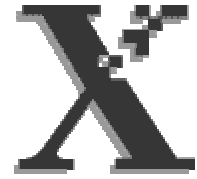


Carl-Uno Manros
Xerox Corporation
Chair of the IPP Working Group



Converging Digital Peripherals/
Integrated Office Conference '98
Boston - October 13, 1998

Internet Printing Protocol (IPP) and PWG Update



Contents

- My role in IPP
- What is the functionality of IPP?
- IPP history to date
- What happened to IPP in 1998?
- Who is working on IPP?
- When will you see products?
- Some other PWG activities
- Concluding Remarks

My role in IPP

- Co-author of an initial draft on IPP in the summer of '96
- WG chair for IPP in the PWG since autumn '96
- WG chair for IPP in the IETF since spring '97
- Leader of:
 - IPP phone conferences (mostly weekly)
 - PWG IPP meetings (every 6 weeks)
 - IETF IPP meetings (3 times a year)





Printer Working Group

The Printer Working Group (or PWG) is an unincorporated alliance among printer manufacturers, print server developers, operating system providers and print management application developers chartered to make printers and the applications and operating systems supporting them work together better.

**Chair of the PWG:
Don Wright, Lexmark International**

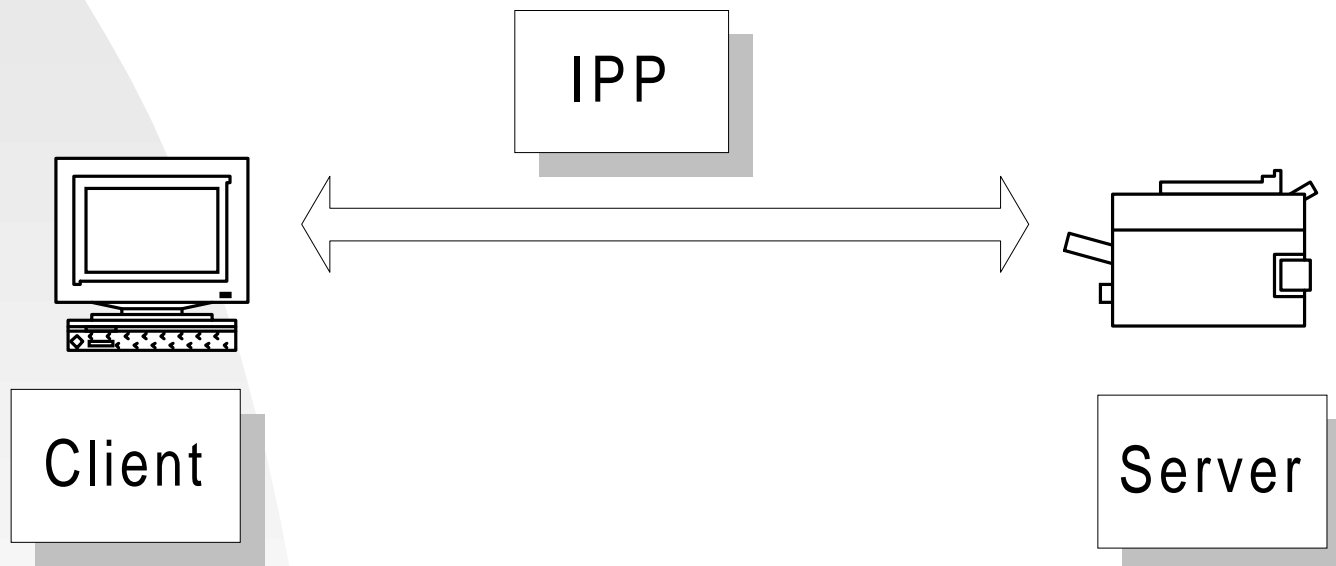


What is the functionality of IPP?

- Intends to replace LPR/LPD with a more capable standardized printing protocol for the Internet
 - ◆ Finding printer capabilities
 - ◆ Submitting print jobs
 - ◆ Finding out status of print jobs
 - ◆ Cancellation of print jobs
 - ◆ Options for multiple documents per job and print-by-reference

