Cisco EnergyWise Return on Investment with Cisco Unified IP Phones Solution Overview

As organizations strive to reduce their energy consumption, Cisco has responded with an energy-management architecture called Cisco EnergyWise® technology to reduce power consumption, monitor power use, and lower energy costs. Using Cisco EnergyWise technology with Cisco® Unified IP Phones can help your organization proactively control operating costs while minimizing your carbon footprint. In addition, this technology can help your organization measure, automate, and report on power consumption across your entire network.

This paper explains how using Cisco EnergyWise technology with Cisco Unified IP Phones can provide energy reduction and cost savings across your entire corporate infrastructure. Cost savings are achieved with Cisco EnergyWise technology through intelligent signaling of power status between the Cisco network and the Cisco Unified IP Phones. This paper also provides power-consumption details for Cisco Unified IP Phones that incorporate Cisco EnergyWise embedded technology.

A Cisco EnergyWise Power Save Plus mode is available on the Cisco Unified IP Phone 6900, 7800, 8800, 8900, 9900, and DX600 Series phones. This power-saving mode reduces power consumption on Cisco Unified IP Phones in off hours, resulting in a substantial cost savings. This technology works by having the Cisco network signal the Cisco Unified IP Phones to go into a Power Save Plus mode, thereby reducing the power consumption of the phone to 1 watt or less. You can easily awaken a Cisco Unified IP Phone in Power Save Plus mode with the push of a button. Alternatively, if you are in a call and a Cisco Unified IP Phone is scheduled to go into Power Save Plus mode, the action is automatically postponed. You are presented with both audio and visual alerts on the phone before the phone enters the Power Save Plus mode. The audio alert is optional, and you can configure it from the phone administration page. This flexibility allows your corporation to maximize energy savings without disrupting user productivity. Figure 1 shows the Power Save Plus alert that is displayed on the phone screen before the phone goes into the Power Save Plus mode.

Figure 1.   Power Save Plus Alert Displayed on the Phone

Another energy-saving feature called Power Save also works with Cisco EnergyWise technology. Power Save mode turns off the LCD when the phone is not in use. Depending upon the phone model, Power Save decreases the total power consumption by up to 1 watt. Power Save is a perfect complement to Power Save Plus. Using both will significantly reduce total power consumption across your entire corporation.

Cisco EnergyWise Power over Ethernet (PoE)-capable switches include the Cisco Catalyst® 2960, 2960-S, 3560, 3560-E, 3560-X, 3750, 3750-E, 3750-X, 4500, and 6500 Switch models. Alternative provisioning methods include the Cisco switch command-line interface (CLI), Simple Network Management Protocol (SNMP) with the Cisco EnergyWise MIB, Secure Sockets Layer (SSL), and Cisco Energywise Management (JouleX). Read more here - http://www.cisco.com/go/energywise.

Cost Savings with Cisco EnergyWise Technology

Cisco EnergyWise technology offers substantial cost savings for a corporation. For example, in a 3-year time span an average company with 1,000 users can save $100,000 (Figure 2), and an average company with 10,000 users can save $1,000,000 (Figure 3).

