



■ **PAPI** : Printing Application Programming Interface for applications to use to perform print service interaction.

■ **Participants**

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PAPI Objectives

■ Objectives

Provide applications a means of interacting with print services without being tied to a particular service or protocol

Allow a rich, extensible set of information to flow between application and print service

Support a rich enough set of operations to be useful to most applications with printing needs





PAPI Overview

- Provides abstraction of server, queues (printers and classes), and jobs.
- High-level API focuses on providing a common interface to multiple printing systems and protocols.
- Uses extensible attribute sets based on IPP for representing queue and job information.

Multi-valued and typed





PAPI Overview

■ Currently supports

Server connection (and authentication where applicable)

Basic queue operations:

enumerate, query, accept, reject, enable, disable, create, modify, delete, enumerate/purge jobs

Basic job operations:

submit, stream, query, cancel, hold, release, modify, move





PAPI Release

■ V1.0 Spec

<ftp://ftp.pwg.org/pub/pwg/fsg/spool/papi-v1.0-2005-07-15>

- Released PAPI code on SourceForge
 - PAPI dynamic library (Dynamic library)
 - PAPI over IPP (CUPS, Solaris LP, Windows XP, ...)
 - PAPI over RFC-1179 (lpd, lprng, ...)
 - BSD/SYSV print commands on top of the PAPI
 - IPP Listening support on top of the PAPI

- Released PAPI code on OpenSolaris
 - <http://opensolaris.org/os/community/printing/>
 - PAPI over Solaris LP

■ Others

libgnomeprintpapi (integrated in 2.2)

GTK print dialog - PAPI support in Solaris





Future Activities/Next Steps

- Expand functionality in PAPI Specification and Implementation
 - More administrative operations
 - Document object
 - Async interface
 - PPD/Capabilities
- Integrate support for various Open Source projects:
 - KDE/Qt, Open Office, Samba, GTK+, etc.





Current PAPI work at Sun

■ API for PPD attributes and capabilities

Extension of PAPI

Similar goals with respect to OS/printsystem neutral

Similar names and usage

■ Status

Prototype under development

Additions to PAPI under development





API for PPD Files

■ Examples

`papiPPDGetFile()`

retrieve a ppd file for a given queue on a given server

`papiPPDReadFile()`

reads ppd file information into data structure

`papiPPDAttrGetList()`

returns the attribute list

`papiPPDCapGetList()`

returns the capability list





API for PPD Files

- Helper routines to pull data from lists

`papiPPDAttrGetByName()`

return an attribute requested by name

`papiPPDCapListGetNext()`

get the next capability on the list

`papiPPDCapGetData()`

get the data attached to current capability

...





PAPI and Linux

■ Can the PAPI be used on Linux today?

Yes. Should work on all Posix systems.

■ How can I do that?

Go to SourceForge and download and build the PAPI libraries and print commands.

Edit printers.conf file to include entries for CUPS queues using uri format.

Check READMEs/docs on SourceForge.





PAPI over CUPS

■ PAPI runs over CUPS spooler

I have a Solaris system running both the CUPS spooler and the Solaris spooler.

Uses Solaris PAPI print commands.

Some queues are configured to use the Solaris spooler some to use the CUPS spooler.

Except for variance in data returned from the spoolers, it is seamless.





PAPI and Linux

■ Does the PAPI run over libcups?

No. An interface to libcups has not been implemented.

It is not necessary as psm.ipp is the PAPI implementation of IPP. It comes with the PAPI.





PAPI Status

- FSG PAPI PAPI/1.0 Public Release

[ftp://ftp.pwg.org/pub/pwg/fst/jobticket/spool/
papi-v1.0-2005-05-09.pdf](ftp://ftp.pwg.org/pub/pwg/fst/jobticket/spool/papi-v1.0-2005-05-09.pdf)

- PAPI WG Directory

<ftp://ftp.pwg.org/pub/pwg/fsg/spool>





PAPI Working Group Information

- To subscribe to FSG PAPI mailing list:
<http://freestandards.org/mailman/listinfo/printing-spool>
- To post a message to FSG PAPI mailing list
printing-spool@freestandards.org
- To view FSG PAPI mailing list archives
<http://freestandards.org/mailman/listinfo/printing-spool>
- To find FSG PAPI documents
<ftp://ftp.pwg.org/fsg/spool/>
<http://sourceforge.net/projects/openprinting>

