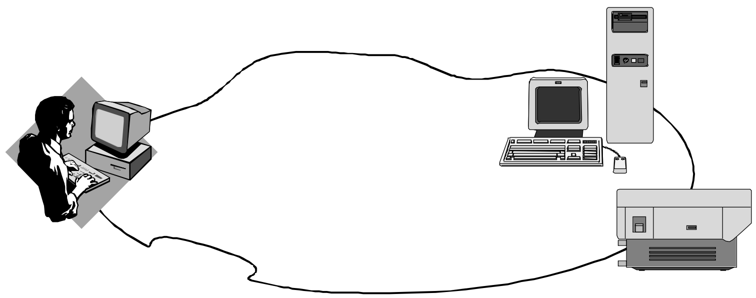
Internet Print Protocol Proposal

HTPP - Hypertext Print Protocol

Requirements

- Platform Independent
- Sits directly on top of TCP/IP
- Based on existing standards
  - HTTP, MIME
  - ISO DPA
  - PWG Print and Job MIBs
- Extensible
- Easily Transforms to device protocols
  - NPAP
  - PJL
  - IPDS

Pushing Print to the Server



"Here is a print job" →
- Job Information (owner, ID, ...)
- Production Instructions (input tray, plex, finishing ...)
- Print data

← "I got it"
- What I did with it or error information
- Job/queue ID on server

o
o
o

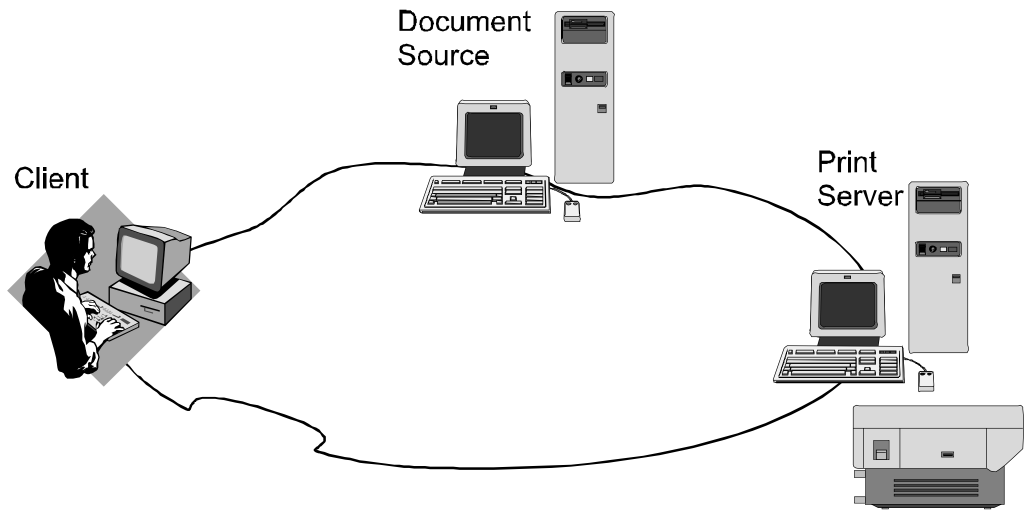
"What is the status of my print job or the printer?" →

← Response = status

o
o
o

← "Print completed" (or error)

