including banner files. The default value of 0 specifies that there is no limit.

job-page-limit (integer)

CUPS 1.1

The `job-page-limit` attribute specifies the maximum number of pages that may be printed by a user, including banner files. The default value of 0 specifies that there is no limit.

job-quota-period (integer)

CUPS 1.1

The `job-quota-period` attribute specifies the time period used for quota calculations, in seconds. The default value of 0 specifies that the limits apply to all jobs that have been printed by a user that are still known to the system.

job-sheets-supported (1setof type3 keyword | name(MAX))

CUPS 1.1

The `job-sheets-supported` attribute specifies the available banner files. There will always be at least one banner file available called "none".

marker-change-time (integer)

CUPS 1.3/Mac OS X 10.5

The `marker-change-time` attribute specifies the printer-up-time value when the last change to the `marker-colors`, `marker-levels`, `marker-message`, `marker-names`, or `marker-types` attributes was made.

marker-colors (1setof name(MAX))

CUPS 1.3/Mac OS X 10.5

The `marker-colors` attribute specifies the color(s) for each supply in the printer. It is only available when the driver provides supply levels. The color is either "none" or one or more hex-encoded sRGB colors of the form "#RRGGBB".

marker-high-levels (1setof integer(0:100))

CUPS 1.4/Mac OS X 10.6

The `marker-high-levels` attribute specifies the supply levels that indicate a near-full condition. A value of 100 should be used for supplies that are consumed/emptied, e.g. ink cartridges.

marker-levels (1setof integer(-3:100))

CUPS 1.3/Mac OS X 10.5

The `marker-levels` attribute specifies the current supply levels for the printer. It is only available when the driver provides supply levels. A value of -1 indicates the level is unavailable, -2 indicates unknown, and -3 indicates the level is unknown but has not yet reached capacity. Values from 0 to 100 indicate the corresponding percentage.

marker-low-levels (1setof integer(0:100))

CUPS 1.4/Mac OS X 10.6

The `marker-low-levels` attribute specifies the supply levels that indicate a near-empty condition. A value of 0 should be used for supplies that are filled, e.g. waste ink tanks.

marker-message (text(MAX))

CUPS 1.4/Mac OS X 10.6

The `marker-message` attribute provides a human-readable status message for the current supply levels. e.g. "12

The marker-remaining attribute provides a human-readable status message for the current supply levels, e.g. "10 pages of ink remaining." It is only available when the driver provides supply levels.

marker-names (1setof name(MAX))

CUPS 1.3/Mac OS X 10.5

The marker-names attribute specifies the name(s) for each supply in the printer. It is only available when the driver provides supply levels.

marker-types (1setof type3 keyword)

CUPS 1.3/Mac OS X 10.5

The marker-types attribute specifies the type(s) of each supply in the printer. It is only available when the driver provides supply levels. The following (RFC 3805) types are currently supported:

- toner
- wasteToner
- ink
- inkCartridge
- inkRibbon
- wasteInk
- opc
- developer
- fuserOil
- solidWax
- ribbonWax
- wasteWax
- fuser
- coronaWire
- fuserOilWick
- cleanerUnit
- fuserCleaningPad
- transferUnit
- tonerCartridge
- fuserOiler
- water
- wasteWater
- bindingSupply
- bandingSupply
- stichingWire
- shrinkWrap
- paperWrap
- staples
- inserts
- covers

port-monitor" (name(127))

The port-monitor attribute specifies the port monitor to use when printing to this printer. The default port monitor is "none".

port-monitor-supported" (1setOf name(127))

The port-monitor-supported attribute specifies the available port monitors.

printer-commands (1setOf Type3 keyword)

CUPS 1.4/Mac OS X 10.6

The printer-commands attribute specifies the commands that are supported by the CUPS command file filter. The keyword "none" indicates that no commands are supported.

printer-dns-sd-name (name(MAX) | noValue)

CUPS 1.4/Mac OS X 10.6

The printer-dns-sd-name attribute specifies the registered DNS-SD service name for the printer. If the printer is not being shared using this protocol, printer-dns-sd-name will have the noValue value.

printer-state-reasons (1setOf type2 keyword)

The printer-state-reasons attribute provides additional persistent state information for a printer. In addition to the keywords defined in RFC 2911, CUPS supports vendor-specific keywords with a domain prefix ("com.vendor.foo") and the following CUPS-specific keywords:

- cups-insecure-filter-warning - a filter or backend (or the directory containing the filter or backend) has insecure file permissions. CUPS will not execute programs with world write permissions or setuid programs. When run as root (the default), CUPS also does not execute programs that are not owned by root. [CUPS 1.4/Mac OS X 10.6](#)
- cups-missing-filter-warning - a filter or backend is not installed. [CUPS 1.4/Mac OS X 10.6](#)

printer-type (type2 enum)

The printer-type attribute specifies printer type and capability bits for the printer or class. The default value is computed from internal state information and the PPD file for the printer. The following bits are defined:

Bit	Description
0x00000001	Is a printer class.
0x00000002	Is a remote destination.
0x00000004	Can print in black.
0x00000008	Can print in color.
0x00000010	Can print on both sides of the page in hardware.
0x00000020	Can staple output.
0x00000040	Can do fast copies in hardware.
0x00000080	Can do fast copy collation in hardware.
0x00000100	Can punch output.
0x00000200	Can cover output.
0x00000400	Can bind output.
0x00000800	Can sort output.
0x00001000	Can handle media up to US-Legal/A4.
0x00002000	Can handle media from US-Legal/A4 to ISO-C/A2.
0x00004000	Can handle media larger than ISO-C/A2.
0x00008000	Can handle user-defined media sizes.
0x00010000	Is an implicit (server-generated) class.
0x00020000	Is the a default printer on the network.
0x00040000	Is a facsimile device.
0x00080000	Is rejecting jobs.
0x00100000	Delete this queue.
0x00200000	Queue is not shared.
0x00400000	Queue requires authentication.
0x00800000	Queue supports CUPS command files.
0x01000000	Queue was automatically discovered and added.
0x02000000	Queue is a scanner with no printing capabilities.

0x04000000 Queue is a printer with scanning capabilities.

printer-type-mask (type2 enum)

CUPS 1.1

The printer-type-mask attribute is used to choose printers or classes with the CUPS-Get-Printers and CUPS-Get-Classes operations. The bits are defined identically to the printer-type attribute and default to all 1's.

requesting-user-name-allowed (1setof name(127))

CUPS 1.1

The requesting-user-name-allowed attribute lists all of the users that are allowed to access a printer or class. Either this attribute or the requesting-user-name-denied attribute will be defined, but not both.

requesting-user-name-denied (1setof name(127))

CUPS 1.1

The requesting-user-name-denied attribute lists all of the users that are not allowed to access a printer or class. Either this attribute or the requesting-user-name-allowed attribute will be defined, but not both.

Printer Class Attributes

member-names (1setof name(127))

The member-names attribute specifies each of the printer-name attributes of the member printers and classes. Each name corresponds to the same element of the member-uris attribute.

member-uris (1setof uri)

The member-uris attribute specifies each of the printer-uri attributes of the member printers and classes. Each URI corresponds to the same element of the member-names attribute.

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