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# Fedora 15

# Power Management

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# F15 PM Testing

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- PM Test Day  
([http://fedoraproject.org/wiki/Test\\_Day:2011-03-24](http://fedoraproject.org/wiki/Test_Day:2011-03-24))
  - 27 unique machines in Test Day
  - 260 tests were finished in total
  - 177 tests passed
  - 37 tests passed with warning
  - 46 tests failed
  - **68 % passed (warnings not counted)**
  - **82 % passed (warnings counted)**



- Kernel 2.6.36, 2.6.37, 2.6.38
  - Intelligent Power Sharing (IPS)
    - AKA HD Graphics Dynamic Frequency Technology (Core i5)
    - Increase GPU (i915) clock when the processor package thermal budget is not fully utilised
  - Support for reading temperature sensors from newer Radeon GPUs
  - USB – improved link power management, runtime-PM support for PCI-based USB host controllers

# Kernel – II

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- Kernel 2.6.36, 2.6.37, 2.6.38
  - Added PM support to xhci (USB 3.0)
  - Added autosuspend facility to runtime PM
  - USB autosuspend in the btusb is enabled by default
  - Re-implemented ATA Link Power Management
- Kernel 2.6.36, 2.6.37, 2.6.38
  - Kernel audio can operate without periodic interrupt
    - Currently supported by `hda_intel`
  - USB uses new runtime PM core autosuspend framework
    - `power/autosuspend_delay_ms`

# PowerTOP 2.0 – I

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- Author: Arjan van de Ven <[arjan@linux.intel.com](mailto:arjan@linux.intel.com)>
- Complete rewrite of 1.x codebase
- Features:
  - Redesigned tab based user interface
  - Uses 'perf' infrastructure for improved accuracy
  - Tracks the power behaviour of various devices
  - Power Estimation Engine (PEE)
  - Ability to create HTML reports

# PowerTOP 2.0 – II

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- Run from battery for power consumption tracking
- For best results calibrate the power estimation engine:
  - `# powertop --calibrate`
  - It will cycle through various settings (brightness, rfkill, CPU loads).
- Let it to grab enough data for PEE (approx. 1 hour)
- Generate HTML report:
  - `# powertop --html`



- Added Super Hybrid Engine support (Asus EEEPCs)
  - FSB is reduced in idle
  - Enabled in laptop-battery-powersave profile
    - # tuned-adm profile laptop-battery-powersave
  - Results for Asus 1000H:

Tuned	<i>Pavgidle</i> [W]	<i>Plightload</i> [W]
off	9.5	13.7
laptop-battery-powersave	8.3	11.8

# Join us

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- PM Special Interest Group (PM SIG):
  - <http://fedoraproject.org/wiki/SIGs/PowerManagement>
- Meetings:
  - Every Wednesday at 14:00 UTC on #fedora-meeting
- Other communication channels:
  - Mailing list: power-management
  - IRC channel (Freenode): #power



# Questions?

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Thank you.