



Cisco EnergyWise IOS Command Reference for Catalyst 6500 Switches, EnergyWise Version 2.7

First Published: October 19, 2012

Americas Headquarters

Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
<http://www.cisco.com>
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

THE SPECIFICATIONS AND INFORMATION REGARDING THE PRODUCTS IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL STATEMENTS, INFORMATION, AND RECOMMENDATIONS IN THIS MANUAL ARE BELIEVED TO BE ACCURATE BUT ARE PRESENTED WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. USERS MUST TAKE FULL RESPONSIBILITY FOR THEIR APPLICATION OF ANY PRODUCTS.

THE SOFTWARE LICENSE AND LIMITED WARRANTY FOR THE ACCOMPANYING PRODUCT ARE SET FORTH IN THE INFORMATION PACKET THAT SHIPPED WITH THE PRODUCT AND ARE INCORPORATED HEREIN BY THIS REFERENCE. IF YOU ARE UNABLE TO LOCATE THE SOFTWARE LICENSE OR LIMITED WARRANTY, CONTACT YOUR CISCO REPRESENTATIVE FOR A COPY.

The Cisco implementation of TCP header compression is an adaptation of a program developed by the University of California, Berkeley (UCB) as part of UCB's public domain version of the UNIX operating system. All rights reserved. Copyright © 1981, Regents of the University of California.

NOTWITHSTANDING ANY OTHER WARRANTY HEREIN, ALL DOCUMENT FILES AND SOFTWARE OF THESE SUPPLIERS ARE PROVIDED "AS IS" WITH ALL FAULTS. CISCO AND THE ABOVE-NAMED SUPPLIERS DISCLAIM ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE.

IN NO EVENT SHALL CISCO OR ITS SUPPLIERS BE LIABLE FOR ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR LOSS OR DAMAGE TO DATA ARISING OUT OF THE USE OR INABILITY TO USE THIS MANUAL, EVEN IF CISCO OR ITS SUPPLIERS HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Any Internet Protocol (IP) addresses and phone numbers used in this document are not intended to be actual addresses and phone numbers. Any examples, command display output, network topology diagrams, and other figures included in the document are shown for illustrative purposes only. Any use of actual IP addresses or phone numbers in illustrative content is unintentional and coincidental.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: <http://www.cisco.com/go/trademarks>. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

© 2012 Cisco Systems, Inc. All rights reserved.



CONTENTS

Preface

Preface v

Document Conventions v

Related Documentation vii

Obtaining Documentation and Support on the Cisco Developer Network vii

Obtaining Documentation and Submitting a Service Request viii

CHAPTER 1

EnergyWise Commands 1

clear energywise 2

debug energywise 4

energywise (global configuration) 6

energywise (interface configuration) 10

energywise domain 14

energywise query 17

show energywise 22

snmp-server enable traps energywise 29



Preface

- [Document Conventions](#), page v
- [Related Documentation](#), page vii
- [Obtaining Documentation and Support on the Cisco Developer Network](#), page vii
- [Obtaining Documentation and Submitting a Service Request](#), page viii

Document Conventions

This document uses the following conventions:

Convention	Description
^ or Ctrl	Both the ^ symbol and Ctrl represent the Control (Ctrl) key on a keyboard. For example, the key combination ^D or Ctrl-D means that you hold down the Control key while you press the D key. (Keys are indicated in capital letters but are not case sensitive.)
bold font	Commands and keywords and user-entered text appear in bold font .
<i>Italic font</i>	Document titles, new or emphasized terms, and arguments for which you supply values are in <i>italic font</i> .
Courier font	Terminal sessions and information the system displays appear in <code>courier font</code> .
Bold Courier font	Bold Courier font indicates text that the user must enter.
[x]	Elements in square brackets are optional.
...	An ellipsis (three consecutive nonbolded periods without spaces) after a syntax element indicates that the element can be repeated.
	A vertical line, called a pipe, indicates a choice within a set of keywords or arguments.

Convention	Description
[x y]	Optional alternative keywords are grouped in brackets and separated by vertical bars.
{x y}	Required alternative keywords are grouped in braces and separated by vertical bars.
[x {y z}]	Nested set of square brackets or braces indicate optional or required choices within optional or required elements. Braces and a vertical bar within square brackets indicate a required choice within an optional element.
string	A nonquoted set of characters. Do not use quotation marks around the string or the string will include the quotation marks.
<>	Nonprinting characters such as passwords are in angle brackets.
[]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

Reader Alert Conventions

This document may use the following conventions for reader alerts:



Note

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.



Tip

Means *the following information will help you solve a problem*.



Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.



Timesaver

Means *the described action saves time*. You can save time by performing the action described in the paragraph.

**Warning****IMPORTANT SAFETY INSTRUCTIONS**

This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Use the statement number provided at the end of each warning to locate its translation in the translated safety warnings that accompanied this device. Statement 1071

SAVE THESE INSTRUCTIONS

Related Documentation

See the latest release notes at [Cisco IOS Release Notes for Cisco EnergyWise, EnergyWise Version 2.8](#) for the following information:

- For the list of devices that EnergyWise supports, see the "Supported Devices" section.
- For Device Manager requirements, see the "System Requirements" section.
- For upgrade information, see the "Downloading Software" section.

