



## Enterprise-wide Computer Power Management

Leland Jobe, Territory Manager  
BigFix, Inc.

# Agenda



- BigFix Introduction – Who, How, What
- Enterprise Power Management
  - The Opportunity and Concept
  - Challenges to Adoption
  - Keys to Success
  - The BigFix Approach
  - Case Studies

# Who is BigFix?

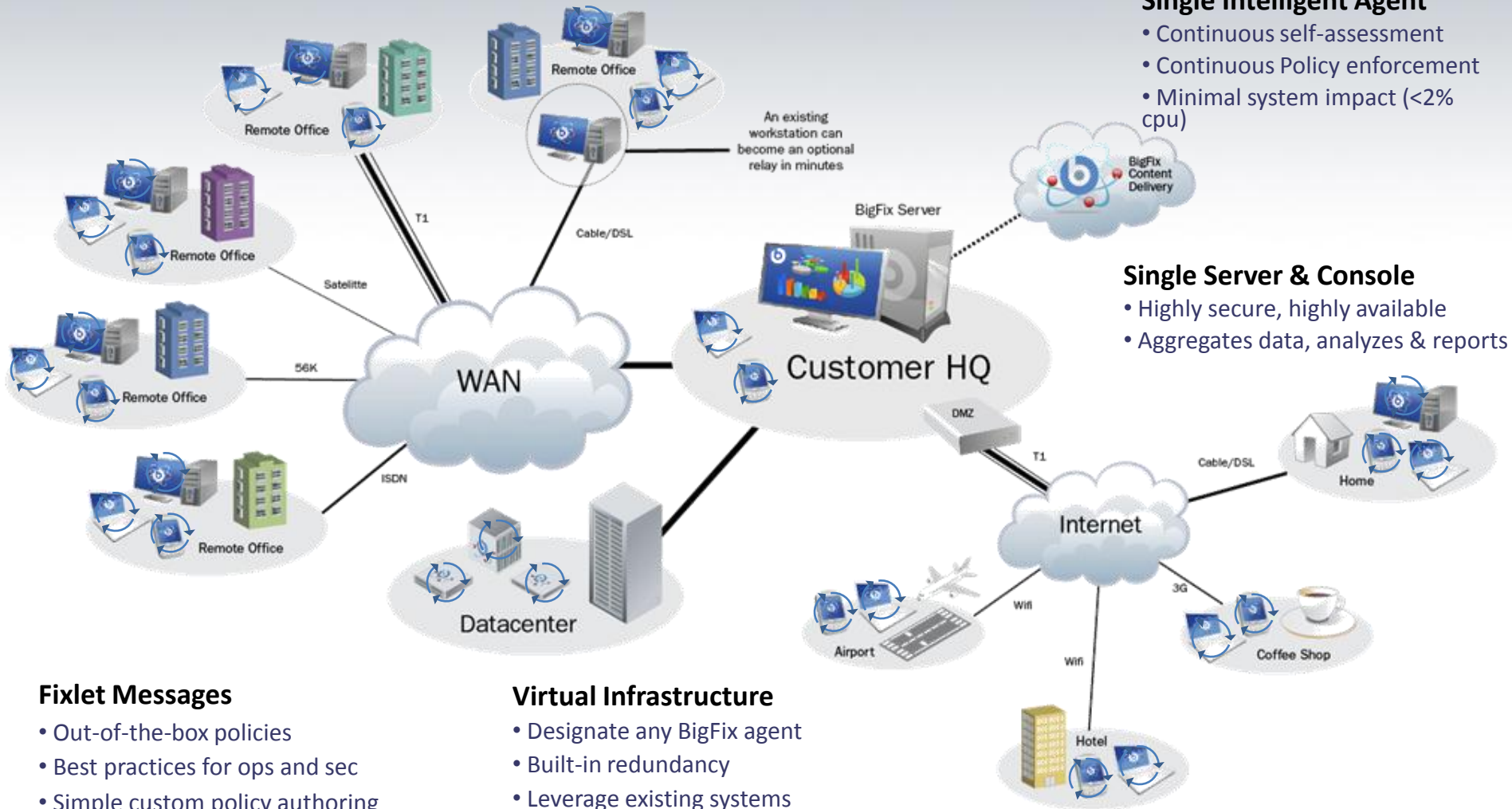


BigFix is a leading global provider of **high-performance security and systems management** software for enterprise companies