Figure 2.   Cisco EnergyWise 3-Year Savings of $100,000 for an Average Company with 1,000 Users
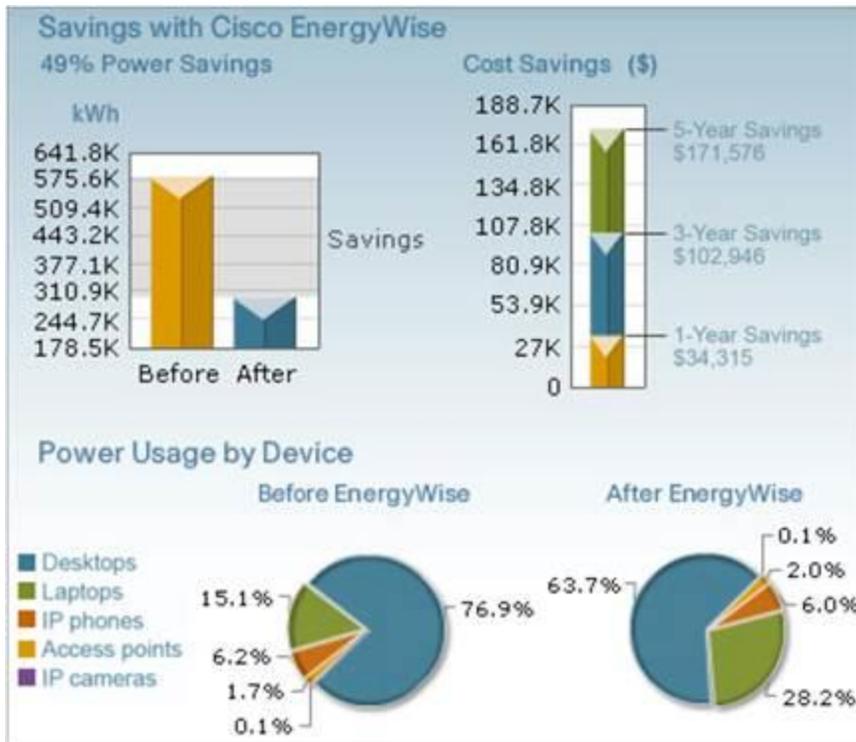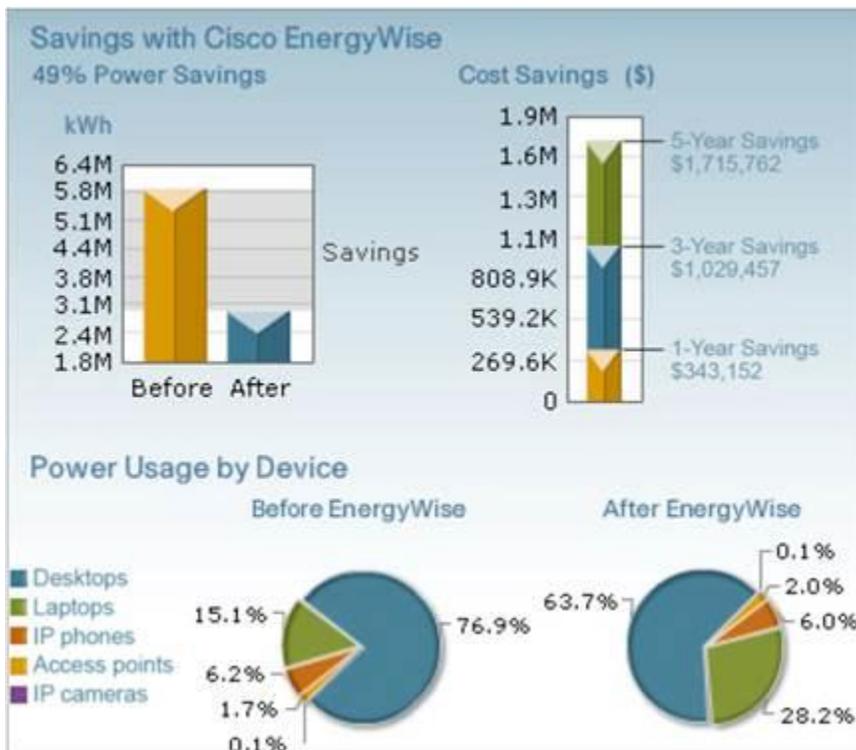
Figure 3. Cisco EnergyWise 3-Year Savings of $1,000,000 for an Average Company with 10,000 Users

Cisco Unified IP Phone Power Profile with Cisco EnergyWise Technology

Table 1 provides a breakdown of power consumption including the Cisco EnergyWise Power Save Plus mode. Moving from left to right, the power efficiency increases, resulting in lower power usage. For example, the 802.3af standard specifies five different power-allocation classes. Note that if the Cisco switch reserved the entire 802.3af power-allocation class per port when connecting a Cisco Unified IP Phone, the power budget would be depleted and the switch might fail to allocate enough power for all PoE devices. Therefore, in order to prevent overbudgeting of power because of the 802.3af classification, Cisco Discovery Protocol messages from the Cisco Unified IP Phones report a lower power value to the Cisco switch. The Cisco switch uses this Cisco Discovery Protocol value for budgeting power resources. For example, the Cisco Unified IP Phone 8961 reports a Cisco Discovery Protocol value of 9.6 watts even though the 802.3af standard specifies 15.4 watts for a Class 4 device. With Cisco Discovery Protocol, the Cisco switch does not waste the additional 5.8 watts when budgeting power.

Table 1. Cisco Unified IP Phone Power Consumption with Intelligent Power Allocation

Cisco Unified IP Phone Model	802.3AF Classification (Maximum Watts)	Base Reported Cisco Discovery Protocol (Watts) for Budgeting PoE	Actual Power When Idle (Watts)	Power Save Mode	Power Save Plus Mode
Energy Efficiency					
6921	Class 2 (7.0W)	6.3	2.4	2.0	Less than 1W
6941	Class 2 (7.0W)	6.3	2.4	2.0	Less than 1W
6945	Class 1 (4.0W)	3.8	2.6	2.0	Less than 1W
6961	Class 2 (7.0W)	6.3	2.4	2.0	Less than 1W
7811	Class 1 (4.0W)	3.3	2.6	2.0	Less than 1W
7821	Class 1 (4.0W)	3.8	2.6	2.0	Less than 1W

7841	Class 1 (4.0W)	3.8	2.6	2.0	Less than 1W
7861	Class 1 (4.0W)	3.8	2.6	2.0	Less than 1W
8811	Class 2 (7.0W)	6.5	3.9	3.5	Less than 1W
8831	Class 3 (15.40W)	13.0	3.2	2.9	Less than 1W
8841	Class 2 (7.0W)	6.5	3.9	3.5	Less than 1W
8845	Class 2 (7.0W)	6.4	3.9	3.5	Less than 1W
8851	Class 3 (15.40W)	9.8	3.9	3.6	Less than 1W
8861	Class 4 (15.40W)	14.2	4.2	3.8	Less than 1W
8865	Class 4 (15.40W)	14.7	4.2	3.8	Less than 1W
8941	Class 1 (4.0W)	3.8	2.2	2.0	Less than 1W
8945	Class 2 (7.0W)	6.4	3.0	2.0	Less than 1W
8961	Class 4 (15.40W)	9.6	6.2	5.4	1W
9951	Class 4 (15.40W)	12.0	6.6	5.8	1W
9971	Class 4 (15.40W)	12.3	6.9	5.9	1W

| DX650 | Class 4 (15.40W) | 13.7 | 6.8 | 5.8 | 1W |

It is important to realize that Cisco Discovery Protocol power-allocation numbers do not reflect the real-time power draw by the phones, because the real-time power draw is lower than the Cisco Discovery Protocol reported value. The "Actual Power When Idle" column in Table 1 represents the real-time power draw that the phones use when idle. When phones are busy, these real-time values increase but never exceed the Cisco Discovery Protocol reported values. The reason for the difference between Cisco Discovery Protocol reported numbers and real-time power draw is that Cisco Discovery Protocol reports the theoretical maximum to provide sufficient headroom for situations requiring increased power.