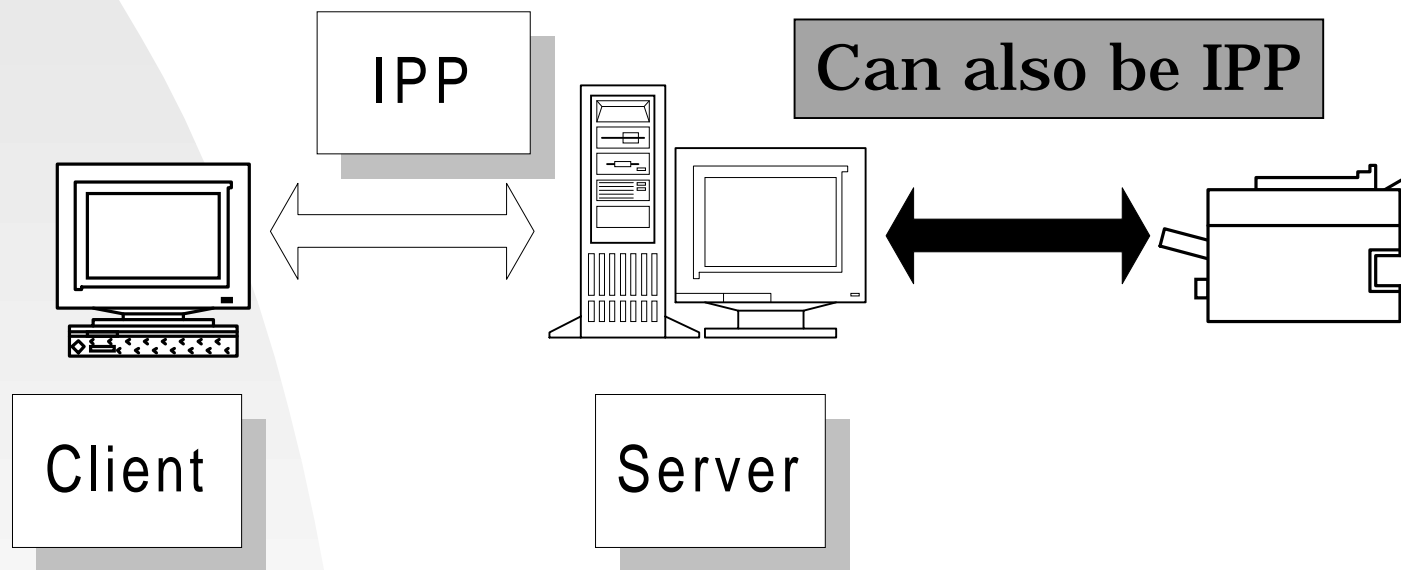


What is the functionality of IPP?



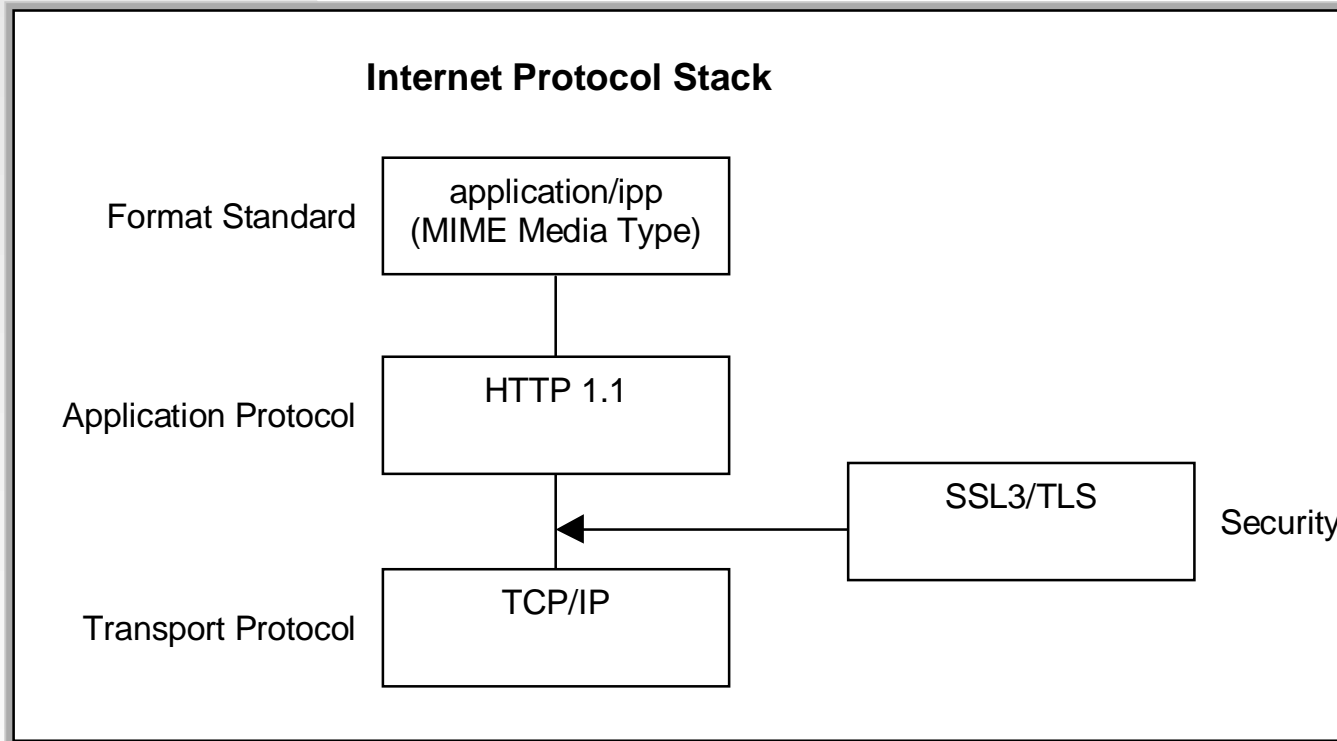
Simple Scenario

What is the functionality of IPP?