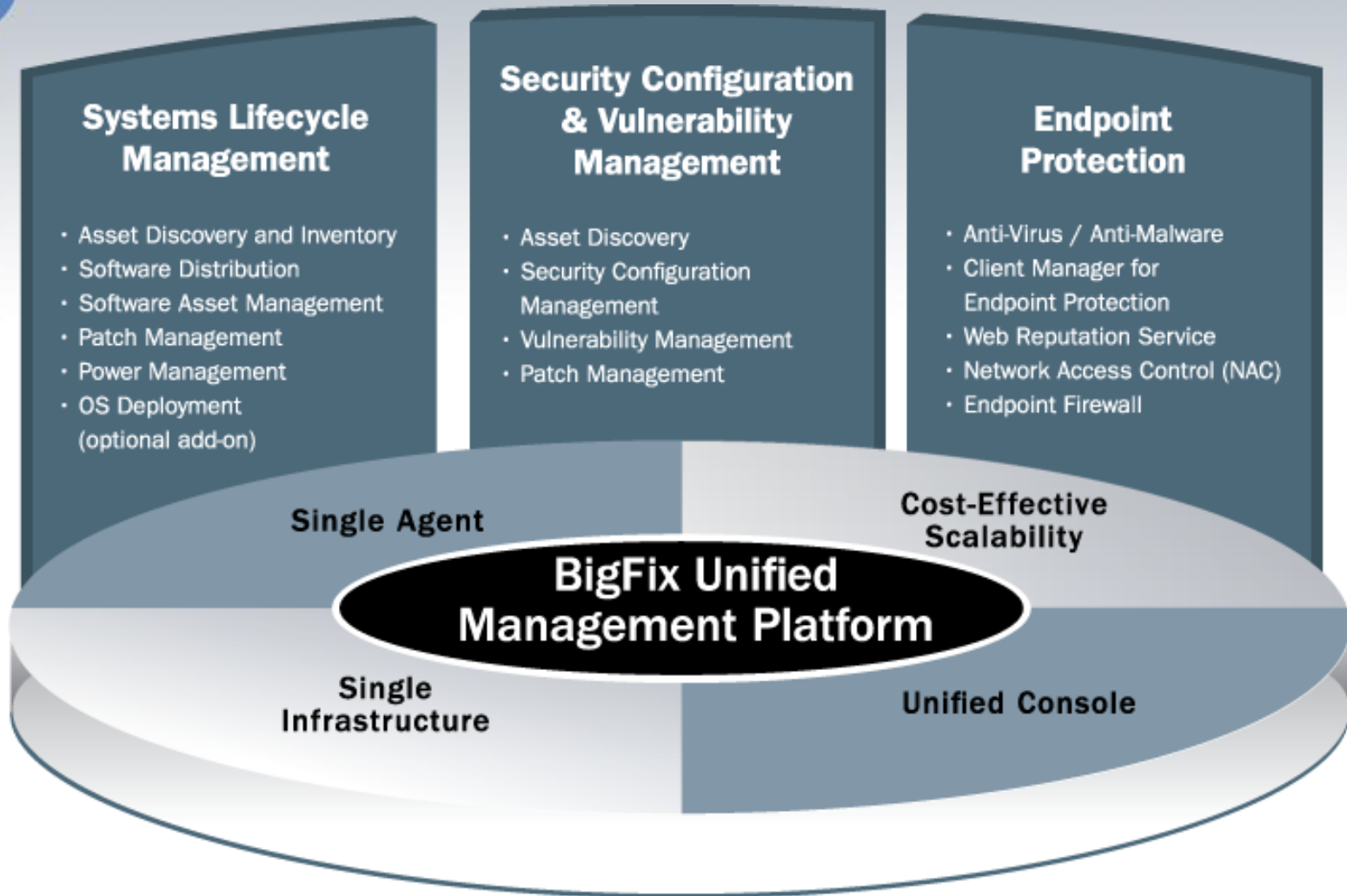
- 40%+ year-over-year growth
- 9,000,000 PC, servers and mobile devices under management
  - 800+ customers in Europe, Asia and Americas
  - Very large deployments > 100,000 computers
- Innovative BigFix technology platform
  - “Visionary” in both Endpoint Protection and PC Lifecycle Management Gartner Magic Quadrants
  - 15 patents worldwide
  - 41 patents pending worldwide



