Subj: Minutes, IETF/DMTF PWG Job Monitoring Project (JMP), May 23, 1996, Chicago

From: Tom Hastings
Date: 06/04/96
File: jm960523.doc, .ps, .txt

The sections follow the agenda outline. Action items are indicated as: **ACTION ITEM (name)**. The action items are repeated at the end of the minutes for convenience. They will be covered on the agenda for the next meeting.

1. Charter

The group re-affirmed the charter (file: **charter.do**c and **goals.doc**) with the following amendments:

1. Separate point 2 into two: MIB and MIF. Indicate that if we do a MIF, it will be for DMTF V2.
2. Point 4: change NPAP to TIPSI.
3. Point 6 Security: We agreed that the Job Monitoring MIB will not provide any additional security than that provided by SNMP. We also agreed that implementations will be allowed to respond differently with job information, depending on whether the job belongs to the user or not.

   ACTION ITEM (Tom Hastings and Ron Bergman): Rework the security goal along the above agreements and send to the DL for comment.
4. Points 7 and 8, change "printer" to "device", so that the Job Monitoring MIB could be used by other MIBs that support scan and FAX jobs.

   There was agreement to try to make the Job Monitoring MIB not preclude future FAX and SCAN MIBs using the non-printer-specific parts of the Job Monitoring MIB. Consultation with FAX and SCAN experts will be done, in order to make sure. However, if it proves to hard too have generic job groups and some printer-centric groups, the JMP may abandon this goal.

   ACTION ITEM (Tom Hastings and Ron Bergman): Rework the charter to make it more generic, but with some print-specific parts as well. Propose to the DL.

   For the July Meeting, we will invite Scan and FAX experts to review our job information to make sure that we are not precluding a future MIB to be able to monitor scan or FAX jobs and use the generic groups in the Job Monitoring MIB.

   ACTION ITEM (Tom Hastings and Ron Bergman): Draft a call to FAX

and scanning experts for the July meeting, so that various members can use to get attendance from their companies.

5. Concern over the size and scope of JMP. There was concern expressed about the size of the Printer MIB; that it was too big. It has two many mandatory information objects. On the other hand, the IETF does not like having very many OPTIONAL groups either. So we need to come up with a small number of information objects for JMP.

2. Job Submission Models

In reviewing the three configurations, there was agreement to focus on developing the MIB for implementation by agents for the printer and agents for the server that does the main scheduling. Use by other agents, such as intermediate forwarding servers and supervisors will not be the focus of the MIB, in order to simplify the project and to reflect the major anticipated implementations of the Job Monitoring MIB.

ACTION ITEM (Tom Hastings): Redraw the configurations in job-scen.doc to show a difference between the job submission path and the SNMP path.

3. Terminology

There were no new terms to review. We will collect terms for a glossary that will be part of the Job Monitoring MIB specification.

ACTION ITEM (Tom Hastings): Draft a definition for **job** based on previous meeting agreements and send to the DL. Also **document** and concept of **proxy**.

4. Roles and Required Information

We agreed that the role description in the draft Printer MIB will be the specification that the Job Monitoring MIB uses for roles. If there are any problems with the descriptions, we will fix them in the Printer MIB.

5. Goal Issues

5.1 Should the project include a 'Job Ticket' or 'Job Submission Protocol'?

We agreed that the Job Monitoring Project will standardize neither a job ticket specification nor a job submission protocol specification. However, the Job Monitoring MIB (and MIF) specification will contain information objects/attributes that came from or can be derived from a job ticket, if one was used in the job submission protocol. We also agreed that the Job Monitoring MIB specification will include information objects/attributes that came from or that can be derived from a job submission protocol or from the PDL data stream itself. In other words, the agent must get the information any way it can from the server or printer. Some printer implementations will contain PDL interpreters that leave information for the agent as the interpreter interprets the data

stream. This approach is the one used by SNMP MIBs, so the Job Monitoring MIB will be useful on its own.

5.2 What client software will support this MIB and what are the scenarios for use of the MIB by the software?

The following OS platforms were identified during the previous meeting. However, we decided to concentrate on job submission protocols, rather than OS platforms, since some platforms support multiple job submission protocols.

Windows: Windows 3.1
Windows for Workgroups
Windows '95
Windows NT
NetWare: 3.1X
4.X
UNIX: LPR/LPD (RFC 1179)
BSD Unix (SunOS, Ultrix, Digital Unix, others)
System 5 Unix (Solaris, HP-UX, SCO, IRIX, others)
AIX (3.25, 4.1, ...)
LAN Server
OS/2: (3.0, 4.0 beta)
WARP Server
Macintosh
VMS
NDPS
Printxchange
PSM

5.3 Do OS/NOS vendors need to participate?

We definitely want OS/NOS participation. The problem is how to get them involved.

ACTION ITEM (Harry Lewis): contact the DMTF OS person (Paul A Rocio?) for help in getting OS/NOS vendor participation, since the DMTF has OS developers participating.

5.4 Do we need to define platforms and protocols to be supported or are the proposed job submission models sufficient?

We agreed that the following job submission protocols needs to be considered in developing the Job Monitoring MIB/MIF. The following people are assigned to each protocol.