For information about the Cisco IOS Release commands, see the Cisco IOS documentation set on Cisco.com.

For initial configuration information, see the "Using Express Setup" section in the getting started guide or the "Configuring the Switch with the CLI-Based Setup Program" appendix in the hardware installation guide.

For information about how to install your network device, see the hardware installation guide for your device.

For Network Assistant requirements, see *Getting Started with Cisco Network Assistant* (not orderable but available on Cisco.com). This guide does not provide detailed information on the GUIs for embedded Device Manager or for Cisco Network Assistant (hereafter referred to as *Network Assistant*), which you can use to manage the domain member. However, the concepts in this guide are applicable for the GUI user. For information about Device Manager, see the domain member online help.

For cluster requirements, see the release notes for Cisco Network Assistant (not orderable but available on Cisco.com).

For information about the management application programming interface (MAPI) and endpoint software development kit (SDK), go to the [Cisco Developer Network](#).

Obtaining Documentation and Support on the Cisco Developer Network

Cisco EnergyWise development partners can access the Cisco EnergyWise documents, MAPI and SDK software code, and Cisco IOS software by joining the Cisco Developer Network: <http://developer.cisco.com/web/esdk/home>

You need a support contract and license to access Cisco EnergyWise resources on the Cisco Developer Network and on TAC. The business development manager who registered your licence must set up your Cisco.com account with the appropriate access privileges.

The forum, wiki, and other resources on the Cisco Developer Network provide a self-help knowledge base and community for Cisco EnergyWise application developers and programmers. You can get additional support by opening a case in the TAC Service Request Tool: <http://tools.cisco.com/ServiceRequestTool/create/launch.do>

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/c/en/us/td/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.



EnergyWise Commands

- [clear energywise](#), page 2
- [debug energywise](#), page 4
- [energywise \(global configuration\)](#), page 6
- [energywise \(interface configuration\)](#), page 10
- [energywise domain](#), page 14
- [energywise query](#), page 17
- [show energywise](#), page 22
- [snmp-server enable traps energywise](#), page 29

clear energywise

To delete the discovered domain member neighbors and IP endpoints from the EnergyWise database, use the **clear energywise** privileged EXEC command.

clear energywise {endpoints [all | cached] | neighbors}

Syntax Description

endpoints	<p>Clears the connected EnergyWise-capable IP endpoints. PoE devices that do not run the agent are not deleted.</p> <ul style="list-style-type: none"> • (Optional) all—Removes all operational and nonoperational (cached) EnergyWise endpoints. • (Optional) cached— Removes only nonoperational (cached) EnergyWise endpoints.
neighbors	<p>Deletes the discovered domain member neighbors from the EnergyWise database. After the discovered domain members are deleted the local domain member immediately begins to rediscover any connected neighbors.</p>

Command Default

None

Command Modes

Privileged EXEC

Command History

Release	First EW Version	Modification
Cisco IOS 12.2(33)SX14	2	On Cisco Catalyst 6500 Series Switches: This command was introduced.

Usage Guidelines

To check that you have deleted neighbors and endpoints from the database, use the **show energywise neighbors** privileged EXEC command.

If you enter the **clear energywise neighbors** command, all non static neighbors are cleared and the neighbor table is updated. If the command is not used and an entry becomes obsolete, the entry is removed only during the next automatic update, which happens approximately every 30 minutes.



Note

If you statically add a neighbor, the **clear energywise neighbors** privileged EXEC command does not affect it.

Examples

This example shows the EnergyWise children before and after using the **clear energywise endpoints** privileged EXEC command.

Before clearing endpoints:

```
DomainMember# show energywise children
Module/
Interface Role Name Usage Category Lvl Imp Type
-----
Switch Switch 94.0 (W) consumer 10 100 module
Gi0/12 Parent Endpoint 12.0 (W) consumer 10 50
endpoint
Gi0/14 IP Phone 7960 SEP000E833CB4E3 1.88 (W) consumer 10 35 PoE
Gi0/15 IP Phone 7960 SEP0011920E0A05 1.775 (W) consumer 10 35 PoE
```

Clearing endpoints:

```
DomainMember# clear energywise endpoints all
Cleared all energywise endpoints
```

After clearing endpoints:

```
DomainMember# show energywise children
Module/
Interface Role Name Usage Category Lvl Imp Type
-----
Switch Switch 94.0 (W) consumer 10 100 module
Gi0/14 IP Phone 7960 SEP000E833CB4E3 1.88 (W) consumer 10 35 PoE
Gi0/15 IP Phone 7960 SEP0011920E0A05 1.775 (W) consumer 10 35 PoE
```

Related Commands

Command	Description
show energywise, on page 22	Displays EnergyWise settings.

debug energywise

To debug EnergyWise endpoints and management stations, use the **debug energywise** privileged EXEC command.

debug energywise {**debug**| **discovery**| **endpoint**| **ha**| **management**| **packet**| **query**| **trace**| **wol**}

Syntax Description

debug	Displays errors such as invalid sequence numbers and communication errors on the domain.
discovery	Displays all EnergyWise discovery information.
endpoint	Displays information about EnergyWise endpoints running a client or agent and helps detect mismatched domain names, secrets, and sequence numbers of connected endpoints.
ha	Displays EnergyWise high availability (HA) information for devices that have HA capability.
management	Displays information about authentication failures and EnergyWise management stations running power management applications.
packet	Displays EnergyWise packet trace information.
query	Displays query information with respect to the device from which the query is initiated.
trace	Displays information about all the EnergyWise processes with respect to the device from which the query is initiated.
wol	Displays Wake on LAN (WoL) query information with respect to the device from which the query is initiated.