Both the Cisco Discovery Protocol reported values and the real-time values are necessary. The Cisco Discovery Protocol numbers are necessary in order to correctly provision and deploy Cisco switches along with Cisco Unified IP Phones, and the real-time values are necessary in order to determine how much power the Cisco Unified IP Phones actually consume. In addition, the real-time values provide the data needed for accurate reporting in order to determine the cost savings.

Cisco Unified IP Phone Power-Consumption Example for Cisco Unified IP Phone 6900, 8900, and 9900 Series Models

Figure 4 shows the display from a Cisco Catalyst 3750-E Switch with PoE. The output is from the command **show power inline**. The Cisco Discovery Protocol reported values are displayed for each Cisco Unified IP Phone under the column "Power (Watts)". The total value of all the Cisco Discovery Protocol messages equals 52.8 watts, and this total appears under "Used (Watts)". The Cisco switch uses the "Used Watts" value for power-budgeting purposes only, and it is not the real-time power consumed by the Cisco Unified IP Phones.

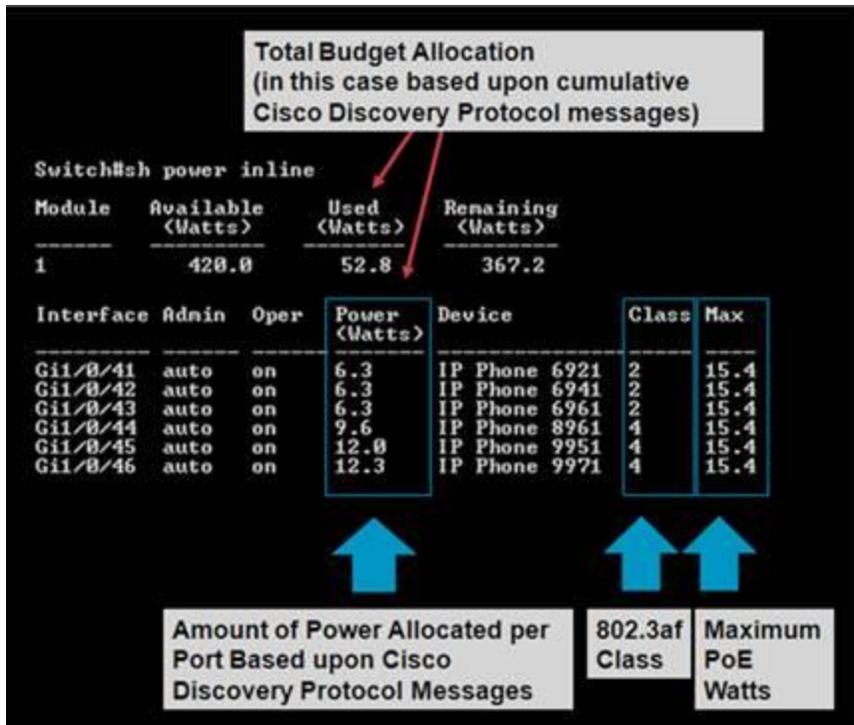**Figure 4.**   Cisco Discovery Protocol Providing Intelligent Power Allocation
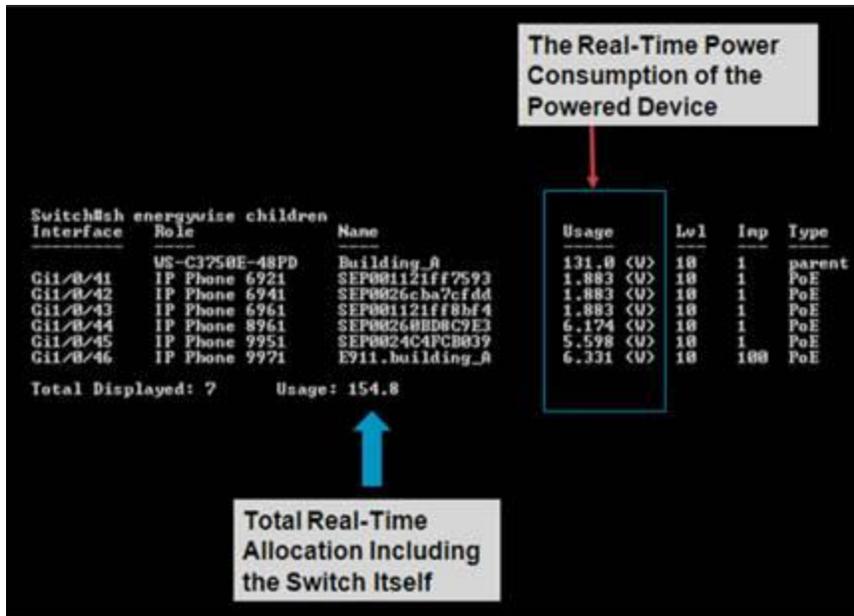
Figure 5 shows the real-time power draw of the same Cisco Unified IP Phones connected to the same Cisco Catalyst 3750-E Switch with Cisco EnergyWise technology enabled. The real-time power consumption is displayed under the "Usage" column, and these values are significantly less than the Cisco Discovery Protocol values in Figure 4. The real-time power draw fluctuates, depending on the activity of the Cisco Unified IP Phones. When the Cisco Unified IP Phone goes into Power Save Plus mode, the value in the "Usage" column drops to 1 watt or less. The Power Save Plus mode requires that Cisco EnergyWise technology be enabled on the Cisco PoE switch. When a Cisco Unified IP Phone is in Power Save Plus mode and you want to use the phone, you can press a button to wake the phone up, and the Cisco Unified IP Phone immediately signals the Cisco switch to provide full power to the PoE port.