Job Submission Protocol	Responsible person
1. LPR/LPD - RFC 1179, PSIS extensions	Ron Bergman
2. AppleTalk PAP	Ron Bergman
3. TIPSI/NPAP	Don Wright

4. ISO DPA	Tom Hastings
5. NDPS	Craig Whittle
6. RPRINTER	Craig Whittle
7. PSERVER	Craig Whittle
8. SMB	Bob Setterbo
9. PJL	Binnur Al-Kazily
10. IPDS	Harry Lewis
11. PostScript	Bob Setterbo

ACTION ITEM (Tom Hastings): Contact Martin Kirk of X/Open to see if the PSIS draft can be made available to the PWG. If not the whole document, at least the Appendices that document the LPR/LPD extensions that have been implemented by DEC, HP, IBM, Sun, and Xerox.

6. Object/Attribute Categories

We brainstormed information objects/attributes in the following categories for the JMP. No attempt was made to prune out objects/attributes. No attempt was made to weed out duplicates. No attempt was made to quash bad ideas or to get agreement on any of these.

6.1 Job Identification

1. Job id on client
2. Job id on printer
3. Job id on intermediate server(s) - focus on main scheduling server
4. Job type (print, fax, scan, etc.)
5. Name of client node
6. Name of submitting end user
7. Job owner
8. Name of source port/channel
9. Domain of name of source port/channel
10. Source port/channel type
11. Job name assigned by end-user
12. Submitting application name
13. Document name(s)
14. Document file name(s)
15. Time of job submission
16. Job comment
17. Printer-specific id of printer

6.2 Job Status

1. Job state (held, pending, executing, completed, etc.)
2. Physical device(s) being used

3. Job state reasons - additional information about the job state: reasons being held, additional executing information such as device(s) needs attention, additional completed information such as successful, warnings, or errors.
4. Percent complete
5. (Logical) Pages executed so far
6. Impressions (sides) executed so far
7. Sheets executed so far
8. Processing time used so far
9. Time of day received by intermediate
10. Time of day sent from intermediate
11. Time of day received by printer
12. Time of day job started processing on printer

6.3 Job Parameters

1. Number of copies requested
2. Upper limit on processing time
3. Upper limit on number of pages
4. Media requested
5. Media path requested (one-sided, two-sided, LEF, SEF)
6. PDLs requested
7. Job priority
8. Deadline time
9. Discard (expiration) time
10. Color requested
11. Stapling requested
12. Finishing requested
13. Resolution requested
14. Fonts required/requested
15. Forms required/requested
16. Destination (including phone numbers for FAX, logical printers for printing)
17. Class requested (administrator-defined)

6.4 Accounting

1. Accounting User Name
2. Account Name
3. (Logical) pages completed
4. Impressions completed
5. Sheets completed
6. Simplex sheets completed
7. Duplex sheets completed
8. Octets completed
9. Processing time completed
10. Consumable consumed

11. Media types consumed (paper trays selected)
12. Devices used
13. Finishing used
14. PDLs used
15. Job Submission Channels used
16. Interfaces used
17. Human operator labor used
18. Setup time used
19. Wall clock time used executing the job
20. Fonts used
21. Phone charges
22. Wasted sheets
23. Number-up (N-up) used

There is a total of 69 objects/attributes from the above brainstorming. Several members expressed concern over the large number of JMP objects/attributes. There was concern expressed about the size of the Printer MIB; that it was too big and has two many mandatory information objects. On the other hand, the IETF does not like having very many OPTIONAL groups either. There was agreement that we need to reduce the number of objects/attributes by at least half for JMP.

ACTION ITEM (*responsible persons* indicated in the job submission protocol table in section 5.4): Map the brainstorming information objects/attributes to their assigned job submission protocol, so that we can weed out information objects that do not have wide support in job submission protocols. I'll post an MS-WORD table with the above attributes that we can each fill in and post back on the ftp site.

7. Collected Action Items

The action items are repeated here for convenience and for tracking at the next JMP meeting:

1. **ACTION ITEM (Tom Hastings and Ron Bergman)**: Rework the security goal along the above agreements and send to the DL for comment.
2. **ACTION ITEM (Tom Hastings and Ron Bergman)**: Rework the charter to make it more generic, but with some print-specific parts as well. Propose to the DL.
3. **ACTION ITEM (Tom Hastings and Ron Bergman):** Draft a call to FAX and scanning experts for the July meeting, so that various members can use to get attendance from their companies.
4. **ACTION ITEM (Tom Hastings)**: Draft a definition for **job** based on previous meeting agreements and send to the DL. Also **document** and concept of **proxy**.
5. **ACTION ITEM (Harry Lewis)**: contact the DMTF OS person (Paul A Rocio?) for help in getting OS/NOS vendor participation, since the DMTF has OS developers participating.

6. **ACTION ITEM (Tom Hastings)**: Contact Martin Kirk of X/Open to see if the PSIS draft can be made available to the PWG. If not the whole document, at least the Appendices that document the LPR/LPD extensions that have been implemented by DEC, HP, IBM, Sun, and Xerox.

7. **ACTION ITEM (*responsible persons* indicated in the job submission protocol table in section 5.4):** Map the brainstorming information objects/attributes to their job submission protocol, so that we can weed out information objects that do not have wide support in job submission protocols.