



Countrywide Power Management ROI Study

December 1, 2006



Executive Summary

Countrywide can save up to \$2.5 million per year with the BigFix Power Management solution alone, representing a 50% annual cost reduction

- Countrywide currently spends ~\$5M on computing power per year
- Countrywide's annual computing power costs can range from \$2.5M with max power management to \$11M with no power management
 - This represents an \$8.5M spectrum of power saving opportunity
 - BigFix enables Countrywide to easily position itself anywhere in this \$8.5M wide power cost spectrum
- Without BigFix, Countrywide is constrained by an inability to:
 - **Measure** current power consumption
 - **Monitor** power usage
 - **View** and **change** power settings
 - **Enforce** company power policies
- Since BigFix agents are already installed on all desktops and servers, power management can be enabled throughout the enterprise within minutes, yielding immediate savings with no additional hardware or software requirements

Note: Data gathered from Countrywide's actual production (~81K endpoints) and lab environments



Power Saving Options

Using data collected from Countrywide's production and lab environments, we have identified several power saving options

Option	Annual Savings Potential
Enable Monitor PM	\$150,000
Enable Computer PM & Monitor PM	\$1,500,000
Enable Computer PM, Monitor PM & a Power-Off Policy	\$2,500,000

- Option 1: Fully enable and enforce Monitor Power Management
 - We found that some users disabled power management on their monitors
 - Turning off monitor PM settings costs up to \$40 per change per year
 - BigFix would allow Countrywide to enable and then enforce a policy of monitor power management
- Option 2: Fully enable and enforce Computer Power Management
 - Fewer than 7% of computers at Countrywide have computer power management enabled
 - With computer power management enabled, computers that are inactive for a specified period of time enter low power modes (Standby) that yield significant power savings
 - Mouse movement, keyboard strokes, or certain network packets will “wake-up” computer
 - No work is lost because computers preserve state when switching to / from Standby mode
- Option 3: Fully enable and enforce a Computer Power-Off Policy
 - BigFix enables Countrywide to implement and enforce a computer power-off policy so that all machines (or certain specified machines) are powered off in the evenings, on the weekends, on holiday breaks, or according to any other desired scheduling scheme

Note: These options are simply example scenarios. Using BigFix, any number of power savings options combinations can be implemented



Summary

- Countrywide currently spends ~\$5 million to power its computing resources
- There is currently no organizational ability to measure, monitor, change, or quantify power settings
- Power Management policies cannot be enforced, so users are free to change configurations
- Utilizing BigFix to implement more aggressive power configuration options can yield significant annual savings of up to **\$2.5 million**



Background Summary

- Countrywide currently has BigFix deployed to all computers in the organization
 - Servers are licensed for all BigFix content
 - Desktops are licensed only for Anti-Spyware
- BigFix provided ROI for full solution deployment to all desktops
 - Countrywide asked BigFix for more specific Power Management ROI numbers
- As a test, BigFix enabled Power Management on 40 servers and collected power savings data from them
- BigFix collected actual power management settings data from the ~81,000 endpoints in production to determine the potential savings realization with a BigFix deployment



Countrywide Lab Test Results

For the 40 computers in the lab:

- Power costs per year: \$2,776 (34th percentile)
- Potential annual savings: \$1,292 (47% of power bill)
- Monitor Power management fully enabled (100%)
- Computer Power management not enabled (0%)
- Computers stay on most of the day



Example from the Countrywide BigFix Lab

Monthly Power Consumption

Work hours in a day: Computers with Power Management enabled: 35 of 40 - 87%

Electricity Cost: \$/kWh Monitors with Power Management enabled: 40 of 40 - 100%

Display estimated power cost: Average computer powered-on time per day: 22:04:00 - (92% of a day)

Display Power Usage Display CO₂ Emissions

Minimum Power Consumption² Full Power Consumption³

Current Power Usage (20th percentile)

Consumption Level	kWh	Cost (\$)
Minimum Power Consumption ²	1,113	\$122
Current Power Usage (20th percentile)	1,656	\$182
Full Power Consumption ³	3,853	\$424

Monthly Potential Power Savings¹: 543 kWh : \$60 (33%)

