DMTF Printer Management Working Group
Mountain View, CA
December 7, 1994 - December 8, 1994

Attendees:

Don Wright - Lexmark
Andy Davidson - Tektronix
Steve Zilles - Adobe
Stan McConnell - Xerox
Joel Gyllenskog - HP
Randy Turner - QMS
Theodore Kearley - QMS
Bob Herriott - Sun
Victor Villalpando - Canon Information System
Harry Lewis - Pennant
Craig Douglas - Quintar
Bill Wagner - DPI
Bob Setterbo - Adobe

The meeting began at 9:00 AM.

Joel Gyllenskog reviewed the planned agenda for the two days.

The meeting kicked off with a discussion of the viability and usability of SNMP (and potentially DMI) for use as a way to manage jobs in and for the printer. Problems were identified in the fact that SNMP is not a guaranteed reliable channel.

Using SNMP for something like job accounting might be reasonable.

The group looked at the nested Session/Job/Doc concept from CPAP and how that might apply. The group felt that a two level model for documents within jobs as an appropriate model for printers.

Harry Lewis made a proposal as to the objects that might be included in a Print Job Table:

- Index
- Job Name
- Description

- Instance (Not needed)
- Associated Forms
- Associated Resources
- Page Parameters
  - Duplex
  - N-Up
  - Copies
- Print File Name
- Creation Date/Time Stamp
- Size
  - Estimated
  - Actual
- Current Device
- Status

The group discussed several of these objects and some of the ramifications of those objects. A discussion on the need to make an index accessible. After some discussion and consideration of the earlier discussion of a two level model using "documents" and "jobs", two separate tables were defined: a jobs table and a document table.

Document Table	
	Index (or Doc ID)
	Job ID
	Document Type
	Description
	# Associated Resources
	-- Resource 1
	-- Resource 2 ...
	Interpreter ID
	# Inputs used
	-- Input ID
	-- # Impressions
	-- # Sheets
	-- Media Char
	-- Media Type
	-- Media Desc
	# Outputs used
	-- Output ID
	-- Sheets Output
	Marker Supplies
	-- Supplies Used
	Processing time
	Marker ID
	Media Path ID
	Status

Job Table	
	Index (or Job ID)
	Owner
	Host
	Name
	Channel ID
	First Doc ID
	Docs Count
	Status
	Time Started
	Time Ended
	Total Bytes
	Error Count
	Warning Count
	Error String
	Comment

A discussion occurred covering the subject of how legacy systems and files would be mapped to the two level "documents" and "job" architecture. This groups recommends that an integral number of pages will be "charged" to a documents. This forces some restrictions on PDL implementations in the area of flush or printing partial pages on document boundaries.

The group reviewed and finalized a proposed set of job/document accounting record items that can be used by a future group developing a job or job accounting MIB/MIF.

Since we don't utilized two dimensional arrays, accounting object for INPUT or OUTPUT are in another table associated with that document. (Similar to Marker Supplies in the Common MIB)

Status during the job would be achieved by extending the alerts table to include job and document IDs.

The issue of how many entries of documents and jobs should be included in a printer must be resolved. Some customers could demand that the print cease printing when the job/document table fills and the records have not been read.

Marker supplies used by a document could be determined by reading the marker supplies level before and after the document and returning the difference.

A discussion was held concerning the visibility of the group developing the finishing MIF. Apparently, the existence of that working group was not as well known some companies would have liked.

The group adjourned at 5:15 PM.

The group reconvened at 9:00 AM.

There are two agenda items:

1) Additional Error Codes
2) MIF <--> MIB

Additional Error Codes

Joel led off the discussion by identifying a deficiency in the list of error codes (prtAlertCode). For example there is no error code for "Manual Feed." The group discussed the proper way to add these additional error codes at this point in the process. Steve Zilles will write up a proposal as to how this group will continue to exist to deal with future identified updates. Steve will work with the IETF hierarchy to attempt to find a workable solution. The group will identify an editor to keep documentation up to date. That editor may or not be empowered by the IETF to act in any formal way but the group would prefer this continuing work. The group would like to insure that any methodology addressing updates operate in a very timely fashion.

Joel's proposed additions are:

809	Input Media Type Missing -or- Requested Input Media Missing
810	Input Manual Feed Required

MIF <--> MIB

We will handle host resources MIB Objects as we translate to MIF in the following ways:

hrMemorySize	No special handling required
hrStorageIndex	No special handling required
hrStorageType	Change to enumeration use last digit of the OID
hrStorageDescr	No special handling required

hrStorageAllocat	"
hrStorageSize	"
hrStorageUsed	"
hrStorageAllocationFailures	"
hrDeviceIndex	No special handling required
hrDeviceType	Change to enumeration use last digit of the OID
hrDeviceDescr	No special handling required
hrDeviceID	Change to use a string (len 63) rather than OID
hrDeviceStatus	No special handling required
hrDeviceErrors	"
hrProcessorFrwID	Change to use a string (len63) rather than OID
hrProcessorLoad	No special handling required
hrNetworkIfIndex	For MIF, refers to the MIF surrogate for MIB-II Interfaces Table
hrPrinterStatus	No special handling required
hrPrinterDetectedErrorState	No special handling required
hrDiskStorageAccess	No special handling required
hrDiskStorageMedia	No special handling required
hrDiskStorageRemovable	No special handling required
hrDiskStorageCapacity	No special handling required
hrPartitionIndex	No special handling required
hrPartitionLabel	No special handling required
hrPartitionID	Change to use a string (len63) rather than OID
hrPartitionSize	No special handling required
hrPartitionFSIndex	No special handling required

It was observed that if there are no hrDeviceTable entries for a Processor, Network interface, StorageMedia then the corresponding tables will be empty.

It was observed that even though the above guidelines establish a strong relationship between the MIB and MIF, the different structuring of the Host Resources MIB and the rules for MIFs mean that no blind mapping of the MIF groups we define to the Host Resources MIB is possible. Any such mapping will necessarily need to special case the structure and some attributes/objects.

Harry Lewis graciously agreed to integrate the text for these objects into the MIF 0.4 file

Harry will integrate the Interfaces Table from MIB-II as the solution providing an equivalent table in the MIF. The group is to review the result and recommend either acceptance or a replacement proposal.

MIF2MIB translation

The translation posted to the HP ftp server had at least two problems.

1. the generated names to not match the names in the MIB. It is possible that this is due to a failure to correctly specify the name prefix to be used in the translation. Andy Davidson will pursue this.

2. the numbers of the major tables in the MIB did not get the same OID segment numbers even though the MIF Group ID was the same as the MIB table number. It is thought that the translator is numbering the MIF Groups/MIB Tables sequentially. Therefore the MIF will be structured to have the same number of groups as the MIB has tables in the same sequence.

1PM:

Chris Wellens, Internetworking Labs, Inc. (chris@cavebear.com, 408-459-9817)

Product is a test driver for one to sixteen agents

SNMP, RMON tester is $4500, runs on Unix (SunOS4.4.1, not Solaris yet)

Need X Display to view the results

looking at porting the suite to a PC Unix

Developing a Printer MIB tester

Would provide a script for test personnel to generate the physical caused errors such as pulling a paper tray; then, driver would display results sent for validation.

Also developing DSI, Uninterruptable Power Supplies, Relational Data Base MIBs

Support: errors accepted by E-mail, response typically in one week.