Command Default

EnergyWise debugging is disabled.

Command Modes

Privileged EXEC

Command History

Release	First EW Version	Modification
Cisco IOS 12.2(33)SX14	2	On Cisco Catalyst 6500 Series Switches: This command was introduced.

Usage Guidelines

Because debugging output is assigned high priority in the CPU process, it can render the system unusable. For this reason, use **debug** commands only to troubleshoot specific problems or during troubleshooting sessions with Cisco technical support staff. Use **debug** commands during periods of lower network traffic and fewer users. Debugging during these periods decreases the likelihood that increased **debug** command processing overhead will affect system use.

The **undebug energywise** command is the same as the **no debug energywise** command.

When you enable debugging on a stacking-capable switch, it is enabled only on the stack master. To enable debugging on a stack member, use the **session switch-number** privileged EXEC command to start a session from the stack master. Enter the **debug** command on the stack member command-line prompt. You can also use the **remote command stack-member-number LINE** privileged EXEC command on the stack master to enable debugging on a member switch before you start a session.

Examples

This example shows how to enable debugging for an EnergyWise query:

```
DomainMember# debug energywise query
Query debug debugging is on

DomainMember# energywise query importance 100 name sw* set level 1
EnergyWise query, timeout is 6 seconds:

May 19 00:38:28.596: NRGYZ:QUERY:Created query packet, locked CLI (0x77DCB24)!
Success rate is (1/1) setting entities

Queried: 1    Responded: 1    Time: 4.27 seconds

DomainMember#
May 19 00:38:38.624: NRGYZ:QUERY:Set CLI boolean, ready to unlock CLI (0x72238AC)
May 19 00:38:38.624: NRGYZ:QUERY:Unlocked CLI (0x72238AC)
```

energywise (global configuration)

To configure EnergyWise on a domain member or endpoint, use the **energywise** global configuration command. To disable EnergyWise and to remove the EnergyWise configuration, use the **no** form of this command.

```
energywise allow query {save| set}
```

```
energywise endpoint security {none| shared-secret [0|7] password}
```

```
energywise {importance importance| keywords word word ...| level level| name name| neighbor {hostname| ip address} udp-port-number| role role}
```

```
energywise management security shared-secret [0|7] mgmt-password [port tcp-port-number]
```

```
no energywise {allow query| {save| set}| endpoint| importance| keywords| level| management| name| neighbor| role}
```

Syntax Description

allow query	Configures the domain member to respond to queries from the management station or another domain member. <ul style="list-style-type: none"> • save—Responds to a query to save the running configuration. • set—Responds to a query to change the power level or the EnergyWise attributes.
endpoint security	Sets the security mode for an endpoint. <ul style="list-style-type: none"> • none—Disables security. • shared-secret—Uses a password for secure communication with the connected domain member. • (Optional) 0—Uses a plain-text password. • (Optional) 7—Uses a hidden password. <p>If you do not enter 0 or 7, the default is 0.</p> <ul style="list-style-type: none"> • For the <i>password</i>: <ul style="list-style-type: none"> • You can enter alphanumeric characters and symbols, such as #, (, \$, !, and &. • Do not enter an asterisk (*) or a space between the characters or symbols.
importance importance	Sets the importance. The range is from 1 to 100.

keywords <i>word word ...</i>	<p>Assigns at least one keyword.</p> <p>When assigning multiple keywords, separate the keywords with commas, and do not use spaces between keywords.</p> <ul style="list-style-type: none"> You can enter alphanumeric characters and symbols, such as #, (, \$, !, and &. Do not enter an asterisk (*) or a space between the characters or symbols.
level <i>level</i>	Sets the power level. The range is from 0 to 10.
name <i>name</i>	<p>Specifies the EnergyWise-specific name.</p> <ul style="list-style-type: none"> You can enter alphanumeric characters and symbols, such as #, (, \$, !, and &. Do not enter an asterisk (*) or a space between the characters or symbols.
neighbor	<p>Assigns a static neighbor.</p> <ul style="list-style-type: none"> { <i>hostname</i> <i>ip address</i> }—You can enter alphanumeric characters and symbols, such as #, (, \$, !, and &. <i>udp-port-number</i>—Sends and receives queries. The range is from 1 to 65000.
role <i>role</i>	<p>Specifies the role in the EnergyWise domain. For example, lobby.b20.</p> <ul style="list-style-type: none"> You can enter alphanumeric characters and symbols, such as #, (, \$, !, and &. Do not enter an asterisk (*) or a space between the characters or symbols.
management security shared-secret	<p>Sets the management password for the management station communicating with the domain.</p> <ul style="list-style-type: none"> (Optional) 0—Uses a plain-text password. (Optional) 7— Uses a hidden password. If you do not enter 0 or 7, the default is 0. For the <i>mgmt-password</i>: <ul style="list-style-type: none"> You can enter alphanumeric characters and symbols such as #, (, \$, !, and &. Do not enter an asterisk (*) or a space between the characters or symbols.

port *tcp-port-number* (Optional) Specifies the TCP port for management access. The port number range is from 1025 to 65535.