Figure 5.　Cisco EnergyWise Technology Providing Intelligent Power Allocation

The Real-Time Power
Consumption of the
Powered Device

```
SwitchNsh energywise children
Interface   Role              Name                Usage        Lvl  Imp  Type
            WS-C3750E-48PD    Building_A          131.0 <W>    10   1    parent
Gi1/0/41    IP Phone 6921     SEP001121ff7593     1.883 <W>    10   1    PoE
Gi1/0/42    IP Phone 6941     SEP0026cba7cfdd     1.883 <W>    10   1    PoE
Gi1/0/43    IP Phone 6961     SEP001121ff8bf4     1.883 <W>    10   1    PoE
Gi1/0/44    IP Phone 8961     SEP00260BD0C9E3     6.174 <W>    10   1    PoE
Gi1/0/45    IP Phone 9951     SEP0024C4PC0039     5.598 <W>    10   1    PoE
Gi1/0/46    IP Phone 9971     E911.building_A     6.331 <W>    10   100  PoE

Total Displayed: 7      Usage: 154.8
```

Total Real-Time
Allocation Including
the Switch Itself

Note: Real-time power draw can be displayed using either Cisco EnergyWise commands or traditional PoE commands such as **show power inline police.**

Understanding Cisco Unified IP Phone Power Usage

Consider the calculation of the total power consumption of all Cisco Unified IP Phones on a network; if the phones are idle or in Power Save Plus mode, the summation is the aggregate of the idle or Power Save Plus values listed in Table 1; otherwise, the Cisco Unified IP Phones will be in various states of real-time power activity such as in a call. As shown in Figures 6 and 7 and Table 2, a breakdown of power usage for Cisco Unified IP Phone 6900, 8900, and 9900 Series models is displayed in order to provide an accurate picture of real-time power activity. This activity includes the Cisco EnergyWise Power Save Plus mode that consumes 1 watt or less.

The 802.3af standard provides five power classes up to 15.4 watts maximum. For the Cisco Unified IP Phone 6921, 6941, 6961, and 8945 models, the 802.3af classification is Class 2. For the Cisco Unified IP Phone 6945 and 8941 models, the 802.3af classification is Class 1. For the Cisco Unified IP Phone 8961, 9951, and 9971 models, the 802.3af classification is Class 4. The 802.3af standard specifies that Class 2 uses 7 watts maximum power and Class 3 uses 15.4 watts maximum power. Class 4 is defined as "reserved for future use". Therefore, in the absence of Cisco Discovery Protocol, when an 802.3af Cisco switch sees a Class 4 device, it applies the full 15.4-watt power to the PoE device. Because both Classes 3 and 4 can use up to 15.4 watts, from an 802.3af power-allocation standpoint Classes 3 and 4 are effectively the same.

Cisco chose Class 4 for the Cisco Unified IP Phone 8961 model and 9900 Series models to allow for future power growth beyond 15.4 watts. Of course, no matter what the 802.3af classification, Cisco uses Cisco Discovery Protocol to advertise a lower power value than the 802.3af maximum to conserve as much of the power budget in the Cisco switch as possible.

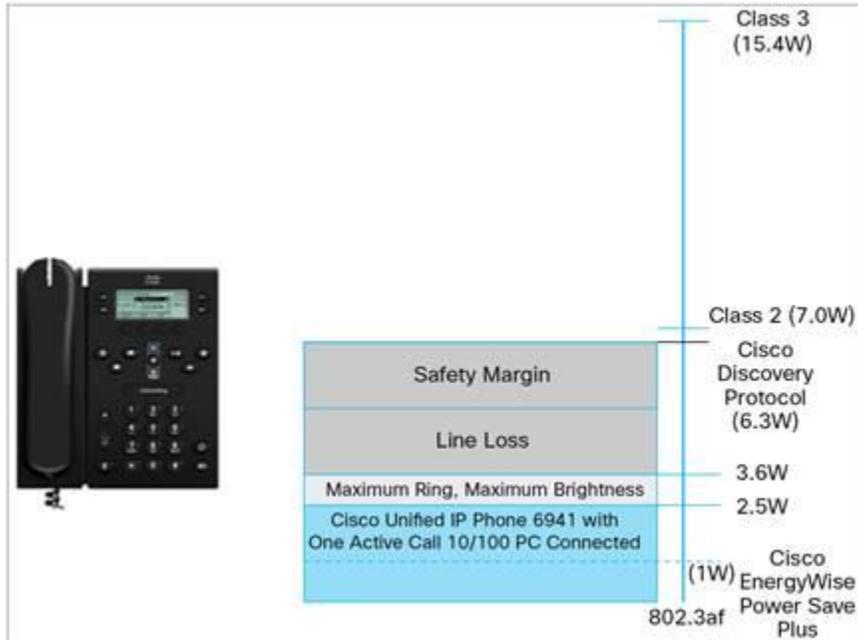**Figure 6.** Cisco Unified IP Phone 6941 Power Usage Including Cisco EnergyWise Technology

