PWG Power Management Project
WIMS WG

14 October 2009

Cupertino, CA - PWG F2F Meeting

Model – Summary

- Status
  - Power Monitor (REQUIRED) – current state
  - Power Log (REQUIRED) – state transition w/ timestamp

- Capabilities
  - Power Support (RECOMMENDED) – list of states
  - Power Transition (RECOMMENDED) – list of transitions

- Settings
  - Power Request (OPTIONAL) – state change request
  - Power Timeout (OPTIONAL) – list of timeout policies
  - Power Calendar (OPTIONAL) – list of calendar policies
  - Power Event (Option) – list of event policies

Model – Status

- ## Power Monitor (REQUIRED)
  - Power State (PowerStateWKV) – current power state
    - On, Standby, Suspend, Hibernate, etc.
  - PowerStateMessage (string) – detailed state message
    - "Standby from timeout trigger (18 watts)"

- ## Power Log (REQUIRED)
  - LogID (int (1..MAX)) – KEY – used in Schema/MIB
  - Power State (PowerStateWKV) – logged power state
    - copy of PowerMonitor.PowerState
  - PowerStateMessage (string) – detailed state message
    - copy of PowerMonitor.PowerStateMessage
  - PowerStateTimestamp (dateTime)

Model – Capabilities

- Power Support (RECOMMENDED)
  - PowerState (PowerStateWKV) – KEY – supported state
  - PowerUsageWatts (int (0..MAX)) – nominal consumption
  - MayAcceptJobs (boolean) – unless Disabled by Admin
  - MayProcessJobs (boolean) – unless Paused by Admin
  - MayRequestPowerState (boolean) – in Power Settings

- Power Transition (RECOMMENDED)
  - StartPowerState (PowerStateWKV) – KEY – old state
  - EndPowerState (PowerStateWKV) – KEY – new state
  - StateChangeSeconds (int (0..MAX)) – transition time

Model – Settings

- Power Request (OPTIONAL) - operation
  - RequestPowerState (PowerStateWKV) – new state
  - RequestStatus (PowerRequestStatusWKV) – result
    - None, InProgress, Warning, Error, Success

- Power Timeout (OPTIONAL) - policy
  - TimeoutID (int (1..MAX)) – KEY
  - RequestPowerState (PowerStateWKV) – new state
  - StartPowerState (PowerStateWKV) – old state
    - Timeout restriction (e.g., On to Standby transition)
  - TimeoutPredicate (PowerTimeoutPredicateWKV)
    - None, Activity, Inactivity
  - TimeoutSeconds (int (0..MAX)) – timeout interval

Model – Settings

- Power Calendar (OPTIONAL) – policy
  - CalendarID (int (1..MAX)) – KEY
  - RequestPowerState (PowerStateWKV) – new state
  - CalendarIsOnetime (boolean) – onetime vs repeated
  - CalendarWeekday (PowerCalendarWeekdayWKV)
    – None or Sunday...Saturday
  - CalendarMonth (PowerCalendarMonthWKV)
    – None or January...December
  - CalendarDay (int (0..31)
  - CalendarHour (int (0..23)
  - CalendarMinute (int (0..59))

Model – Settings

- Power Event (OPTIONAL) – policy
  - EventID (int (1..MAX)) – KEY
  - RequestPowerState (PowerStateWKV) – new state
  - EventName (string) – trigger event
    - "jam" – label in PrtAlertCodeTC in IANA Printer MIB
    - "AcmeWhatnot" – vendor – first letter uppercase

MIB – Summary

- Context – powGeneral…
- Status – powMonitorTable
- Status – powLogTable
- Capabilities – powSupportTable
- Capabilities – powTransitionTable
- Settings – powRequestTable
- Settings – powTimeoutTable
- Settings – powCalendarTable
- Settings – powEventTable

MIB – Context and Status

- Context – powGeneral... (scalars)
  - powGeneralNaturalLanguage
  - powGeneralMaxMonitorRecords, etc.
- Status – powMonitorTable
  - powMonitorIndex – primary key for all tables
  - powMonitorComponentType (System/specific Subunit)
  - powMonitorPowerState, etc.
- Status – powLogTable
  - powLogIndex – secondary key
  - powLogPowerState, etc.

MIB – Capabilities

- Capabilities – powSupportTable
  - powSupportPowerState – secondary key
  - powSupportPowerUsageWatts, etc.
- Capabilities – powTransitionTable
  - powTransitionStartPowerState – secondary key
  - powTransitionEndPowerState – tertiary key
  - powTransitionStateChangeSeconds

MIB – Settings

- Settings – powRequestTable
  - powRequestPowerState – requested new state
  - powRequestStatus – result
- Settings – powTimeoutTable
  - powTimeoutIndex – secondary key
  - powTimeoutPowerState, etc.
  - powTimeoutRowStatus – create/delete, enable/disable
- Settings – powCalendarTable
  - powCalendarIndex – secondary key
  - powCalendarPowerState, etc.
- Settings – powEventTable
  - powEventIndex – secondary key
  - powEventPowerState, etc.

Next Steps

- **Power Management Model**
  - Prototype draft – October or November 2009
    - More use cases still solicited
  - Stable draft – November 2009
    - for PWG Last Call

- **Power Management MIB**
  - Initial draft – October or November 2009
    - ASN.1 only – complete text
  - Prototype draft – December 2009
    - Word/PDF/ASN.1 – complete text

- **December PWG Face-to-Face in Austin, TX**
  - Stable draft of Model → PWG Last Call
  - Prototype draft of MIB → Detailed review