Command Default



Important

EnergyWise is disabled by default. When EnergyWise is enabled, these are the defaults if they are not otherwise configured:

- The domain member interfaces do not respond to save queries.
- The interfaces respond to set queries.
- The endpoint and management passwords are not set.
- The importance is 1.
- Keywords are not defined.
- The power level is 10.
- The tcp-port-number is 43440.
- The name is the hostname.
- Neighbors are not assigned.
- The role is the model number.

Command Modes

Privileged EXEC

Command History

Release	First EW Version	Modification
Cisco IOS 12.2(33)SX14	2	On Cisco Catalyst 6500 Series Switches: This command was introduced.

Usage Guidelines

When you add a domain member to a domain, EnergyWise is enabled on the domain member.

When you add a PoE switch to a domain by entering the **energywise domain** global configuration command, the switch and all interfaces (PoE or otherwise) are managed through EnergyWise.

When setting a hidden (encrypted) password, enter the **service password-encryption** global configuration command before entering the **energywise management security shared-secret 7 mgmt-password [port tcp-port-number]** global configuration command.

If you enter the **no energywise level** command, the domain member does not immediately change the power level to the default. The power level changes when the domain member restarts or when you enter the **energywise level level** command.

Examples

This example shows how to enable EnergyWise, assign an IP phone to a domain, and set the domain and management passwords:

```
DomainMember# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
DomainMember(config)# energywise domain cisco security shared-secret cisco protocol udp
port 43440 ip 2.2.4.30
DomainMember(config)# energywise importance 50
DomainMember(config)# energywise keywords lab1,devlab
DomainMember(config)# service password-encryption
DomainMember(config)# energywise management security shared-secret 7 cisco port 60500
DomainMember(config)# energywise name Device01
DomainMember(config)# energywise neighbor member-21 43440
DomainMember(config)# energywise role role.labaccess
DomainMember(config)# energywise allow query save
DomainMember(config)# end
```

Related Commands

Command	Description
show energywise, on page 22	Displays the EnergyWise settings and status.

energywise (interface configuration)

To configure EnergyWise on the domain member port, use the **energywise** interface configuration command. To disable EnergyWise and to remove the EnergyWise configuration, use the **no** form of this command.

energywise [**activitycheck** | **allow query set** | **importance** *importance* | **keywords** *word ,word ...* | **level** *level* | [**recurrence** **importance** *importance* | {**at** *minute hour day_of_month month day_of_week* | **time-range** *time-range-name* }] | **name** *name* | **role** *role*]

no energywise [**activitycheck** | **allow query set** | **importance** *importance* | **keywords** *word word ...* | **level** *level* | [**recurrence** **importance** *importance* | {**at** *minute hour day_of_month month day_of_week* | **time-range** *time-range-name* }] | **name** *name* | **role** *role*]

Syntax Description

activitycheck	(Optional) Configures the domain member to wait until a Cisco IP phone connected to a PoE port is not sending or receiving traffic before the domain member powers off the port. Note The domain member cannot determine if the IP phone is in the hold state.
allow query set	(Optional) Configures the interface to respond to a query changing the power level and the EnergyWise attributes if the interface receives a query from the management station or another domain member.
importance <i>importance</i>	(Optional) Sets the importance of the port. The range is from 1 to 100.
keywords <i>word, word,...</i>	(Optional) Assigns at least one keyword for the port. When assigning multiple keywords, separate the keywords with commas, and do not use spaces between keywords. <ul style="list-style-type: none"> • You can enter alphanumeric characters and symbols, such as #, (, \$, !, and &. • Do not enter an asterisk (*) or a space between the characters or symbols.
level <i>level</i>	(Optional) Sets the power level of the port. The range is from 0 and 10. <ul style="list-style-type: none"> • To power off the endpoint, enter 0 • To power on the endpoint: <ul style="list-style-type: none"> ◦ If it is a PoE endpoint, enter 10. ◦ If it is not a PoE endpoint, enter a power level from 1 to 10. The endpoint determines the appropriate action.

recurrence importance (Optional) Schedules the power on or power-off event.

importance at minute

hour day_of_month

month day_of_week |

time-range

time-range-name

- **importance** *importance* —The event occurs if the importance value of the endpoint is less than or equal to the specified importance value. The range is from 1 to 100.
- **at** *minute hour day_of_month month day_of_week*—Specifies the time (24-hour clock) in cron format for the recurring event.
 - *minute*—The range is from 0 to 59. Use * for the wildcard.
 - *hour*—The range is from 0 to 23. Use * for the wildcard.
 - *day_of_month*—The range is from 0 to 31. Use * for the wildcard.
 - *month*—The range is from 1 (January) to 12 (December). Use * for the wildcard.
 - *day_of_week*—The range is from 0 (Sunday) to 7 (Sunday). Use * for the wildcard.
- **time-range** *time-range-name*—Specifies the time range name for the recurring event.

The event uses the domain member time.

name *name*

(Optional) Specifies the EnergyWise-specific port name.