Figure 7. Cisco Unified IP Phone 9971 Power Usage Including Cisco EnergyWise Technology
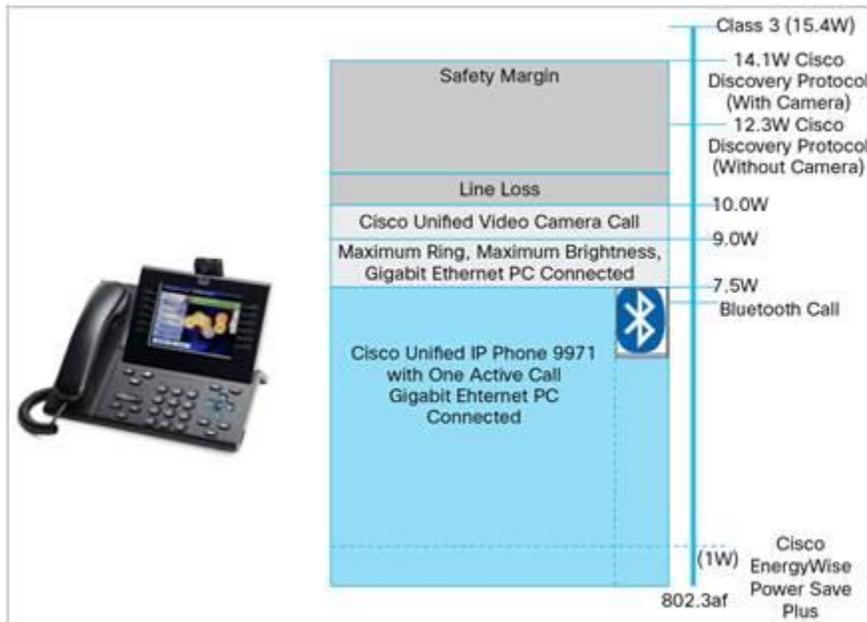

Table 2. Cisco Unified IP Phone 6900, 8900, and 9900 Series Power-Usage Statistics Including Cisco EnergyWise Technology

Cisco Unified IP Phone Model	One Active Call, 10/100 PC Connected (Cisco Unified IP Phone 6900), or Gigabit Ethernet PC Connected	Maximum Ring; Maximum Brightness; PC Attached	Reported Cisco Discovery Protocol (W) for Budgeting PoE with Cisco Unified Video Camera	Maximum Brightness; Speaker; Gigabit Ethernet PC; Camera + Video Call	Power Save Plus Power Consumption
6921	2.5	3.6	-	-	Less than 1W
6941	2.5	3.6	-	-	Less than 1W
6945	2.6	3.6	-	-	Less than 1W
6961	2.6	3.7	-	-	Less than 1W
8941	2.7	2.8	4		Less than 1W
8945	3.85	4.38	7	4.64	Less than 1W
8961	6.6 (Gigabit Ethernet [GE] PC)	7.6 (GE PC)	-	-	1W
9951	7.3 (GE PC)	8.4 (GE PC)	13.8	9.8	1W
9971	7.5 (GE PC)	9.0 (GE PC)	14.1	10.4	1W

Cisco EnergyWise Power Savings to Control Operating Costs

You can calculate and average the maximum real-time power usage from Table 2 with the Power Save Plus mode. In other words, you can average the maximum possible daytime power usage with the minimum off-hours power usage. These statistics, when averaged, reflect the numbers necessary to proactively control operating costs.

Figures 8 and 9 demonstrate the power savings that you can achieve with Cisco Unified IP Phones that use Cisco EnergyWise Power Save Plus technology. The average power consumption is dramatically reduced by using Cisco EnergyWise Power Save Plus mode in off hours. The values in Figure 8 show the daily power usage averaged per hour with Cisco

EnergyWise off-hours Power Save Plus mode, and those in Figure 9 show the weekly power usage averaged per hour with Cisco EnergyWise off-hours Power Save Plus mode.

Figure 8 shows average power used in watts during a 24-hour cycle. Daily power measurements include 2 hours of handset + 2 hours of speakerphone + 4 hours Power Save (daytime) + 16 hours Power Save Plus (during off hours). A Gigabit Ethernet PC is attached.

Figure 9 shows the average power used in watts for 7 days. Weekly average statistics include 2 hours of handset per day + 2 hours of speakerphone per day + 4 hours Power Save per day + 16 hours Power Save Plus per day (during off hours) + Power Save Plus (during the weekend). A Gigabit Ethernet PC is attached.