# BigFix: How it Works



# What BigFix Offers

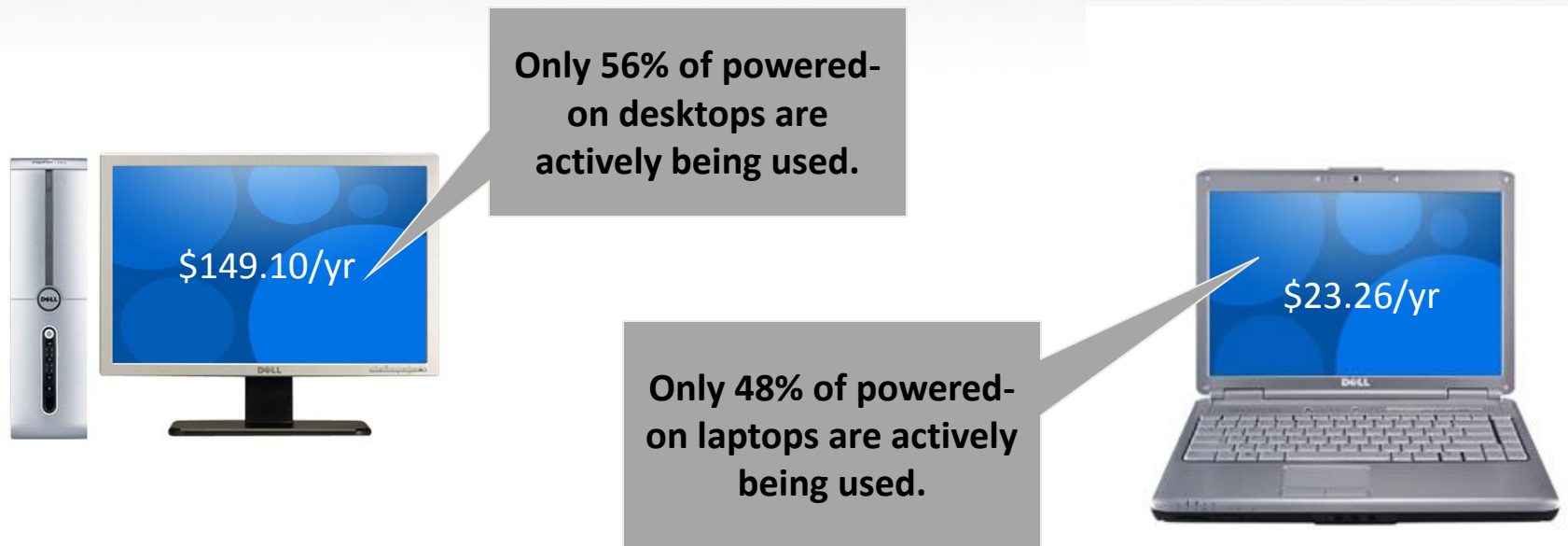


# PC Power Management



*The Concept is Simple...*

*Automatically turn off computers and monitors that aren't in use*



*The Benefits are Clear... Save Money, Save the Environment*

# Power Management Breakdown (per year)



Computer State	Power Used	CO <sub>2</sub>	Cost
Only on for work hours	328 kWh	459 lbs	\$33
Low power mode	502 kWh	702 lbs	\$50
Full power all the time	1,192 kWh	1,589 lbs	\$113

- At the extremes, 10 poorly managed computers can waste
  - \$800
  - 5 tons of CO<sub>2</sub>
  - Equivalent of 1 car's worth of emissions
  - 1 acre of trees (needed to offset emissions)

# Challenges to Adoption

- Fear, Uncertainty and Doubt
  - “I will lose my work if my PC suddenly shuts down or hibernates.” –Helen in Finance
  - “We can’t patch machines that are powered down.” –Mike in IT Operations
  - “There are times when I need to connect to my PC remotely – and that’s why it needs to stay on 24x7.” –George the CEO

