# Internet Printing Project Meeting Minutes
# January 9, 1997
# Albuquerque, New Mexico

The meeting started on November 7, 1996 at 1:30PM. The attendees were the same as the PWG and PMP sessions of this meeting and were:

Ron Bergman - Data Products
Lloyd Young - Lexmark
Lee Farrell - Canon
Don Wright - Lexmark
Rick Landau - Digital
David Kellerman - Northlake Software
Scott Isaacson - Novell
Bob Setterbo - Adobe
Mabry Dozier - QMS
Jeff Copeland - QMS
Bob Pentecost - HP
Tom Hastings - Xerox
Harry Lewis - IBM
Roger Debry - IBM
William Wagner - Digital Products
Atsushi Yuki - Kyocera
Robert Herriot - Sun
Jeff Barnett - IBM
Carl-Uno Manros - Xerox
Keith Carter - IBM
Jim Walker - Dazel
Chuck Adams - Tektronix
Angelo Caruso - Xerox
Osamu Hirata - Canon
Greg LeClair - Epson
Tetsuya Morita - Ricoh
Yuichi Niwa - Ricoh
Ron Norton - Printronix
Stuart Rowley - Kyocera
Satoshi Yamamuro - Canon
Peter Zehler - Xerox
Keith Moore - University of Tennessee
Tim Campbell - HP

The meeting was called to order at 8:30 AM by Carl-Uno Manros. The following agenda was reviewed:

1) Report from San Jose IETF
2) Lexmark presentation
3) IETF Charter
4) Subgroup status
5) Document Split
6) Issues List
7) IPP Web Pages
8) Prototyping
9) Planning

Carl-Uno reviewed the San Jose IETF BOF for Internet Printing. Minutes and copies of the presentations were sent to the IETF for publication.

While there has been much discussion on the mailing list on the usage of HTTP, there has been little discussion on the use of LDAP. A short discussion on the status of LDAP occurred. It was recommended that we focus on a generic schema that could be mapped to any directory.

There was a short discussion on whether Internet Printing and Internet Faxing have significant overlap. At this time there seems to be little chance that the two groups will be combined.

Don Wright presented an overview presentation on work being done by Microsoft, Lexmark and Hewlett-Packard. A more detailed presentation of this material will be made at the February meeting. The presentation described some work in progress entitled "Print to URL" which uses HTTP and HTML to provide print status, driver download and remote print.

Review of the comments made by the Area Directories about the proposed charter:

1) Carl-Uno is the only chair listed. Should we have multiple chairs? -- No
2) Separate the various sub-projects (IPP vs. Directory, vs. etc.) in the charter
3) Question on why do we need this versus something else that already exists (RFC1179). We will need to write more justification about why LPR is broken.
4) If we are going to work with other standard bodies, we need to specify the names of those other bodies.
5) How tightly are we bound by the existing standards? Not completely - we have the flexibility move separately especially to simplify.
6) We will remove the sentence in the charter that says we "won't preclude other devices." The sentence about extensibility will also be re-worded.
7) I18N and Security will be stated to be covered in a separate document.

8) Discussion on use of MIME? Should the transport mapping be included in the charter?
9) If our solution is going to work for both server based implementations and printer based implementations we should include that in the charter.
10) We will put the definition, selection, etc. of the transport protocol in the charter.
11) Is it necessary to fully specify the discovery method? Could be LDAP, WEB browsing, Search engines, etc.

Sub-group Status

No group had any report for the meeting.

Security (no meeting today)
Scenarios and Requirements (Will meet)
Model and Semantics (Will meet)
Transport and Encoding (no meeting today)
IETF Charter (Carl-Uno and Keith Moore will work on this)

Document Splitting

At the IETF BOF we had two documents "Requirements" and "IPP." The current plan is to split up those documents and have the following:

Requirements (Don Wright)
IPP: Model and Semantics (Scott Issacson)
IPP: Directory Schema (Keith Carter)
IPP: MIME Encoding (?)

Based on the discussion about having the group actually define the protocol for the wire and the falling out of favor of having a major dependency on MIME could change the "Encoding and Transport" document so that it would actually define what goes on the wire.

Security

Roger Debry of IBM presented a list of the general security topics to be investigated by the security sub-group:

1) Administrator Access
2) User Access
3) Application of Policy
4) Accounting
5) Mutual Authentication
6) Data Protection (encryption)
7) Protection of Digital Property Rights

- Payment scheme
- Digital rights management language
- watermarking, fingerprinting

Keith Moore suggested that Digital Property Rights should be declared out of scope at least for version 1.

Issues List

Scott Issacson went through the issues list (issues4.doc) so see what is complete and to clarify some of the items. The updated version will be posted to the FTP server.

Subgroup discussion will be on the IPP reflector. Discussion should include one of the following three letter identifiers to help everyone sort their mail. These identifiers must be manually inserted at the beginning of the subject line by the sender.

REQ - Requirements
DIR - Directory
SEC - Security
MOD - Model
PRO - Protocol

Meeting adjourned at 12:10 for lunch.

