Minutes of the PWG *Web Based Monitoring and Management* San Jose meeting February 25, 2004

Harry Lewis
02/25/04

Attendees

- Ken Anderson, Silex
- Ron Bergman, Hitachi
- Lee Farrell, Canon
- Harry Lewis, IBM (Secretary)
- Ira McDonald, High North (by phone)
- Fumio Nagasaka, Epson
- Hitoshi Sekine, Ricoh
- Jerry Thrasher, Lexmark
- Bill Wagner, NetSilicon (Committee Chairman)
- Peter Zehler, Xerox

General Discussion

We reviewed the agenda for today's meeting and accepted minutes from the Provo meeting.

Process Issues

WBMM will require extensions to the PWG Semantic Model, some of which are derived from the Job MIB, Printer MIB and other MIB extensions. We are reminded that, before it can achieve Candidate Standard, WBMM must complete schema definitions and should create WSDL that matches the last-call specification. While MIB extensions are being used to help document new schema in some cases, a MIB extension for every new WBMM element is not mandatory. Realistically, however, SNMP will play a key role in the initial adoption of WBMM as management applications are expected to interact with proxies using SNMP for some time while device capabilities evolve from legacy SNMP to native WBMM.

Metering Services

We reviewed usage metric counters ftp://ftp.pwg.org/pub/pwg/wbmm/white/PWG-Usage-Counters-Table-0.10.pdf which define counters for Copier, e-mail (in/out), PSTN

FAX, Network FAX, Scan and Print. We highlighted the definition of “Image” (the digital image of a sheet side) as distinct from the graphic arts use of image or the term “Impressions” (the passage of a sheet through the imaging path). Further, we discussed the granularity of metering, investigating questions such as whether PSTN FAX and Internet FAX should be combined (no) or whether Internet FAX should be lumped with other network protocols such as e-mail (no). We recommended adding new services such as OCR, scan or copy image processing (sharpen, scale) and/or image or PDL transforms. We suggested combining these along with other translations and transformations (ex. Microsoft Office Word format to PDF) all under the heading of Transform Services. We agreed that the base unit of measure for a Transform service should be kBytes.

Time Counters

Time counters are necessary to support Service Level Agreements that specify the percentage of time that a service may be unavailable due to maintenance or some other form of down time. Unit of measure will be seconds. We already have DownTime and MaintenanceTime in seconds. Add TotalTime (durable sysUpTime in seconds). IdleTime is derived by subtracting ProcessingTime, DownTime and MaintenanceTime from TotalTime.

Note: In timer descriptions in the current table, change “running power-on counter” to TotalTime counter.

We agreed to make time counters mandatory for the overall device and optional for specific services (Scan, Fax, Print, Copy etc.).

Use Counters

We discussed a simplification to output related counters such that, using TotalSheets and TotalImpressions, one might derive TotalTwoSidedSheets (Black or Full Color). This simplification fell apart, however, because it cannot distinguish color vs monochrome two-sided printing.

Need to add TotalBlackSheets and TotalFullColorSheets.

TotalLocalFileKOctets and TotalNetworkFileKOctets will be changed to TotalLocalStorageKOctets and TotalRemoteStorageKOctets to clarify their intended application. For gauging network storage, KOctets is the most appropriate unit of measure. For gauging local storage, however, it is more interesting to know how often some high-water mark has been exceeded. This is a better indication of the potential need for a larger disk in the MFP than raw KOctets stored at any given time or over time. HighWaterMarkExceeded (or

NearlyFull, ThresholdExcedded) will be added to indicate how many times the local storage nearly maxed its utilization to the point where jobs could be lost or performance could be hindered.

We may also want to add TotalInKOctets, TotalOutKOctets, TotalInputMessages and TotalOutputMessages to gauge overall network traffic to and from the MFP.