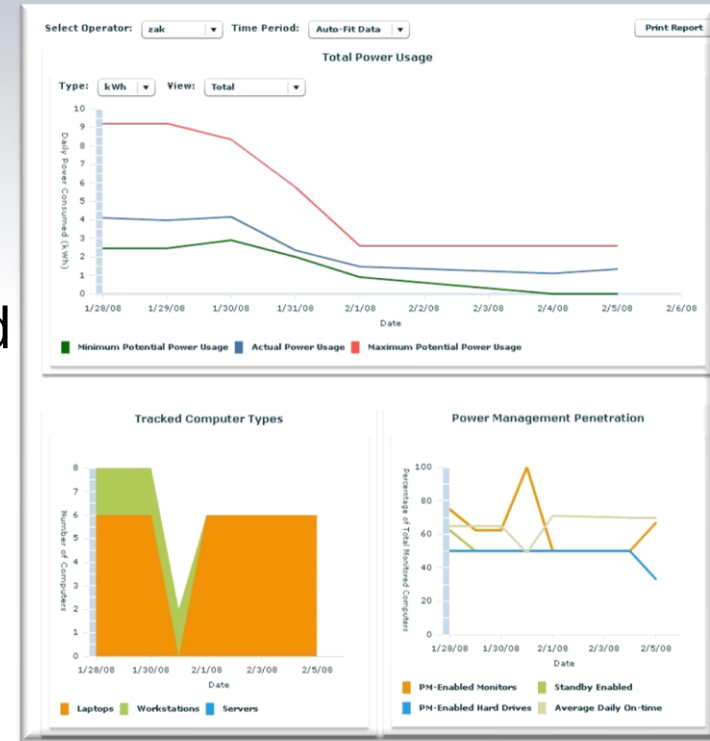


# Balancing Flexibility and Control



## Goals of a Successful PC Power Mgmt Program:

- Increased user adoption = flexible scheduling options with centralized control
- Ensure no impact to productivity
- Integrated with IT operations
- Detailed statistics to share with execs and the utility companies



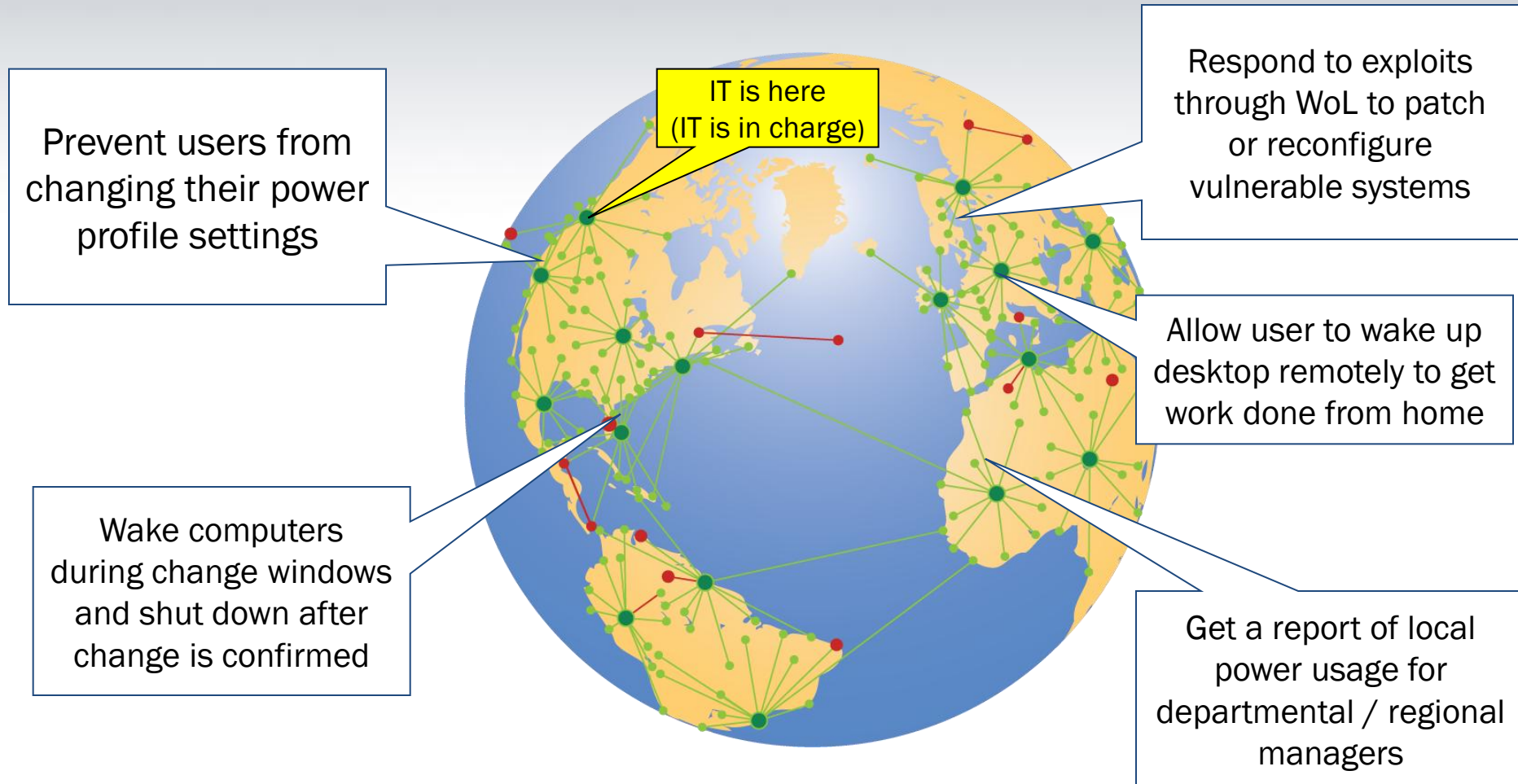
*Over 80% of users disable their PCs power conservation settings within 90 days*