Sub-group meetings were held in the afternoon to kick off the discussion on:

- Requirements/Scenarios
  - Minutes: Harry Lewis, David Kellerman
  - Started with Printing Scenarios
    - Push
    - Pull
    - Application
  - Documentation
    - Editor - Don Wright
    - Major Contributors - Roger Debry, Rick Landau
    - Phone call between Don, Rick and Roger at 10AM EST on Monday to layout the document structure and try to divide it up.
  - Job Status
    - All jobs
    - Specific user's job
    - What's the relationship between JMP and this?
  - Printer Status
    - What's the relationship between RFC1179 and this?
  - Detailed minutes of the discussion are as follows:

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Scenarios and Requirements Working Group Meeting
9-Jan-97

Attendees:
- Peter Zehler, Xerox (chair)
- David Kellerman, Northlake Software (minutes)
- Angelo Caruso, Xerox
- Don Wright, Lexmark
- Yuichi Niwa, Ricoh
- Ron Bergman, Dataproducts
- Satoshi Yamamuro, Canon
- Osamu Hirata, Canon
- Rick Landau, Digital Equipment Corporation
- Greg LeClair, EPSON
- Bill Wagner, Digital Products / Osicom
- Bob Setterbo, Adobe
- Chuck Adams, Tektronix
- Lee Farrell, Canon
- Roger DeBry, IBM
- Atsushi Yuki, Kyocera
- Harry Lewis, IBM
- Mabry Dozier, QMS

Job Submission
- o print a file
- o print from an application
- o print a URL
- o printer capability matching
  scenarios: ability to examine attributes prior to job submission;
  job submission interface tailored to capabilities;
  job rejection if capabilities not present
- o capability of printing long jobs
  implications for: length encoding, time-out considerations, line failures
- o handling device failure during reception of job
  scenario: server is printer
  concerns: client be able to recover cleanly from failure

Status Display
- o printer status
  - o queue status must be visible (jobs being held)
- o job status, both own jobs, and all jobs being processed by printer
- o notification of events, scoped according to what may affect job submitter
  directly affecting job, plus jobs in front of job
- o which status information is available where (HTTP, LDAP)
- o what tool/application used to retrieve status (browser, special app)

Driver Installation
- o environment specific
- o printer specific

- o configuration control
  - issue: automatic updating to current version of driver
    - administrative protocols for updating
    - (eg: software installation is administrative function;
      - user doesn't have authority/capability of updating new driver)
- o de-install
  - scenarios: manual removal; time expire; user-configurable
- o driver life-cycle
- o IPP aware
- o legacy
- o parts of driver: PDL preparation; transport & encoding; back channel status
  - issue: which components are to be installable?

Printer Discovery
- o list printers by selected criteria
- o how to register and update printer and capabilities in LDAP server
- o capabilities
- o what is returned as printer address?

Job Modification
- o cancel
- o hold (before printing, during printing)
  - issue: which capabilities supported?
- o moving jobs from one printer to another
  - scenario: use delete/resubmit to move job; if so consider case where use only rights to only print one copy of job, can't resubmit job

Security
- o visibility of job status

Scenarios
- o server is separate from printer
  - server of "unlimited capabilities"
  - local storage for spooling
  - may be able to serve multiple printers
- o server is embedded in printer
- o client is inside firewall
- o server is inside firewall
  - discussion: printer inside firewall doesn't have obvious solutions now;
    - are there tunneling protocols under development that address this?

Scenarios for Job Submission

- o print a file from client
  - o "here is a print job"
    - job information (owner, id, ..)
    - production instructions (input tray, simplex/simplex/duplex, finishing)
    - print data
    - target printer
  - o "I got it"
    - what I did with it, error information
    - job identification on server

o "what is the status of my job on the printer"
o "here's the status"

o "job is completed"

o print a file specified by URL
like "print a file from client" example, except:
o error messages may result in different sequence,
data is retrieved separately from job
o may need job attribute specifying whether data
should be retrieved now or later

o print from an application
like "print a file from client" example, except:
o data may be generated on the fly
o may see status display to show transfer progress

o print with asynchronous completion of transfer on client

o print with synchronous completion of transfer on client

o chunked data transfer
o "here's a chunk of data to print"
o "chunk is printed"
o repeat until complete

Scenarios for Status Display

o job status for specific job
o job status for selected jobs
all my jobs
all my active jobs
etc.
issue: what is starting point for set of job status attributes?
do we start from JMP attribute set, or IPP job attributes?
o job status for all jobs being processed by printer

... we ran out of time about here

Action items:

o Volunteers to write requirements RFC:
Don Wright, Lexmark (editor)
Roger DeBry, IBM
Rick Landau, Digital Equipment Corporation

Don, Rick, Roger will discuss RFC Monday, 13-Jan, 10:00 EST
will prepare draft for further discussion

o Issues list for other groups:

Peter Zehler

o Establish REQ forum
for now, just specify "REQ" in mail note subject

o Post scenarios diagrams on server, flesh-out with firewall, etc.
Roger DeBry

o Status on weekly phone conference
Peter Zehler

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- Models/Semantics
  - Should the basic model be a single printer model versus a nested printer model? -- single
  - Are print attributes mandatory? -- no
  - “Printer Farms” (printer pooling) are supported as a single printer to the remote client
  - Detailed minutes will be posted on the ftp server.
- Charter
  - Carl-Uno and Keith Moore worked on the charter
  - The group worked through it and did some wordsmithing
  - A new version will be posted on the ftp server.

<u>WEB Page</u>

- The current WEB Page is very minimal
- An off-line discussion on this subject will be held to determine where to go

The meeting adjourned at 5:45 PM.