Advanced Scenario

What is the functionality of IPP?



History of IPP to date

- Initiated by the PWG in '96
- IETF WG started in March '97
- Technical work up to February '98
- Since then under review by the IESG
- Latest IETF drafts from June '98
- PWG considers IPP V1.0 done
- IESG wants further changes



What happened to IPP in 1998?

- Drafts submitted by IETF IPP WG to IESG for review and ratification
- Introduction of a default port for IPP (port 631) in June
- Introduction of an special IPP URL Scheme is still being worked on
- IETF publication date still highly unpredictable



What happened to IPP in 1998?

- Security, in particular firewalls, has been heavily debated.
 - ◆ IPP client and IPP printer behind same firewall - No problem
 - ◆ IPP client behind firewall and IPP printer on the open Internet - No problem
 - ◆ IPP printer behind firewall, IPP client outside - Big debate



The IETF situation in a nutshell



October 13, 1998

IPP and PWG Update

12

IPP actually works!

- 16 organizations showed up for an IPP inter-operability testing event in September
- 8 client side implementations
- 16 server (printer) side implementations
- Of the possible 128 combinations, 124 worked right away!



Who is working on IPP?

AStart Technologies

duco

EPSON

hp HEWLETT
PACKARD

IBM

i-data
INTERNATIONAL

JCI
Japan Computer Industry

LEXMARK

Microsoft

Novell

Osicom

RICOH

SHARP

Sun
microsystems

Tektronix

X

THE DOCUMENT COMPANY
FUJI XEROX

TR Computing Solutions

When will you see products?

- HP has announced a couple of IPP products, Microsoft, and Lexmark has put out betas
- IBM and Xerox has got test clients on their web sites
- Many printer vendors wait for NT 5.0 to ship, as they plan to use the NT 5.0 IPP Client





Printer Working Group

- IPP Extensions
- MIBs
 - ◆ Printer MIB
 - ◆ Finisher MIB
 - ◆ Job Monitoring MIB
- Universal Print Driver Format
- 1394 Printing



IPP Extensions



- Additional operations for admin
- Additional security features
- Improved support for server to device communication
- Access to MIB data in printers
- Interworking with Internet Fax

What is the new functionality of IPP?

- Extra operations as first extensions to IPP already under way
 - ◆ Hold-Job
 - ◆ Release-Job
 - ◆ Restart-Job
 - ◆ Pause-Printer
 - ◆ Resume-Printer
 - ◆ Purge-Jobs



Universal Print Driver Format



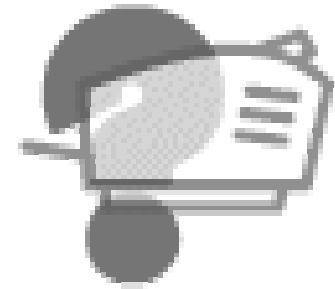
- Goal
 - ◆ Create a Meta-Language to describe a printer's PDL
- Just getting started
 - ◆ Collecting requirements
 - ◆ Writing a charter
- Acting chair
 - ◆ Sandra Matt, HP

Printer MIB



- Goal
 - ◆ Develop a MIB for SNMP management of printers
- Status - Published by IETF as RFC1759
 - ◆ Widely deployed on networkable printers from most vendors
 - ◆ Recent revisions based on ship experience and interoperability testing
- Chair
 - ◆ Lloyd Young, Lexmark International

Finisher MIB



- **Goal**
 - ◆ Develop a MIB for SNMP management of finishers attached to printers. Staple, Collate, Bind, etc.
- **Status - Work almost complete**
 - ◆ Should be published by PWG soon and as Information RFC by IETF
 - ◆ Not deployed yet
 - ◆ Aligned with Printer and Job MIB
- **Chair**
 - ◆ Harry Lewis, IBM

Job Monitoring MIB



- Goal
 - ◆ Develop a MIB for SNMP management of print jobs
- Status - Published by the PWG
 - ◆ Should be published as Informational RFC by IETF
 - ◆ Not deployed yet, awaiting publication
 - ◆ Aligned with IPP's Job Architecture
- Chair
 - ◆ Ron Bergman, Data Products

1394 Printing



- Goal
 - ◆ Develop a printing protocol for 1394 Bus
 - ◆ PC's to Printers
 - ◆ Cameras to Printers, etc.
- Status - Work in progress
 - ◆ PC/Printer based on SBP-2
 - ◆ Camera/Printer much lighter
- Work done together with 1394 Trade Association

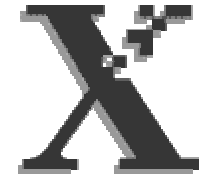
Where can you see more about PWG and IPP?



- The PWG web site at:

<http://www.pwg.org>

<http://www.pwg.org/ipp>



Concluding Remarks

- IPP is definitely happening - expect to see it start showing up on your desktops and in your new printers during next year
- The PWG is still very active and plans to add further specifications to aid the networking and management of printers



**It is not enough
to be on the
right track**

-

**If you just sit
there you will
be run over**