Source: Lawrence Berkeley National Laboratory

# Requirements for Successful PC Power Mgmt



## *Balancing Flexibility with Control*





# 6 Steps for a Successful PC Power Mgmt Program

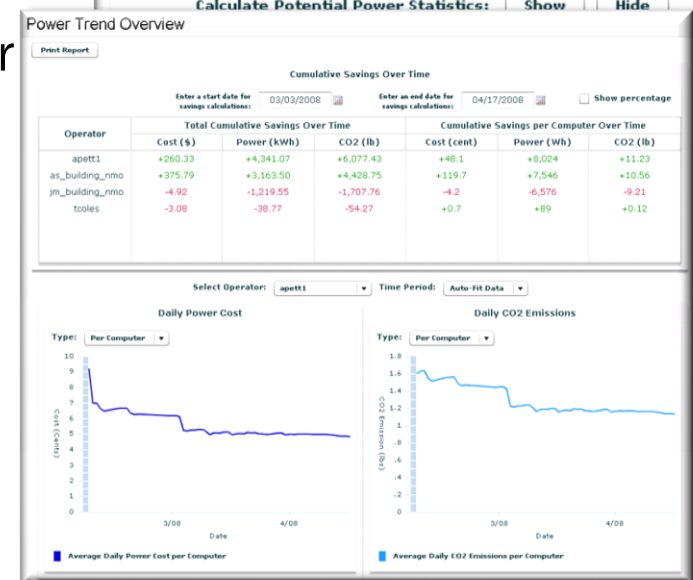
1. Know what the current usage patterns are.
  - Turn tracking feature on all computers
2. Identify per-user or per-LOB usage requirements.
  - Plan for types of policies, consider “opt-in” programs
3. Model “what-if” scenarios for each power profile
4. Start with conservative estimates and policies, then gradually increase
5. Consider “opt-in” programs to drive user adoption
6. Give management access to reports to share cost savings and project progress

### Potential Power Usage

This section allows you to select Power management goals and see its potential effect on your power usage.

<b>Monitor Power Management</b>	Current: 10 of 13 - 76.9 %
	Goal: <input type="text" value="13"/> of <input type="text" value="13"/> - <input type="text" value="100"/> %
<b>Standby Power Management</b>	Current: 6 of 13 - 46.2 %
	Goal: <input type="text" value="13"/> of <input type="text" value="13"/> - <input type="text" value="100"/> %
<b>Daily On-Time</b>	Current: 14 : 04 - 58.6 %
	Goal: <input type="text" value="10"/> : <input type="text" value="48"/> - <input type="text" value="45"/> %

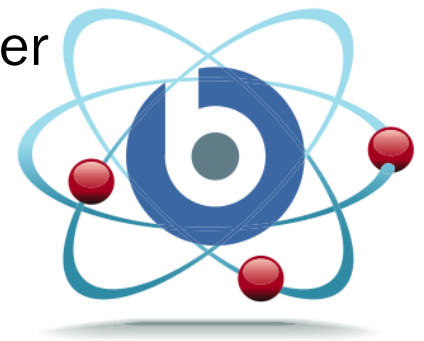
Calculate Potential Power Statistics:



# BigFix Power Management



- **Multiplatform**
  - Covers both Windows and Mac
- **Facilitates High Rates of User Adoption**
  - Allow end-users to opt-in to power policies
  - Client-side dashboards to increase buy-in and end-user engagement
  - Save work in applications prior to shut down or restart
- **Granular Control Over Power Profiles and States**
  - Targets: Individuals, groups, buildings, divisions, and more
- **Scales to today's network environment**
  - Manages up to 250,000 devices on one server
  - Excels in highly distributed environments
  - Rapid installation and time-to-value



# Overcoming PM Complexities in Practice



- **Cures PC Insomnia**
  - By intelligently measuring user idle time, overcomes issue where computers don't enter low-power modes when they should
- **Enables IT Maintenance**
  - Scheduled Wake from Standby, Distributed Wake-on-LAN, and Last Man Standing
- **Accounts for Hardware Differences**
  - Override power and CO2 assumptions by hardware profile, location, and monitor type for more accurate reporting
- **Adjust Min Sleep States**
  - Maximizes power savings by adjusting min sleep state