- You can enter alphanumeric characters and symbols, such as #, (, \$, !, and &.
- Do not enter an asterisk (*) or a space between the characters or symbols.

role *role*

(Optional) Specifies the role of the port in the domain, such as a *lobbyport*.

- You can enter alphanumeric characters and symbols, such as #, (, \$, !, and &.
 - Do not enter an asterisk (*) or a space between the characters or symbols.
-

Command Default

The following are the default settings or values for the different parameters:

- EnergyWise is disabled.
- The domain member responds to a query to change the power level and the EnergyWise attributes.
- The importance is 1.
- Keywords are not defined.
- The power level is 10.
- The recurring event is not configured.
- The name is the short version of the port name, for example, Gi1.0.2 for Gigabit Ethernet 1/0/2.

- The role is the model number.

Command Modes

Privileged EXEC

Command History

Release	First EW Version	Modification
Cisco IOS 12.2(33)SXI4	2	On Cisco Catalyst 6500 series switches: This command was introduced.

Usage Guidelines

If activity check is enabled, the domain member waits until a Cisco IP phone connected to a PoE port is not sending or receiving traffic before powering off the port. Before using the **energywise activitycheck** command, see the "Activity Check" section of the EnergyWise configuration guide.

If you enter the **no energywise level** command, the domain member does not immediately change the power level to the default. The power level changes when the domain member restarts or when you enter the **energywise level level** command.

For a recurring event, to configure multiple dates and times using the cron format (*minute hour day_of_month month day_of_week*)

- Use a comma (,) to specify a list of values without spaces between the values, for example, 1,3,4,7,8.
- Use a dash (-) to specify a range of values, for example, 1-6 (same as 1,2,3,4,5,6).
- Use an asterisk (*) for a wildcard.
- Use a slash (/) to skip a specific number of values. For example:
 - Enter */15 * * * * for the event to occur every 15 minutes.
 - Enter 0-59/3 * * * * or 0,20,40 for the event to occur every 20 minutes.
 - Enter */61 * * * * for the event to occur every hour.
 - Enter * */3 * * * * or 0,3,6,9,12,15,18,21 for the event to occur every three hours.

For information about specifying the *day_of_month* and the *day_of_week* in the **energywise level level recurrence importance importance at minute hour day_of_month month day_of_week** command, see the "Configuring Recurrences" section of the EnergyWise configuration guide.

When you enter the **time-range time-range-name** global configuration command, you can configure the following commands in the time range configuration mode:

- **absolute**—Sets a specific time and day for a recurring event. Cisco EnergyWise uses only the start time for this condition. Any configured end times are ignored.
- **periodic**—Sets a weekly time and day for a recurring event. You must enter a start and end time for this condition.

For EnergyWise recurrences, set the periodic time to after the absolute start time or do not set the absolute start time at all. This way the time-range is active only after the first periodic start time. If only the absolute time-range is configured, the recurring event does not occur.

Examples

This example shows how to enable and configure EnergyWise on a port and how to configure a recurring event, where the PCs on the first floor of a building automatically power on at 06:00 a.m. and power off at 09:00 p.m. everyday.

In the example, the interface ID is in this format: *typeslot-or-module-number/port-number*, for example, gigabitethernet 0/5. To specify an interface, see your device software documentation.

```
DomainMember# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
DomainMember(config)# service password-encryption
DomainMember(config)# energywise domain cisco security shared-secret cisco protocol udp
port 43440 ip 2.2.4.30

DomainMember(config)# time-range onfirstfloor
DomainMember(config-time-range)# absolute start 0:00 1 August 2009
DomainMember(config-time-range)# periodic daily 06:00 to 21:00

DomainMember(config)# time-range offfirstfloor
DomainMember(config-time-range)# absolute start 0:00 1 August 2009
DomainMember(config-time-range)# periodic daily 00:00 to 05:55
DomainMember(config-time-range)# periodic daily 21:01 to 23:59
DomainMember(config-time-range)# exit

DomainMember(config)# interface gigabitethernet0/3
DomainMember(config-if)# energywise level 10 recurrence importance 70 time-range onfirstfloor
DomainMember(config-if)# energywise level 0 recurrence importance 70 time offfirstfloor
DomainMember(config-if)# energywise name floor.1
DomainMember(config-if)# energywise role pc-mgr
DomainMember(config-if)# end
```

Related Commands

Command	Description
absolute	Specifies an absolute time for a time-range.
periodic	Specifies a recurring (weekly) time range for functions that support the time-range feature.
show energywise, on page 22	Displays the EnergyWise settings and status.

energywise domain

To enable Cisco EnergyWise on a network device or endpoint, assign it to a domain, set the domain security mode, and set the domain password, use the **energywise domain** global configuration command. To disable EnergyWise and to remove the EnergyWise configuration, use the **no** form of this command.