MIBs

Ira has proposed an Imaging Systems MIB to address the MFP including Scan, Copy and Print services. System, Services and Device attributes use the same set of enumerated attributes. There is a question of splitting off MIB development, prototyping and test so as not to slow down WBMM adoption. Some people feel that full and formal modeling of the MFP via the creation of the Imaging Systems MIB is necessary for WBMM to succeed while others feel a simple MIB definition of the usage counters is sufficient to support legacy SNMP implementation and proxies. This debate was not completely settled.

Schedule.xsd

Ira posted an HTML version of scheulde.xsd, the schema that represents elements used in scheduling WBMM actions and operations. This was reviewed and accepted with only minor editorial comments and actions recorded.

Resource.xsd

We reviewed the Resource schema which addresses management of fonts, forms, firmware, logos etc. This is a very significant aspect of WBMM because, heretofore, the PWG has consistently avoided addressing resources. We discussed the use of "Persistence" as a resource attribute and the meaning of the values "Other", "Job", "Volatile", "non-Volatile" and "Permanent". "Job" implies that, while the resource may currently reside in the MFP, it was either placed there temporarily by a previous or current job or has been downloaded and marked with a specific Job ID and the resource is expected to be managed out by subsequent resource actions. "Permanent" means that a reset to factory defaults will not alter the resident resource.

Send schedule or get schedule. Plan row. Action is set Resource. In that action set resource has a parm which is a resource object. This sends all the resource metadata. This includes the resource data array. References to data elements of the resource. MIME type would say "executable software" (ex. .exe). Resource data URI – http or ftp URL on some server from which this firmware can be fetched. SetRecourse sets the metadata. You don't have to download immediately. ResourceDataPresent – state change causes event.

For fonts you really want lazy caching. Named fonts… only get when needed. But for firmware… you want now. Currently, schedule only applies to metadata for firmware updates, not the actually retrieval and installation of the firmware. The desired semantic is that the device will handle retrieval and installation in a safe and secure manner in a prompt manner after the schedule triggers.

We recognize the need for secure access control to setting all resources as well as retrieving any resource from the device.

We acknowledge the WBMM Resource.xsd and associated operations as an emerging standard for downloading firmware to the device. Sensitive businesses, such as Banks, will likely require a multi-step process of first downloading firmware to the customer's administrative domain, and verified before using WBMM to achieve the firmware update on the device or fleet.

PrintMIB.xsd

We reviewed and accepted the PrintMIB.xsd which is a machine translation of the printer MIB v2 (using Ira McDonald's MIB to .xsd translation tool). Each table in the printer MIB and each columnar and scalar object is translated into XML (simple or complex) elements that have the exact data structure and element names which are in the printer MIB except for naming convention fix-up (ex. prtInterpreterVersion changes to PrtInterpreterVersion).

PrintViews.xsd

This is a proposal for different views into the PrintMIB elements based on the need to filter on configuration, status or alert information for applications that are monitoring systems for status, life counters and config change events. This is an attempt to address the code ring problem we had with the MIB. Using PrintViews, for example, you can retrieve a set of collected status elements from all the various tables getting all the status elements and only the status elements.

Use Models

We reviewed Passive and Active mode use models.

Passive Mode

Device knows (is pre-programmed with) the DNS name (URL) of some WBMM management proxy which it should come up, talk to and register itself with for management. Uses IPP like upgrade to TLS for secure connection.

Active Mode

Especially for non-HTTP binding. Association is a-priori. The management proxy or station sends a SetScheduleRequest , which contains a schedule object, through the firewall (ex. SOAP over e-mail) to the managed entity. Device sends SetScheduleResponse back via the same or alternate transport. (Note: add parm to SetScheduleRequest that indicates where (URL) to respond) Same transaction ID not same transport. This mode facilitates a practical e-mail tickle using “SetSechedule” . The managed entity wakes up and uses HTTP WBMM to GetScheudle.

Next Steps

Finish definition of operations. Add parms (such as returns for some operations, error returns) and access control and enumerated list of roles, user groups etc. Editorial work on counters.

Next Conference Call

The next WBMM meeting will be conducted via conference call.

Time: Noon Eastern (9am Pacific) March 3, 2004

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