The screenshot shows a window titled "Power Assumptions Override Wizard" with a close button in the top right corner. The main title bar also contains the text "Power Assumptions Override Wizard". Below the title bar, there is a descriptive paragraph: "This Wizard will enable you to override for targeted computers the power assumptions used in the Power Tracking Information Dashboard." This is followed by the heading "Override assumptions for targeted computers:". The wizard contains several sections, each with a radio button for "Use dashboard default" and a corresponding input field for a custom value:

- Set Cost:**  Use dashboard default,  Cost per kWh to: \$ .08
- Set CO2 Emissions:**  Use dashboard default,  Set CO2 per kWh to 1.0 Lbs.
- Set Computer's Active Power Draw:**  Use dashboard default,  Set power draw to 100 Watts
- Set Computer's Power-Managed Power Draw:**  Use dashboard default,  Set power draw to 10 Watts
- Set Monitor's Active Power Draw:**  Use dashboard default,  Set power draw to 80 Watts
- Set Monitor's Power-Managed Power Draw:**  Use dashboard default,  Set power draw to 5 Watts
- Set Hard drive Sleep Power Savings:**  Use dashboard default,  Set power draw to 8 Watts

At the bottom right of the dialog, there are two buttons: "Finish" and "Cancel".

# BigFix Power Management Reports



- **Customizable Views**

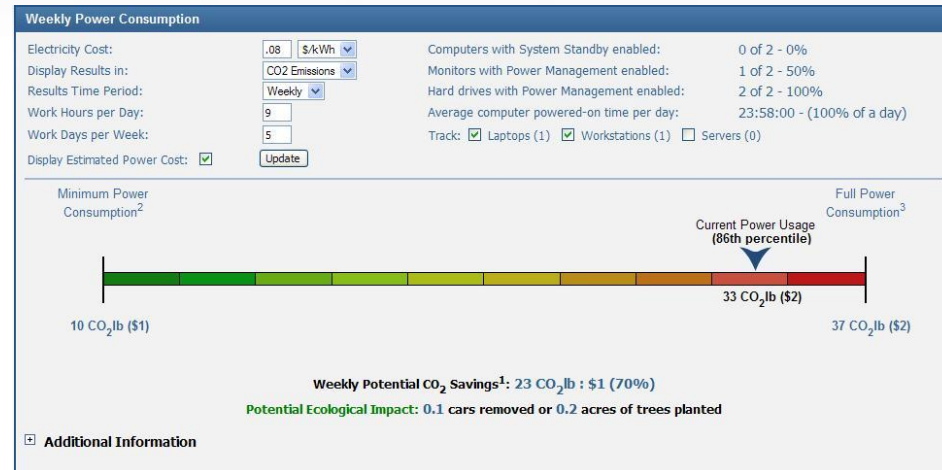
- Filter workstations, laptops, and/or servers
- Display carbon emissions equivalents: acres of trees planted / cars off the road

- **Store and view historical data**

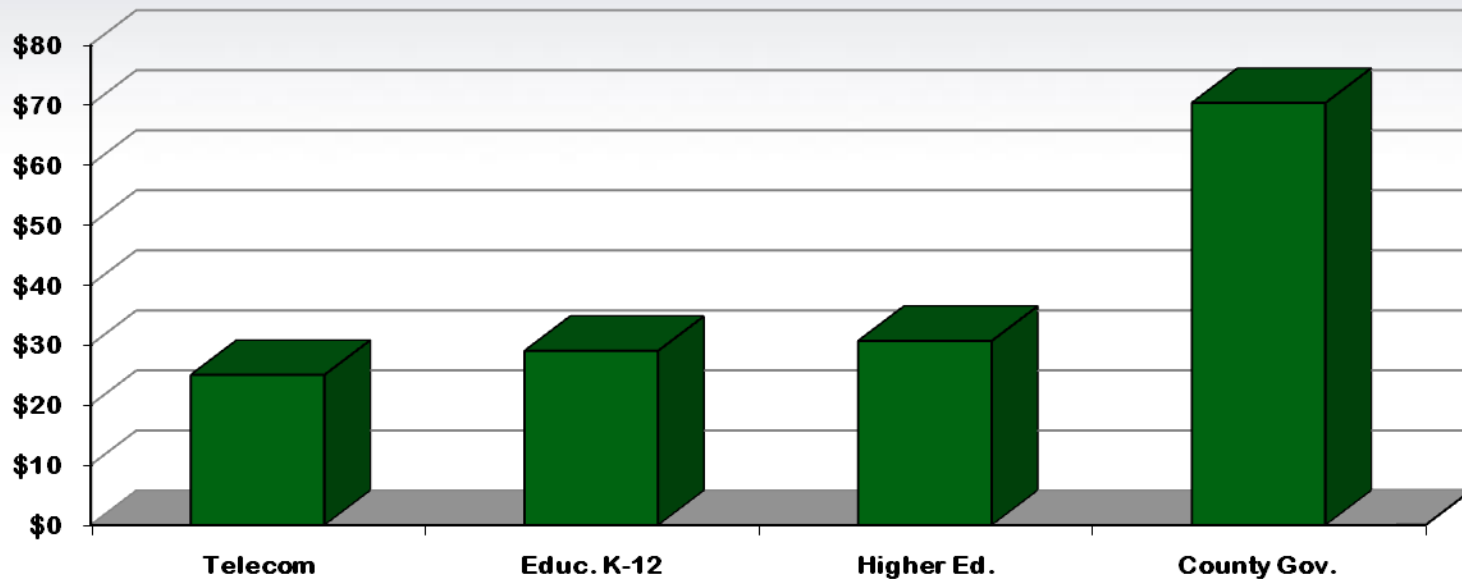
- Web-accessible reports for stakeholders throughout the organization (Marketing, PR, Facilities)