Figure 8. Cisco EnergyWise Daily Power Draw Using Power Save and Power Save Plus (Averaged per Hour)
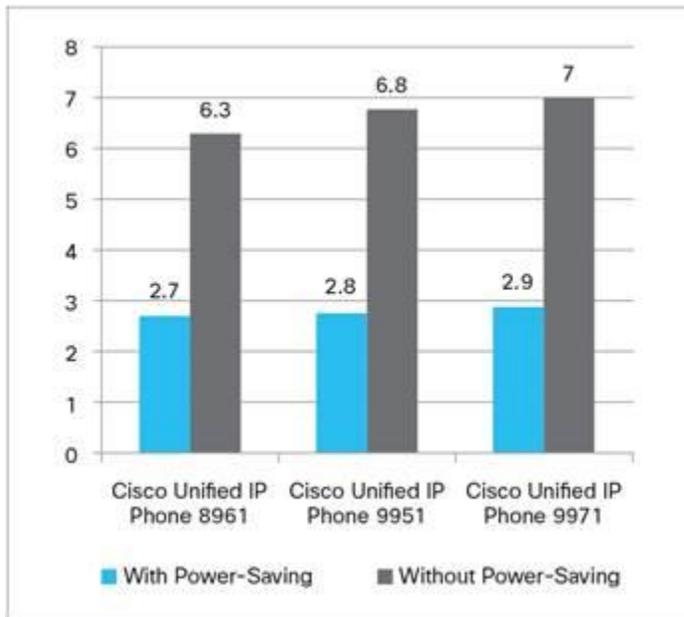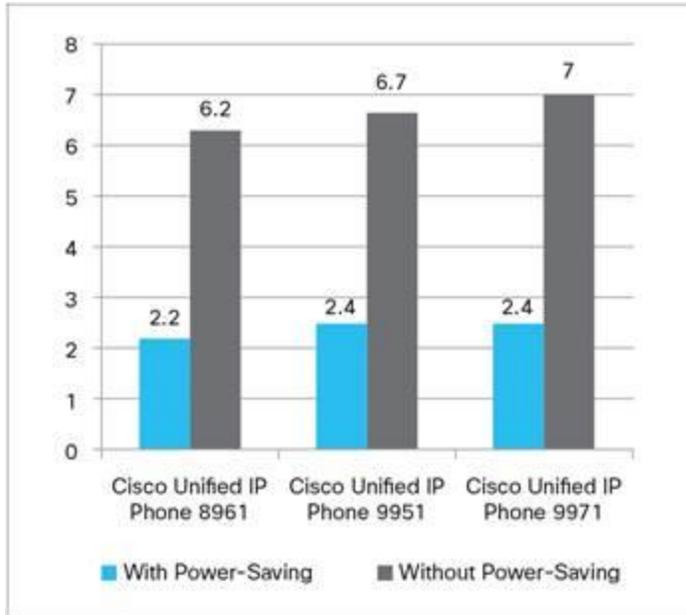

Figure 9. Cisco EnergyWise Weekly Power Draw Using Power Save and Power Save Plus (Averaged per Hour)

Using Cisco EnergyWise Technology with Cisco Unified IP Phones

The example in Figure 10 has several Cisco Unified IP Phones located in one building called Building_A. All Cisco Unified IP Phones and Cisco switches in this example are Cisco EnergyWise domain members. A Cisco EnergyWise domain is a logical grouping of Cisco EnergyWise technology-enabled entities such as Cisco Unified IP Phones. A Cisco EnergyWise domain is treated as a unit of power management, and multiple Cisco EnergyWise domains are possible for larger deployments. The minimum required to enable Cisco EnergyWise technology on a switch is to configure it as a member of a Cisco EnergyWise domain.

In this example the following global commands on the Cisco switch create a new Cisco EnergyWise domain:

Switch(config)#**energywise domain myDomain security shared-secret 0 mySecret**

Switch(config)#**energywise name Building_A**

Figure 10.   Cisco EnergyWise Domain Example

A comprehensive summary of all Cisco EnergyWise terminology is available at:
http://www.cisco.com/en/US/prod/collateral/switches/ps5718/ps10195/white_paper_c11-568212.html.

The Cisco switch command used to generate the real-time PoE values of directly attached PoE devices is **show energywise children**. In Figure 10 under the column "Lvl", the Cisco EnergyWise power state is Level 10, meaning that the Cisco Unified IP Phones are at full power. The Cisco EnergyWise power-level categories range from 0 to 10. For Cisco Unified IP Phones that are Cisco EnergyWise technology-aware, there are three primary Cisco EnergyWise categories: level 0 (shut), level 7 (medium), and level 10 (full). The Cisco switch can send level 0 to 2 and the phone initiates Power Save Plus mode. If the Cisco switch sends level 3 to 7, the phone initiates Power Save. Finally, if the Cisco switch sends level 9 to 10, the phone initiates full power.

Switch#sh energywise categories

Level Label Color

----- ----- -----

10 Full Red

9 High Red

8 Reduced Yellow

7 Medium Yellow

6 Frugal Green

5 Low   Green

4 Ready Blue

3 Standby Blue

2 Sleep Brown

1 Hibernate Brown

0 Shut Black

In Figure 10 under the column "Imp", the Cisco EnergyWise priority of the Cisco Unified IP Phones is **Importance 1,** which is the default. An example of where the Importance can and should be set higher is for an emergency phone that should never be powered off under any circumstances. Highlighted in red in Figure 10, the emergency phone is set at **Importance 100** in order to prevent accidental shutdown.

