Subj: Comments on the Job Monitoring MIB charter
and the problems the Job Monitoring MIB solves
From: Tom Hastings
Date: 4/12/96
File: job-prob.doc
Version: 0.1

This paper contains comments on the Charter for the Job Monitoring Project (JMP) that Ron proposed based on further analysis of the problems that the PWG brainstormed that the Job Monitoring MIB might solve. I've also attached the problem statements with some sorting by role and priority.

1. Comments on Ron's proposed JMP Charter

I have the following comments on Ron's proposed charter:

1. The operator role seems to have been omitted, yet we had some high (H) rated problems that the job monitoring MIB should solve for the operator including H and M problems.

2. The capacity planner seems to have been omitted as well, so I added that role, including H and M problems.

3. From RFC 1759, the Asset Manager is mainly interested in determining which assets, such as printers, are on the network, so it would seem that the Job Monitoring MIB won't solve his/her problems, so I propose we delete the Asset Manager.

4. From RFC 1759, the Capacity Planner also seems to have an "optional" role as accountant. I suggest that we make a separate role and call it accountant. (Maybe even add the accountant role to RFC 1759 Appendix D? I included the H and M problems for the accountant.

2. Proposed Updated JMP Charter

So here is Ron's proposed JMP charter from his 4/11 e-mail with some proposed additions and changes based on an analysis of the problems being solved (see end of this document). The revision marks show the proposed changes to the charter:

The following is an update to the proposed draft for the Job Monitor MIB project charter. Comments are still accepted!

The Printer Job Monitoring and Resource Accounting MIB Project

This project shall develop a set of objects for the management and monitoring of the status and progress of print jobs and to obtain resource accounting data at the completion of a job. The object set will initially be developed independent from the management system format. When the object set is finalized, an SNMP MIB and a DMI MIF will be developed. The object set may also be ported to other formats, such as SENSE, as an extension to this project.

The job MIB is intended to provide the following information for the indicated Role Models (see Appendix D - Roles of Users in RFC 1759).

User:
- (U1) - An Alert indication that his job has completed.
- (U2) - The current status of the user's job(s).
- (U3) - Error and diagnostic information for jobs that did not successfully complete.
- (U4) - An Alert indication that data transfer to the printer, for the user's job has commenced.
- (U5) - An indication of the state of the printer(s) to allow the user to select an available printer.

Operator:
- (O1) - A presentation of the state of all the jobs in the print system
- (O2) - Which users submitted each job
- (O3) - What resources does each job need
- (O4) For which physical printers are the jobs candidates
- (O5) Some idea of how long each job will take

Capacity Planner:
- (C1) - How busy are printers
- (C2) - What time of day are they used.
- (C2) - How long do users' jobs wait before starting to print

~~Asset Manager:~~
- ~~(A1) - A record of resources used by users or groups or in total.~~

Accountant~~Capacity Planner~~:
- (A~~C~~1) - A record of resources used and printer usage data (n-up, duplex) for charging users or groups for resources used.

3. List of problems for the Job Monitoring MIB (from minutes)

Here is the list of problems that the job monitoring MIB might solve, according to the roles of the user from RFC 1759 and a priority ranking of high (H), medium (M), and low (L) developed at the March 1996 meeting of the PWG (extracted from the minutes without changes):