- **Model “what-if” scenarios**

- Quantify and visualize cost savings
- Reduction in power consumption / CO<sub>2</sub> emissions from changes to configuration settings



# Range of Power Management Savings



Savings data reflect annual \$/PC from actual BigFix installations. Differences in savings are due to variations in applied power policies, energy costs, and usage scenarios.

Savings does not include reduced HVAC costs or rebate offerings.

# Variable Savings Based on Power Policies



	# Devices	Auto Standby	Hrs/Day Standby	Profiles Used	Weekend Shut Down	Estimated Savings per Device
Educ. K-12	90,000	30 min	4	1	Opt-in	\$29
Higher Ed.	3,500	30 min	10	1	Yes	\$30
County Gov. (Northeast)	1,400	30 min	13.8	6	Yes	\$71
Telecom	200	25 min	8	1	Limited	\$25



## Customer Profile: Top 5 Public School District

- 90,000 PCs
- 370 distributed locations – schools and administrative sites
- Original savings estimates:
  - \$2.6M
- Actual savings in Year 1:
  - \$4.2M



*“BigFix Power Management has been easy to install, easy to operate, and very flexible. It’s currently working exactly as we expected from the proof-of-concept.”*

– Director of Network Systems

# Power Usage - Before



**Monthly Power Consumption**

Work hours in a day:       Computers with System Standby enabled: 13207 of 89513 - 14%

Electricity Cost:  \$/kWh      Monitors with Power Management enabled: 74764 of 89513 - 83%

Display estimated power cost:       Hard drives with Power Management enabled: 20627 of 89513 - 23%

Display Power Usage       Display CO<sub>2</sub> Emissions      Average computer powered-on time per day: **20:46:00 - (87% of a day)**

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Minimum Power Consumption<sup>2</sup>      Current Power Usage (35th percentile)      Full Power Consumption<sup>3</sup>

2,468,811 kWh (\$246,881)      4,616,550 kWh (\$461,655)      8,675,091 kWh (\$867,509)

**Monthly Potential Power Savings<sup>1</sup>: 2,147,739 kWh : \$214,774 (47%)**

Additional Information

**Aggregate Statistics**

Powered-on Computers  
(Tue Sep 25 04:00:00 EDT 2007 - Tue Oct 2 04:00:00 EDT 2007)

Last 7 Days

Powered-on Computers

Computers left on at night and on weekends

# Power Usage - After



**Monthly Power Consumption**

Work hours in a day:  Computers with System Standby enabled: 13794 of 90497 - 15%

Electricity Cost:  \$/kWh Monitors with Power Management enabled: 75833 of 90497 - 83%

Display estimated power cost:  Hard drives with Power Management enabled: 21475 of 90497 - 23%

Display Power Usage  Display CO<sub>2</sub> Emissions Average computer powered-on time per day: **09:04:00 - (38% of a day)**

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Minimum Power Consumption<sup>2</sup>  
Current Power Usage (0th percentile)

**Realizing Savings of 26 million kWh per year**

Full Power Consumption<sup>3</sup>

2,451,119 kWh (\$245,112)  
2,438,714 kWh (\$243,871)

8,812,968 kWh (\$881,297)

Monthly Potential Power Savings<sup>1</sup>: 12,405 kWh : \$1,241 (1%)

