PWG Projector & Display Management (PDM) Working Group

PWG F2F Meeting

December 2007

Austin, TX

Projector & Display Management WG

- (If you've seen the intro recently, go to slide 6.)
- Call for participation at PWG quarterly meeting early 2006
- Began in earnest July 2006 with critical mass
  - Projector vendors and OEMs
  - Management software developers
- Weekly concalls
  - Tricky to schedule: Austin, Dallas, New Jersey, Seattle, LA, Singapore, Taiwan, Tokyo
- PWG email reflector (pdm@pwg), PWG FTP site for docs
- As of May 2007, a real working group in PWG

Goals

- Develop a data model for the management data of video projectors and video displays
- Management = Is it healthy? Capabilities? Is it on? Turn it off. Current settings? Adjust settings for usage model.
  - NOT deliver data
- Projectors = Installed projectors from small conference room to theater
  - NOT low-end, personal, carry-around
- Displays = Large, (semi-)permanently mounted displays, digital signage, wall, kiosk, up to jumbotron
  - NOT desktop monitors

Gradual Approach

- Agreed on targets, requirements for management
- Develop architectural model
  - Started with Printer MIB model
- Define common use cases
  - Inventory, manage power and consumables
  - Save and restore settings for usage profiles
- Divide and conquer
  - Everyone takes some use cases, some groups, some data items

Working Method

- Define abstract data model
  - Using abstract language template in XML
- Generate usable SNMP MIB first
- Provide consistent naming, datatypes, semantics for other access points: embedded web server, serial, CIM MOF

Participation

- Active companies
  - Canon (& PWG): Lee Farrell
  - Coretronic (Optoma): Vincent Chen
  - Crestron: Dan Jackson
  - Dell: Rick Landau, Nick D'Alessio, Vincent Ng
  - Delta Electronics: Jason Tsai, Josephine Lee
  - Epson: Hiroyuki Hashimoto
  - NEC: Koichi Ara
  - SpinozaTechnology: Randy Massengale, Devin Fujimoto
  - Symon Communications: Raymond Rogers

Recruiting

- Still recruiting
  - Need especially display companies and software/controls companies

Current State

- Groups, properties defined using XML template
  - So we can generate at least part of MIB & MOF
    - XSLT translation to MIB fragments works
- Doc of syntax rules collected from template, minutes of many meetings, comments from Ira and others

Current State (cont'd)

- Concentrate on power control, health and status, very basic video and audio controls, a few capabilities, alerts
- Approx fifteen (15) groups defined, working on several others
- Current MIB draft compilable
  - Missing a few groups and a few properties

Groups Currently in Draft

- Alert
- Audio
- Button
- Connector
- Console Light
- Controller
- Display capability
- Display setting
- Fan
- General
- Interlock
- Light source
- Locale Language
- Locale Charset
- Optics
- Power state
- Temperature sensor
- Temperature switch

Groups Remaining to be Drafted

- Filter

Groups for V1

- Alert
- Audio
- Button
- Connector
- Controller
- Display capability
- Display setting
- Fan
- Filter
- General
- Interlock
- Light source
- Locale Language
- Locale Charset
- Power state
- Temperature sensor
- Temperature switch

Mandatory vs Optional Properties

- Conformance sections remain to be written formally
- Mandatory groups, e.g., General, Light Source
  - Devices must implement all properties of the group
- Optional groups, e.g., Interlock, Audio
- If a device implements a group, it must implement the mandatory properties of the group

PowerState Specifications

- Defined set of power states
  - Manufacturer chooses a subset to implement
    - Full power: On
    - Transitional states: Warming, Cooling
    - Reduced power: PowerSave, Standby, ActiveOff
    - Terminal states, need human intervention: DeepSleep, Off
  - States define condition of lamps, fans, mechanicals, electronics, management agents, communications
  - Some state transitions implemented, some not
  - Needs serious review from a variety of vendors
    - Architecture question: network management interface MUST be alive in reduced-power states
    - Recently discussed with major vendor of reference designs

How to Make a MIB

- Translate from XMLs to ASN.1 using XSLT
  - Table headers
  - Properties
  - Textual conventions for enumerated values
- Assemble translated text into skeletons in order
  - PROJECTOR-DISPLAY-TC
  - PROJECTOR-DISPLAY-MIB
- Fixup artifacts using Perl
- (Automated with GNU make)
- Maintenance 100% in XMLs and build process: NO HAND EDITING

Recent Work on MIB

- Revised many groups for new naming and numbering conventions, default values
- Fixup scripts to repair translation problems
- Progress toward a MIB
  - Current draft compiles on some MIB compilers
    - Still a few nits for the pickier compilers
- Still needed
  - One group (Filter)
  - A few names are too long
  - Probably still a few straggler properties needed
  - Introductory text for MIB document a la RFC
  - Conformance rules

Documents

- FTP area on ftp.pwg.org/pub/pwg/pdm
- Group and property definitions
- Current MIB drafts
- Zip archives of files used to build MIB

Roadmap

- SNMP MIB produced entirely by translation
  - Complete translation surprisingly practical
- MIB draft final late Q1 CY2008
- Send out for public comment period
  - Expect some revisions, additions as a result
- Look for prototype implementations
- Candidate H2

Look at Source Documents?

- Everything is in the FTP area