Pulling Print From the Client



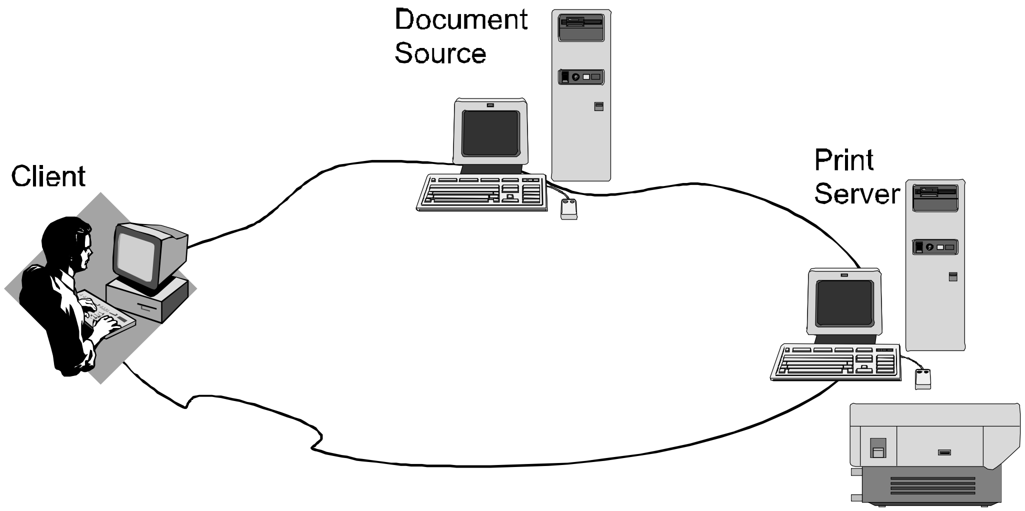
"Here is a print job"
- Job Information (owner, ID, ...)
- Production Instructions (input tray, plex, finishing ...)
- URL of print file

"I got it"
- What I did with it or error information
- Job/queue ID on server

"Give me the print file"

Print File

Pulling a "Purchased" Document



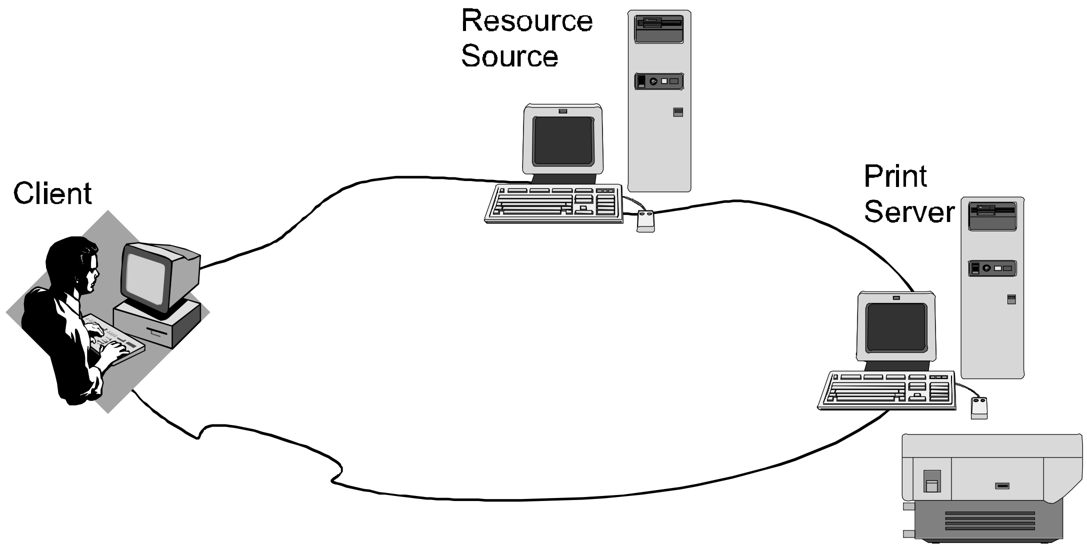
"Here is a print job"
- Job Information (owner, ID, ...)
- Production Instructions (input tray, plex, finishing ...)
- URL of print file
- "Proof of Purchase"

"I got it"
- What I did with it or error information
- Job/queue ID on server

"Give me the print file"
- "Proof of Purchase"

Print File

Printing HTML with Links



"Here is an HTML print job"

- Job Information (owner, ID, ...)
- Production Instructions (input tray, plex, finishing ...)