energywise domain *domain-name* **security** {**ntp-shared-secret**|**shared-secret**} [**0**|**7**] *domain-password* [**protocol udp port** *udp-port-number* | [**interface** *interface-id* **ip** *ip-address*]]

no energywise domain

Syntax Description

<i>domain-name</i>	The domain name assigned to a network device or endpoint. <ul style="list-style-type: none"> You can enter alphanumeric characters and symbols, such as #, (, \$, !, and &. Do not enter an asterisk (*) or a space between the characters or symbols.
security	Sets the domain security mode and the domain password to authenticate all communication in the domain.
ntp-shared-secret	Uses a strong password with Network Time Protocol (NTP). If the time between members varies ± 30 seconds the domain member or endpoint drops events.
shared-secret	Sets a strong domain password without NTP.
0 7	Uses a password for secure communication with the connected domain member. you can specify these values: <ul style="list-style-type: none"> (Optional) 0—Uses a plain-text password. (Optional) 7—Uses a hidden password. <p>If you do not enter 0 or 7, the default is 0.</p>
<i>domain-password</i>	Plain-text password. <ul style="list-style-type: none"> You can enter alphanumeric characters and symbols such as #, (, \$, !, and &. Do not enter an asterisk (*) or a space between the characters or symbols.

protocol udp number <i>udp-port-number</i>	(Optional) Specifies UDP as the communication protocol and specifies the UDP port that communicates with the domain. The range is from 1 to 65000.
interface <i>interface-id</i>	(Optional) Specifies the port that communicates with the domain if the IP address is dynamically assigned. We recommend that you specify the interface ID. You should use this in a bridged network.
ip <i>ip-address</i>	(Optional) Specifies the IP address that communicates with the domain if the interface is a switched virtual interface (SVI) and VLAN trunking protocol (VTP) pruning is enabled. You should use this in a routed network.

Command Default EnergyWise is disabled, and the network device or endpoint is not assigned to a domain.
The domain password is not set.
The *udp-port-number* is 43440.

Command Modes Global configuration

Command History	Release	First EW Version	Modification
	Cisco IOS 12.2(33)SX14	2	On Cisco Catalyst 6500 series switches: This command was introduced.

Usage Guidelines Entering the **no energywise domain** command disables EnergyWise on the domain member.
To check that you have deleted neighbors and endpoints from the database, use the **show energywise neighbors** privileged EXEC command.



Note If you statically add a neighbor, the **clear energywise neighbors** privileged EXEC command does not affect it.

If you enter the **energywise domain domain-name security {ntp-shared-secret | shared-secret} [0 | 7] domain-password** command, the domain member selects the first available port for communicating with the management station.

When setting a hidden (encrypted) password, enter the **service password-encryption** global configuration command before entering the **energywise management security shared-secret 7 mgmt-password [port tcp-port-number]** global configuration command.

When configuring a domain, ensure that you set the same security mode (either **ntp-shared-secret** or **shared-secret**) for all the domain members.

When using **ntp-shared-secret** in a domain, ensure that the domain members are running NTP to synchronize their clocks. If NTP is not used or the clocks are not synchronized, some domain members may not be discovered.

Examples

This example shows how to enable EnergyWise, set the *domain-name* and *domain-password*, and specify the IP address:

```
DomainMember# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
DomainMember(config)# service password-encryption
DomainMember(config)# energywise domain cisco security shared-secret cisco protocol udp
port 43440 ip 2.2.4.30
```

Related Commands

Command	Description
show energywise, on page 22	Displays the EnergyWise settings and status.

energywise query

To display power information and to set the power level of domain members, use the **energywise query** privileged EXEC command.

energywise query analyze domain *domain-name*

energywise query importance *importance* **keywords** *word, word,...* **name** *name* **collect** {**delta** **usage**} [**all** | **timeout** *timeout*] | **consumer** [**timeout** *timeout*] | **meter** [**timeout** *timeout*] | **producer** [**timeout** *timeout*] | **timeout** *timeout*

energywise query importance *importance* **keywords** *word, word,...* **name** *name* **set level** *level* [**all** | **timeout** *timeout*] | **consumer** [**timeout** *timeout*] | **meter** [**timeout** *timeout*] | **producer** [**timeout** *timeout*] | **timeout** *timeout*

energywise query importance *importance* **keywords** *word, word,...* **name** *name* **sum** {**delta** **usage**} [**all** | **timeout** *timeout*] | **consumer** [**timeout** *timeout*] | **meter** [**timeout** *timeout*] | **producer** [**timeout** *timeout*] | **timeout** *timeout*

energywise query importance *importance* **keywords** *word, word,...* **name** *name* **wol mac** *mac-address* [**password** *password*] **port** *tcp-port-number* [**password** *password*]

Syntax Description

analyze domain <i>domain-name</i>	Runs a query to analyze and display information about the domain, including the domain size and the number of members and endpoints.
importance <i>importance</i>	Only domain members or endpoints with importance values less than or equal to the specified value respond to the query. The importance range is from 1 to 100.
keywords <i>word, word, ...</i>	Filters the results based on one or more keywords. When specifying multiple keywords, separate the keywords with commas and do not use spaces between keywords. <ul style="list-style-type: none"> You can enter alphanumeric characters and symbols, such as #, (, \$, !, and &. Do not enter an asterisk (*) or a space between the characters or symbols.
name <i>name</i>	Filters the results based on the name. For wildcards, use * or name* with the asterisk at the end of the name phrase. <ul style="list-style-type: none"> You can enter alphanumeric characters and symbols, such as #, (, \$, !, and &. Do not enter an asterisk (*) or a space between the characters or symbols.