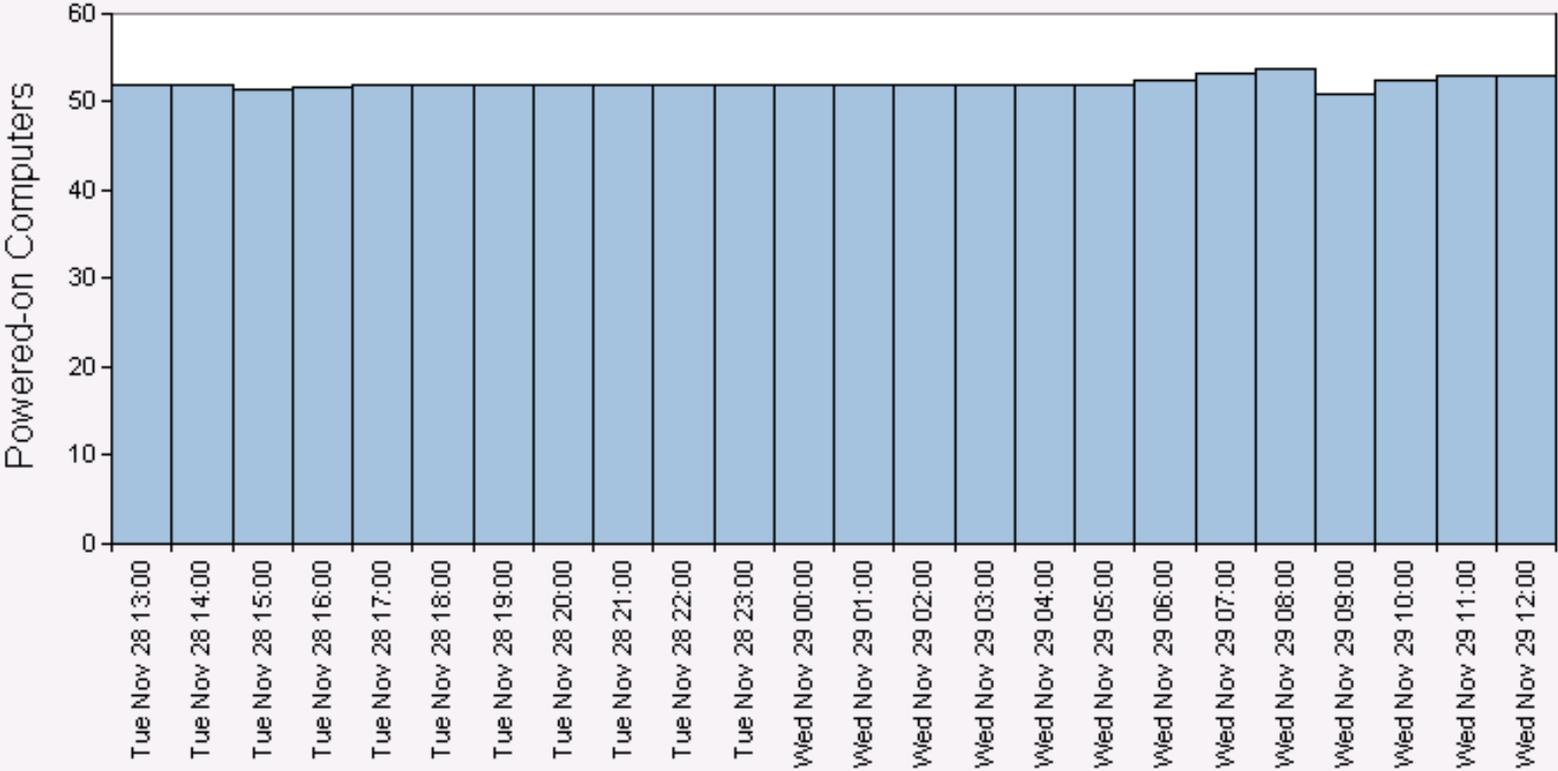
Additional Information



Example from the Countrywide BigFix Lab

Powered-on Computers
(Tue Nov 28 13:00:00 PST 2006 - Wed Nov 29 13:00:00 PST 2006)

Last 24 Hours





Where did power cost estimate come from?

- Power management calculations are simple math, but the input variables are extremely hard to gather
- BigFix + Countrywide compiled data regarding power management:

Variable	Countrywide Data	Notes
Monitor power settings	96% enabled	Gathered using BigFix (data very accurate)
Standby settings	7% enabled	Gathered using BigFix (data very accurate)
Powered-on time	90% of day on average	Estimated (actual value only available if BigFix Power Management enabled in production environment)
Power consumed	Workstations – 52-163 watts Monitors – 40-90 watts <i>Average – 142 watts total</i>	Data previously compiled by Countrywide and samples taken with power meters
Power cost	\$0.11 / kwh	Estimate of power costs



Power Analysis

- Currently at Countrywide, power settings are set at computer build time
 - Monitor Power Management enabled on the build
 - Approximately 5% of users appear to change their settings
 - Standby Power Management disabled
- The bulk of the current savings come from the power monitor savings
 - This saves approx \$35-\$45/year per computer
- More savings options
 - Enforce more monitor savings
 - Use computer stand-by settings
 - Turn computers off more often



Power Management – The BigFix Way

How much is Countrywide *actually* spending to power computers?

- No way to measure this accurately at Countrywide today
- If you can't measure, you can't manage and set policy
- Countrywide can get this information with BigFix's Power Management solution
 - An agent on each computer looks at the computer's characteristics
 - It measures the amount of time the computer is on
 - It uses many different metrics to calculate the amount of power the computer uses



And don't forget other BigFix solutions

- With the same platform / agent / infrastructure / training as power management, you get:
 - Best Patch Management system
 - Reports / Remediation
 - Microsoft and non-Microsoft
 - Full Inventory capabilities
 - (today no solution in place at Countrywide for inventory)
 - Software distribution capabilities
 - Ability to help monitor AV health
 - AntiSpyware across all computers
 - Fully configuration management capabilities
 - Future NAC integration possibilities
 - Security configurations and best practices
 - And more...
- Very cheap infrastructure and low admin overhead
- BigFix is proven to work in Countrywide environment