Additional Information

**Aggregate Statistics**

**Powered-on Computers**  
(Mon Oct 8 20:00:00 EDT 2007 - Wed Nov 7 19:00:00 EST 2007)

Last 30 Days

Powered-on Computers

Computers powered-off at night and on weekends

# Customer Profile: Major US University

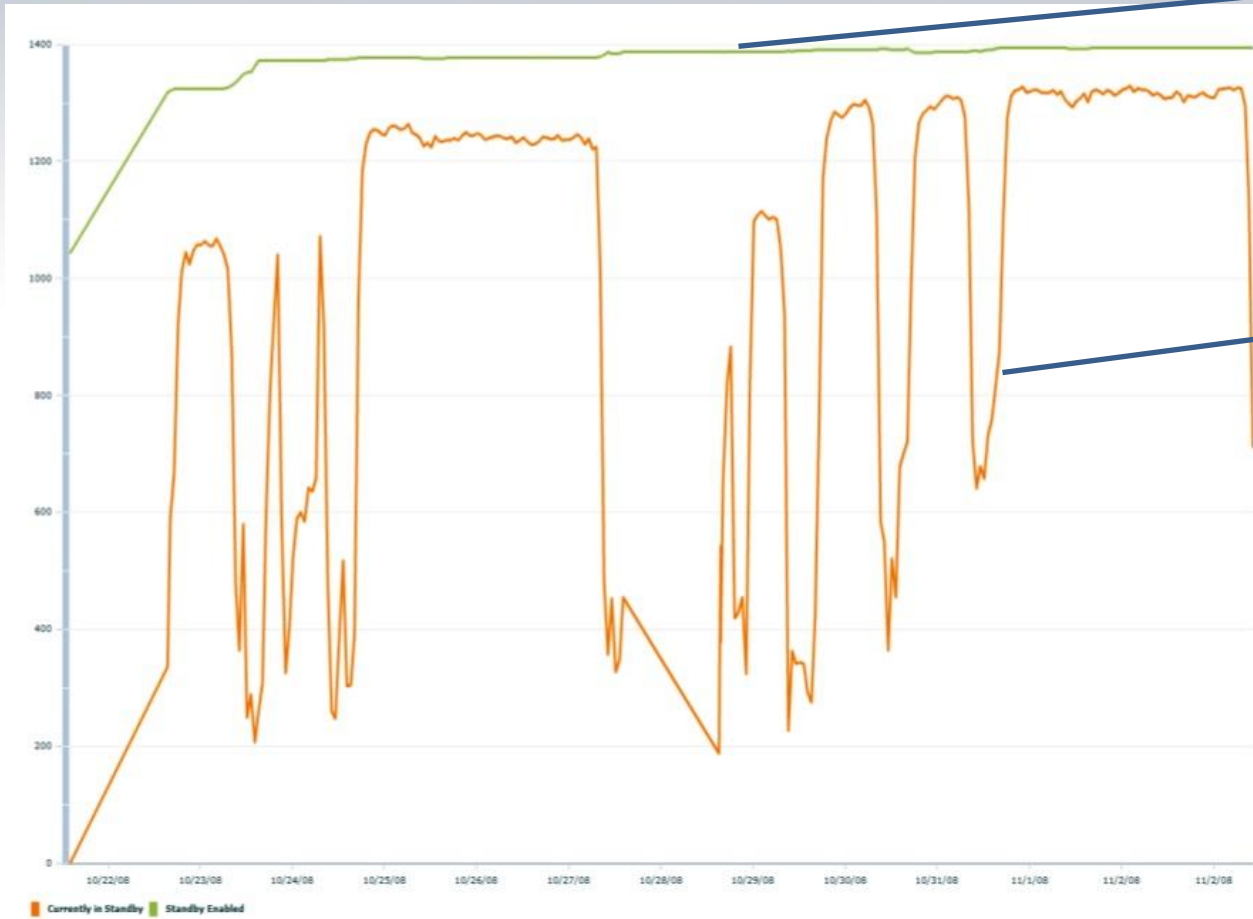


- Offers BigFix Power Mgmt to users via an *opt-in approach*
- Users choose specific power profiles with varying degrees of energy saving levels
- Increases user adoption
- Power Mgmt is ONE component of how they use BigFix (patching, security configuration, etc).

*“With BigFix, I know exactly what’s on our computers, and I can report to management with certainty and be ready to answer any sort of question they ask.”*

*--University System Administrator*

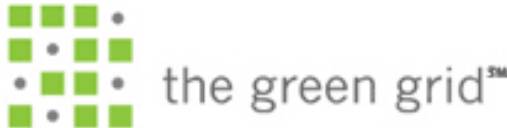
# Standby Reporting



# Computers with Standby Enabled

# Computers Currently in Standby (higher on weekends and nights)

# BigFix Green Alliances Include:



# Participating Utilities Include:



Seattle City Light



... 26 and counting



# THANK YOU!!!

<http://www.bigfix.com>