collect { <i>delta usage</i> }	Displays power-usage information from the domain members and endpoints in watts (W). <ul style="list-style-type: none"> • delta—Displays the delta vector with the difference between the actual power usage and the maximum power usage for each power level for what-if calculations. • usage—Displays the actual power usage.
all	(Optional) Displays EnergyWise devices of all usage types.
timeout <i>timeout</i>	(Optional) Sets the time in seconds that the management station waits for query results. The range is from 1 to 180. When configuring the timeout, configure a minimum of 6 seconds to display correct output.
consumer	Filters the results to display devices that consume power, such as a switch. This is the default usage type.
meter	Filters the results to display devices that measure the pass-through power, such as a PDU that sends power from a source to a connected device.
producer	Filters the results to display devices that generate power, such as a solar panel.
set level <i>level</i>	Sets the power level of the domain members or endpoints, including the PoE ports. The range is from 0 to 10.
sum { <i>delta usage</i> }	Displays the summary of the power-usage information from domain members and endpoint. <ul style="list-style-type: none"> • delta—Displays the delta vector. • usage—Displays the actual power usage.
wol mac <i>mac-address</i>	Filters the results based on the MAC address and powers on only the device with the matching MAC address.
password <i>password</i>	(Optional) Specifies the WoL password configured on the WoL-enabled endpoint. The password must be 6 characters long.
port number <i>port number</i>	(Optional) Specifies the port number on which the WoL-enabled endpoint listens for WoL packets.

Command Default

The timeout value is 6 seconds.

The port-number is 7.

The usage type is consumer.

Command Modes Privileged EXEC

Command History	Release	First EW Version	Modification
	Cisco IOS 12.2(33)SX14	2	On Cisco Catalyst 6500 series switches: This command was introduced.
	-	2.6	The default timeout value was changed from 3 seconds to 6 seconds.

Usage Guidelines Use this query with care. It affects the domain member on which you enter the command and other domain members and endpoints that match the query criteria.

If the timeout value in the **energywise query importance** privileged EXEC command is too short, the management station does not receive query results when the domain members and endpoints respond to the query. For example, if you want to power off a specific phone but the *timeout* value in the **energywise query importance** command is too short, the phone is not powered off. When configuring the timeout, configure a minimum of 6 seconds to display correct output.

Do not run a query with **keywords ***. No results are generated.

When sending a WoL magic packet, if you do not know where the device is located, use the **energywise query importance 100 name * wol mac mac-address** command to send the packet to all domain members.

Examples These examples show how to filter with the name:

```
DomainMember# energywise query importance 50 name phone* collect usage
EnergyWise query, timeout is 6 seconds:
Host Name Usage Level Imp
-----
2.2.2.21 phone 0.0 (W) 10 1
2.2.2.21 phone 15.4 (W) 10 1
2.2.2.21 phoneA 0.0 (W) 10 1
2.2.2.22 phone 0.0 (W) 10 1
2.2.2.21 phoneB 0.0 (W) 10 1
2.2.2.22 phoneC 15.4 (W) 10 1
2.2.2.21 phone 0.0 (W) 10 1
2.2.2.23 phoneD 15.4 (W) 10 1
2.2.2.21 phone 0.0 (W) 10 1
Queried: 9 Responded: 9 Time: 0.26 seconds
```

```
DomainMember# energywise query importance 80 name * sum usage
EnergyWise query, timeout is 6 seconds:
Total Usage
-----
346.3 (W)
Queried: 147 Responded: 147 Time: 0.121 seconds
```

```
DomainMember# energywise query importance 90 name lobby* collect usage
EnergyWise query, timeout is 6 seconds:
Host Name Usage Level Imp
-----
2.2.4.30 lobbyInterface.17 10.0 (W) 10 1
2.2.6.20 lobbypc.17 200.0 (W) 8 90
```

```
Queried: 2 Responded: 2 Time: 0.7 seconds
```

```
DomainMember# energywise query importance 900 name Fa1.0.4* sum usage
EnergyWise query, timeout is 6 seconds:
Total Usage
-----
129.0 (W)
Queried: 10 Responded: 10 Time: 0.6 seconds
```

This example shows the summary of the delta values and the potential power change in the domain:

```
DomainMember# energywise query importance 90 name * collect delta
EnergyWise query, timeout is 6 seconds:
Level Label Delta Power (W)
-----
0 Shut -12.9
1 Hibernate +723.8
2 Sleep +723.8
3 Standby +723.8
4 Ready +723.8
5 Low +723.8
6 Frugal +723.8
7 Medium +723.8
8 Reduced +723.8
9 High +723.8
10 Full +723.8
Queried: 48 Responded: 48 Time: 0.15 seconds
```

These examples show how to change the power level of all the domain members and endpoints.

```
DomainMember# energywise query importance 90 name * set level 0
EnergyWise query, timeout is 6 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is (48/48) setting entities
Queried: 48 Responded: 48 Time: 0.996 seconds
```

```
DomainMember# energywise query importance 90 name * set level 10
EnergyWise query, timeout is 6 seconds:
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is (48/48) setting entities
Queried: 48 Responded: 48 Time: 0.996 seconds
```