Under the "Name" column, notice that by default the name used is the Cisco Unified IP Phone MAC address. However, you can change the name on the port to accommodate a Domain Name System (DNS)-type naming convention in order to make Cisco EnergyWise queries with the use of wildcards. For example, the emergency phone uses the Cisco EnergyWise name of "E911" located in "Building_A". The following commands permit setting the Cisco EnergyWise importance and the Cisco EnergyWise name:

interface GigabitEthernet1/0/46

energywise importance 100

energywise name E911.building_A

Under the column "Type", this command displays the parent-child relationship between the Cisco switch and any PoE devices. It shows us that the Cisco switch is the parent and all the Cisco Unified IP Phones are PoE children. Cisco Unified IP Phones that use power bricks instead of PoE do not participate in a Cisco EnergyWise domain.

Note: Do not configure Power Save Plus on phones that use power bricks. This feature is not supported and should not be enabled when a power brick is attached.

Performing Cisco EnergyWise Power Queries on Cisco Unified IP Phones

The most basic way to issue a Cisco EnergyWise power query in a Cisco EnergyWise domain is through the CLI prompt. Keep in mind that this same command could be issued through SSL or a management application such as CiscoWorks LMS. You can issue queries that span an entire domain. In this example, the Cisco EnergyWise command queries the Cisco Unified IP Phone MAC address and sets the Cisco Unified IP Phone to the energy level 2, which is Power Save Plus. Note that "importance 80" means that anything greater than 80 will not be put to sleep. "Importance 80" is used to prevent the accidental shutdown of devices that should never be shut

down, such as the emergency phone, which has an Importance of 100. Of course, "level 0" could have been used instead of "level 2" in order to completely power off any Cisco Unified IP Phones that do not support Cisco EnergyWise technology.

Switch#**energywise query importance 80 name SEP00260BD8C9E3 set level 2**

EnergyWise query, timeout is 3 seconds:

!

Success rate is (1/1) setting entities

Queried: 1 Responded: 1 Time: 1.365 seconds

The next example repeats the previous command, but schedules a Cisco EnergyWise policy for a range of phones to automatically go into Power Save Plus mode at 5 p.m. and come out of Power Save Plus mode at 9 a.m. A range of ports is specified to turn Power Save Plus on or off starting at 5 p.m. and ending at 9 a.m. When scheduled, the command **show energywise recurrences** displays any queries that are set to run automatically.

Switch(config)#int range g1/0/40 - 48

Switch(config-if-range)#**energywise level 2 recurrence** importance 80 at 0 17 * * *

Switch(config-if-range)#**energywise level 10 recurrence** importance 80 at 0 9 * * *

Collecting Cisco Unified IP Phone Total Power Usage in a Cisco EnergyWise Domain

Just as you can issue a query to configure values or set levels on entities in a Cisco EnergyWise domain, you can collect the sum of all powered devices or a subset of devices in a domain. For example, to display the power consumption of just a subset of Cisco Unified IP Phones in a Cisco EnergyWise domain, you can use wildcards to perform the query. The proper use of wildcards in a Cisco EnergyWise naming convention permits this type of query. In the following example query, a second E911 phone is located in Building_B. The query "E911" immediately followed by the wildcard "*" is used to query the E911 phones located in Building_A and Building_B.

Switch#**energywise query importance 100 name E911* sum usage**

EnergyWise query, timeout is 3 seconds:

Total Usage

8.685 (W)

Queried: 2 Responded: 2 Time: 1.443 seconds

For more information about Cisco EnergyWise configuration, please refer to the "Cisco EnergyWise Configuration Guide" on Cisco.com.

Cisco EnergyWise Management and Reporting Tools

You can use Cisco EnergyWise application programming interfaces (APIs) to push out policies to Cisco switches using a Cisco EnergyWise management server. With Power Save Plus mode, you can configure Cisco Unified IP Phones to support being controlled through either Cisco Unified Communications Manager or a Cisco EnergyWise management server. Thus you have the flexibility to use either the Cisco Unified Communications Manager or the Cisco EnergyWise Policy Manager to provide authoritative control of the Cisco Unified IP Phone power level. For organizations that have not yet moved to Cisco EnergyWise technology, the Power Save option is available in Cisco Unified Communications Manager to reduce power consumption to as much as 1 watt per Cisco Unified IP Phone. This option allows organizations without Cisco EnergyWise technology to decrease total power consumption immediately using Cisco Unified Communications Manager.

In addition, CiscoWorks LMS 3.2 allows for a set of tools to easily query and manage the Cisco EnergyWise framework. The recommended approach is to use the Cisco EnergyWise protocol with Cisco EnergyWise Management (JouleX) - the only network-based and agent-less IT energy management application. Read more here. With any of these approaches, you can develop energy-consumption policies to match business needs. With Cisco EnergyWise technology you can measure the effect of energy policies to determine the cost savings for the organization.

