



Some Requirements for Projector & Display Management

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Purpose

- A few questions to get discussion started
- Begin to describe the variety of devices in the class
- Form working group that wants to develop models and standards for management of these devices

Scope of Devices

- Projector devices and video displays
 - Generally, but not always, installed in fixed location
 - Projected, backlit, or individual pixel display
 - Range of devices from plain video input to language interpretation

video ----- html ----- pdf, postscript

- Range of devices from portable projectors to digital signage

projector ----- kiosk display ----- jumbotron

- Wired or wireless management

Projector/Display is an Imaging Device

- Like any other imager
- Projector or display is a built-in utility at some location, like a shared printer for a workgroup
- Use existing models from printer technology, wherever appropriate
 - Model approximately like a printer's related subsystems

Goals of Management

- Reduce cost of ownership
- Increase user satisfaction
 - Installed projector/display always works
 - I don't have to carry a projector with me
 - I don't have to stock spare projectors, just bulbs
- Increase quality of service and availability
 - High-quality image, bright image
 - No missing pixels
- Reduce user dissatisfaction
 - Primary dissatisfiers: lack of availability, reliability, poor appearance

What Characteristics to Manage?

- Static capabilities: what the device can do if it is healthy
 - Asset info, version info, display resolutions, communications supported, languages supported, inputs supported, etc.
- Configuration: restrictions on or site-specific values for capabilities
 - Comm channels and inputs on/off, light intensity, keystoneing, zoom, autofocus, preferred resolutions, color balance
- Dynamic status: anything that affects the usability of the device
 - Immediately: bulb, backlighting, pixels, fan, temp, communications
 - Future: consumption of bulb lifetime, running temp high

Printer-like Subsystems of a Projector/Display

Subsystem of Printer	Possible interpretation for Projector or Display
Inputs	n/a
Media	n/a
Outputs	n/a
Markers	Resolutions available for display
Supplies	Consumables: bulbs, backlighting
Channels	Communications paths: LAN/WAN protocols, other connections (e.g., serial port)
Interpreters	Language interpreters, with capabilities, version info
Console	Front (top) panel lights
Alerts	Warning and critical failure events for all the other subsystems

Other Subsystems of a Projector/Display

- Fans, cooling, shutdown timing, temperature, thresholds
- Display geometry (not quite analogous to paper sizes):
keystoning (perspective correction), zoom, aiming, focus
- Other?

Next Steps

- Organize a working group
 - Chairpersons, editors, contributors, watchers
- Find a home in a standards organization
 - Most likely candidate: Printer Working Group, www.pwg.org, a program in IEEE ISTO
- Set goals
- Develop model(s) of devices
- Develop schema of management data
- Implement testbeds, refine model and schema
- Publish

Backup

Current Interested Companies, People

- Dell: Rick Landau, Nick D'Alessio
- Epson: Hiroshi Midorikawa
- NEC: Ara Kouichi
- Sony: Imahashi Kazuyasu
- Spinoza: Randy Massengale