Job Monitoring

- What problems are to be solved for the end user?
    - When is my job fully in the output bin?
    - What is the status of Job (before, during, after)?
    - Which printer is the least busy printer?
    - How long will it take for my job to print?
    - Notification of job complete
    - Where did my job print?
    - How many pages were/are in my job (before and after printing)
    - Did my job print OK, if not why not?
    - How many jobs are in front of my job?
- What problems are to be solved for the administrator?
    - What path did the job take to get to the printer?
    - What resources did the job use?
    - What resources does each printer have?
- What problems are to be solved for the operator?
    - What media do the pending jobs need?
    - Where (which channel) are the jobs coming from?
    - When will I have to add paper?
    - What jobs for which users are at what point in the print system?
    - What candidate physical printers exist for each job?
        - help end user
        - load balancing
        - baby sit jobs
    - Help operator who schedules jobs, resources needed by jobs
    - How many jobs failed and why? Who submitted it?
    - How long will any specified job take?
    - How long since last page was output?
- What problems are to be solved for the technician?
    - What job errors are occurring.?
    - Who will be affected if I take the printer down for PM? (Operator also)
    - When is this printer least busy (time of day)
- What problems are to be solved for the administrator/capacity planner?
    - What resources are being downloaded by the jobs?
        - to help decide what should be resident
    - Which applications are jobs coming from
    - How long do user's jobs wait in the queue before starting?
    - How busy are the printers?
    - How long are the jobs (distribution of size: pages, time, etc.)?
    - daytime versus nighttime printing amount? ratio?
    - Who used how much of each resource?
    - Measure of n-up and duplex printing usage
    - History of why the printer stopped
        - who?
        - when?
        - why?
        - how long?
    - Tons of accounting information

4. Updated detailed list of problems by role and priority

I synthesized the following list from the above March minutes and the attachment to the March minutes. Then I sorted them according to Role and then Priority. Then I used the H and M problems to make the above comments on the JMP Charter.

1. What are the problems the Job Monitor MIB will solve?

Problem	Role	Priority
1. Notification (alert/trap) of job complete	User	H
2. Is my job completed (fully in the output bin)?	User	H
3. Was my job printed successfully (if not, why not)?	User	H
4. What is the current status of my job (before, during, after)?	User	H
5. Which printer is the 'least busy'?	User	M
6. What time will my job be complete (how long will it take)?	User	M
7. Where did my job print (which physical printer)?	User	M
8. How much did my job cost?	User	?
9. Will my job print?	User	M
10. How many jobs are ahead of my job?	User	M
11. What resources does each printer have?	User	M
12. How many pages in my job (while and after printing)?	User	L
13. What resources did my job use?	User	L
14. What media do the pending jobs require?	Operator	H
15. What jobs for which users are in which system states (to help end users, to balance loads, to ensure all jobs are progressing)	Operator	H
16. What jobs for which users are at what point in the print system?	Operator	H
17. Which physical printers are candidates for each job (to help end users, to balance loads, to ensure all jobs are progressing)?	Operator	M
18. How can print jobs be scheduled more efficiently (what resources are needed by pending jobs for operators who participate in scheduling jobs)?	Operator	M
19. How long will any specified job require to print?	Operator	M
20. When will I have to add paper or other consumable to the printer (based on jobs)?	Operator	L
21. What print job delivery channel(s) are the jobs using?	Operator	L
22. How many jobs failed?	Operator	L
23. Why did jobs fail and who submitted them?	Operator	L
24. How long since the last page printed?	Operator	L
25. What users will be affected if I take the printer down for preventative maintenance?	Technician	M
26. What job errors are occurring (memory insufficient for job? too many pages printed, etc.)?	Technician	L
27. What resources are being downloaded by jobs (to help decide which resources should be resident)?	SysAdmin	M
28. Why was printer stopped when it was stopped?	SysAdmin	M

29. How long was the printer stopped?	SysAdmin	M
30. Whose job was printing when the printer stopped?	SysAdmin	M
31. What path will the job take to get to the printer?	SysAdmin	L
32. Which applications are jobs running from (S/W licensing, planning, upgrades)?	SysAdmin	L
33. How busy are printers?	CapPlanner	H
34. What is the job usage of the printer vs. time of day?	CapPlanner	M
35. How long do users wait before the job starts?	CapPlanner	M
36. Day time/night time job utilization (when can I turn off printers)?	CapPlanner	M
37. What is the size distribution of jobs (do I need a larger printer)?	CapPlanner	L
38. What resources are used by whom (paper, toner, etc.)?	Accountant	H
39. Additional accounting data	Accountant	H
40. How much N-up and duplex printing is being done?	Accountant	M