Questions and Answers

Q. What is the Power Save Plus mode on Cisco Unified IP Phones 3900, 6900, 7800, 7900, 8800, 8900, 9900, and DX600 Series models?
A. Power Save Plus mode is a Cisco EnergyWise feature that enables Cisco Unified IP Phones to power down into a state of low-powered inactivity on a centrally managed schedule. In the case of the Cisco Unified IP Phone 3900 and 7900 Series models, the phone is powered down completely. For the other model series, phones are powered down to less than 1 watt, which is enough to enable a native manual override function. Power Save Plus is supported only on endpoints that use either Cisco prestandard line power or IEEE Power over Ethernet. The major benefit to customers is a reduction of the total cost of ownership (TCO) through the power savings and power monitoring.
Q. Does Power Save Plus mode mean you cannot use the phone?
A. For emergency use, the phone is not available while in Power Save Plus mode. For casual or business use, the phone is available after pressing the manual override button. The Cisco Unified IP Phone 6900, 7800, 8800, 8900, 9900, and DX600 Series phones use the Select key for manual override. Organizations can therefore achieve all the cost benefits of reducing energy across the network without disrupting productivity.
Q. What does it mean when you "wake up" the phone?

A. If you need to use a phone that has powered down into Power Save Plus mode, you can easily wake the phone by pressing a button. This option is critical because you can override the Cisco EnergyWise settings applied to the site. This intelligence is made possible because the phone and the switch work together to form a power-savings relationship.

Q. Will the phone go into Power Save Plus mode if you are on a call?

A. No. The Cisco IP Phone will not power down unless the phone is idle, so if the phone is active, it will not power down. Any use of the phone - whether it is calling, pressing a button, lifting the handset, or working with an application - delays the Power Save Plus function by a system-level user-configurable length of time; default is 1 hour. Cisco EnergyWise technology-enabled switches also can detect active calls so that no calls are interrupted.

Q. Can I stop the phone from going into Power Save Plus mode even if the phone is idle? For example, what if I am working late and the phone is currently idle, but I want to use the phone within the next hour?

A. Yes, you can stop the phone from going into Power Save Plus mode even if it is idle. If it is idle, the phone makes an audible and visible alert indicating that it is about to go into Power Save Plus state. You can then either pick up the handset or push a button on the phone to prevent the phone from going into this state.

Q. Are third-party vendors enabling Cisco EnergyWise Power Save Plus mode in their phones?

A. To the best of our knowledge, Cisco is currently the only phone vendor to enable this feature. Cisco uses Cisco EnergyWise technology embedded inside the Cisco Unified IP Phones. Customers may use the Cisco switch to power down third-party phones, but this configuration lacks the capability for end users to wake the phone up on demand.

Q. Can you provide a scenario of how Cisco EnergyWise Power Save Plus mode works and how a user can wake the phone up?

A. For example, the IT administrator has set a policy for the Dallas office phones to enter Power Save Plus at 8 p.m. At 8 p.m. all idle phones enter Power Save Plus mode. Bob has been out of the office all day, but he has an important conference at 9 p.m. with people in Asia. He enters the office and wishes to join the call using his desk phone. Even though the phone powered down into Power Save Plus mode at 8 p.m., Bob can wake up the phone at any time by pressing a button on the phone. Within moments, the phone is fully powered up and ready for his conference call.

Q. Can you provide a scenario of how a user can override Power Save Plus mode when not in a call?

A. For example, the IT administrator has set a policy for the Chicago office phones to enter Power Save Plus mode at 8 p.m. Nancy is working late in the office, and just before 8 p.m. she receives audible and visible alerts from her Cisco IP Phone indicating that it is about to go into Power Save Plus mode. Nancy pushes a button on her phone to override the action. At 8 p.m. all idle phones in the Chicago office except Nancy's phone go into Power Save Plus mode. At 8:15 p.m. Nancy makes a call; when she finishes her call, she leaves the office. An hour after Nancy finishes using her phone, her phone powers down into Power Save Plus mode. The IT administrator can configure the time it takes for Nancy's phone to power down after it becomes idle.

Q. What Cisco IP Phone models and firmware fully support embedded Cisco EnergyWise Power Save Plus mode?

A. The Cisco Unified IP Phone 6900, 7800, 8800, 8900, 9900, and DX600 Series all support this mode, beginning with firmware 9.2(1). Select Cisco Unified IP Phone 7900 Series models

support the Cisco EnergyWise Client. The Cisco Energywise technology also works with phones that do not support the client through Cisco Energywise Management (JouleX). http://www.cisco.com/go/energywise.

Q. Can Power Save Plus mode work without PoE?

A. No. If a power brick is powering up the Cisco IP Phone, then the Power Save Plus mode will not function.

References

- Configuration and Troubleshooting Guide for Cisco EnergyWise Power Save Plus Feature on Cisco IP Phones: http://www.cisco.com/en/US/prod/collateral/voicesw/ps6788/phones/ps10326/guide_c07-693645_ps379_Products_White_Paper.html

- Cisco EnergyWise homepage: http://www.cisco.com/go/energywise

- Cisco Unified IP Phones: Conserve Energy with Intelligent Power Allocation: http://www.cisco.com/en/US/prod/collateral/voicesw/ps6788/phones/ps379/white_paper_c11-481292.html

- Cisco Unified IP Phones: Cisco EnergyWise Deployment Considerations: http://www.cisco.com/en/US/products/ps6884/products_white_paper09186a0080ab9f0a.shtml

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