"I got it"

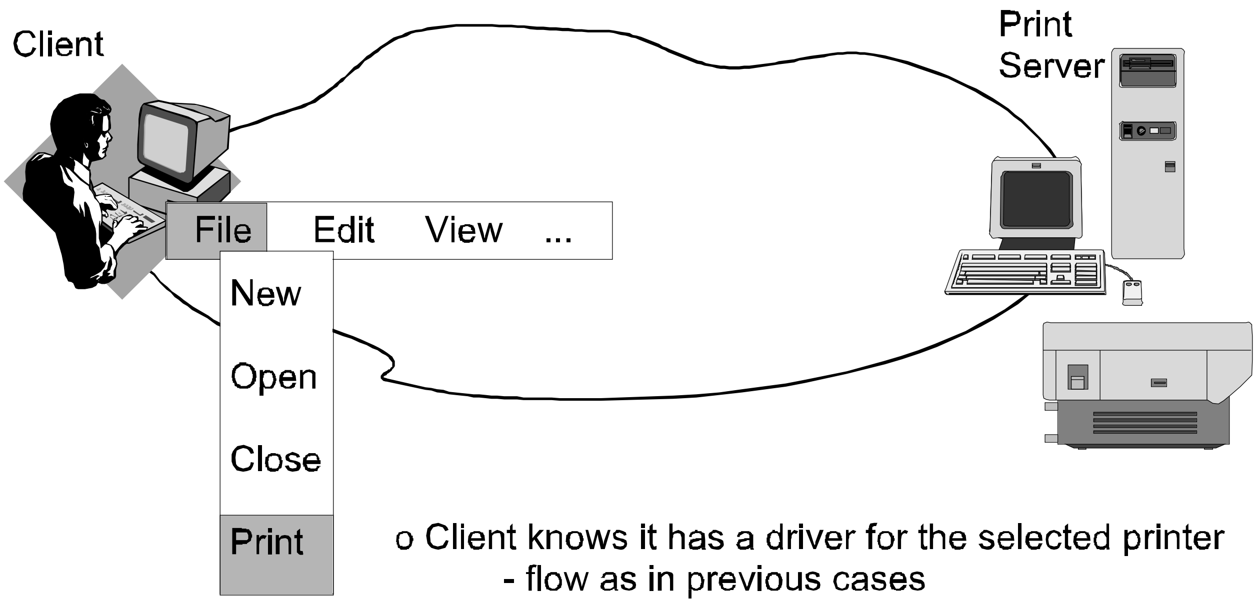
- What I did with it or error information
- Job/queue ID on server

"Give me a resource"

- URL of resource

Resource

Printing From an Application



o Client knows it has a driver for the selected printer
- flow as in previous cases

o Client does not have a driver
- get a driver from the server, or
- generate a canonical form that the server can bind to the specific printer at print time

Protocol Based on HTTP 1.0

- Simple
- Same Syntax and semantics
- Could result in an extension to HTTP or a new standard

HTTP Messages

```
Request    =    Request-Line
                *(General-Header
                |  Request-Header
                | Entity-Header)
                crlf
                [Entity-Body]

Response   =    Status-Line
                *(General-Header
                |  Request-Header
                | Entity-Header)
                crlf
                [Entity-Body]
```

where all HTTP Headers are of the form:

HTTP Header = field name ":" [field-value] crlf

Request-Line = Method   URL   Protocol-version crlf

Status-Line = protocol version Code Status-message crlf

Print Methods

- PrintJob
- ModifyJob
- CancelJob
- ListObjectAttributes

The Print Job

```
Print-Job        =     Job-Specification-Header
                       [Job-Specification]
                       *(Document)

Document         =     [Job-Ticket-Header
                         Job-Ticket]
                          Document-Content

Document-Content = Content-Header
                        URL | Content
```

Job-Specification

```
Job-Specification  =  *(Job-Specification-Header field)
                       crlf
                      *(Job-Specification-Attribute)


Job-Specification-Header field = Content-Encoding
                               | Content-Length
                               | Content-Type
                               | extension-header


Job-Specification-Attribute = Attribute-type: [value] crlf
```

Job Attributes

- Job Client ID
- Job Upstream ID
- Job Type
- Job Owner
- Job Name
- Date/Time
- Job Comment
- Job Priority
- Print ID on Server

Job Ticket

```
Job-Ticket  =  *(Job-Ticket-Header field)
                 crlf
                *(Job-Ticket-Attribute)


Job-Ticket-Header field = Content-Encoding
                          | Content-Length
                          | Content-Type
                          | extension-header

Job-Ticket-Attribute = Attribute-type: [value] crlf
```

Job Ticket Attributes

- Media
- Input-Tray
- Print-Resolution
- Plex
- Print-Quality
- Copy-Count
- Content-Orientation
- Finishing