These examples show how to filter results with keywords.

```
DomainMember(config)# interface gigabitethernet0/2
DomainMember(config-if)# energywise keywords lobby,sattelite
DomainMember(config-if)# energywise keywords public
DomainMember(config-if)# end

DomainMember# show running-config interface gigabitethernet0/2
interface GigabitEthernet0/2
energywise level 0 recurrence importance 90 at 0 8 * * *
energywise level 10 recurrence importance 90 at 0 20 * * *
energywise importance 50
energywise role role.lobbyaccess
energywise keywords lobby,sattelite,public
energywise name lobbyInterface.2
DomainMember# end

DomainMember# energywise query importance 90 keyword lobby collect usage
EnergyWise query, timeout is 6 seconds:
Host Name Usage Level Imp
-----
2.2.4.30 lobbyInterface.17 15.4 (W) 10 1
2.2.5.30 pc.1 200.0 (W) 8 85
2.2.6.30 pc.2 200.0 (W) 8 85
Queried: 3 Responded: 3 Time: 1.1 seconds
DomainMember# energywise query importance 90 keyword lobby sum usage
EnergyWise query, timeout is 6 seconds:
Total Usage
-----
415.4 (W)
```

Queried: 3 Responded: 3 Time: 0.11 seconds

This example shows how to send a directed WoL magic packet:

```
DomainMember# energywise query importance 100 keyword PC wol mac 0123.4567.89ab  
EnergyWise query, timeout is 6 seconds:  
Success rate is (1/1) setting entities  
Queried: 1 Responded: 1 Time: 4.31 seconds
```

show energywise

To display the EnergyWise settings, the status of the domain member, and the status of the domain member port with a connected endpoint, use the **show energywise** privileged EXEC command.

show energywise [categories |children [provisioned] |domain |events |level [children | current [children] | delta [children]] |neighbors | |recurrences |statistics |usage [children] |version]

Syntax Description

categories	(Optional) Displays the power levels.
children [provisioned]	(Optional) Displays the status of the connected endpoint. (Optional) provisioned —Displays a summary of the EnergyWise information for the domain member and the connected endpoints.
domain	(Optional) Displays the name, domain name, protocol, IP address, and UDP port for the domain.
events	(Optional) Displays the last ten events (messages) sent to other members in the domain.
level [children current [children] delta [children]	(Optional) Displays the actual power levels. <ul style="list-style-type: none"> (Optional) children—Actual power levels for the domain member and connected endpoints. (Optional) current—Actual power levels for the domain member. (Optional) children—Actual power levels for the domain member and connected endpoints. (Optional) delta—Delta vector for the domain member. (Optional) children—Delta vector for the domain member and connected endpoints.
neighbors	(Optional) Displays the neighbor table for the domain member.
recurrences	(Optional) Displays the EnergyWise settings and status for the recurring event.
statistics	(Optional) Displays the counters for events and errors.
usage[children]	(Optional) Displays the actual power for the domain member. (Optional) children —Displays the actual power for the domain member and connected endpoints.
version	(Optional) Displays the EnergyWise version.

Command Modes Privileged EXEC

Command History	Release	First EW Version	Modification
	Cisco IOS 12.2(33)SX14	2	On Cisco Catalyst 6500 series switches: This command was introduced.

Usage Guidelines To check that you have deleted neighbors and endpoints from the database, use the **show energywise neighbors** privileged EXEC command.



Note If you statically add a neighbor, the **clear energywise neighbors** privileged EXEC command does not affect it.

EnergyWise event (**show energywise events** privileged EXEC command) entries are cleared when you reload or reboot the domain member.

Examples This example shows the output that is generated when you enter the **show energywise events** privileged EXEC command:

```
DomainMember# show energywise
Module/Interface Role Name Usage Category Lvl Imp Type
-----
WS-C3560G-48PS NRGYZ-TB-09 130.0 (W) consumer 10 1 module
```

Table 1: show energywise Field Descriptions

Character	Description
Module/Interface	Module or interface ID
Role	Domain member role
Name	Domain member name
Usage	Power usage in watts (W)
Category	Domain member usage type
Lvl	Domain member power level
Imp	Domain member importance value
Type	Domain member device type

This example shows the output that is generated when you enter the **show energywise events** privileged EXEC command:

```
DomainMember# show energywise children
-----
Module/Interface Role Name Usage Category Lvl Imp Type
-----
WS-C3560G-48PS NRGYZ-TB-11 130.0 (W) consumer 10 1 parent
Gi0/1 Endpoint saturn-lnx1 100.0 (W) consumer 10 1 endpoint
Gi0/5 IP Phone 7960 SEP0003E3864795 6.3 (W) consumer 10 1 PoE
Gi0/11 IP Phone 7970 SEP00192FB9CAA5 6.3 (W) consumer 10 1 PoE
Gi0/12 Xerox WorkCentre Printer_Floor1_Lobby 300.0 (W) consumer 10 1 proxy
Subtotals: (Consumer: 542.6 (W), Meter: 0.0 (W), Producer: 0.0 (W))
Total: 542.6 (W), Count: 5
```

```
DomainMember# show energywise children provisioned
-----
Module/Interface Role Name Usage Category Lvl Imp Type
-----
WS-C3560G-48PS NRGYZ-TB-09 130.0 (W) consumer 10 1 module
Gi0/1 interface Gi0.1 0.0 (W) consumer 10 1 PoE
Gi0/2 interface Gi0.2 0.0 (W) consumer 10 1 PoE
Gi0/3 interface Gi0.3 0.0 (W) consumer 10 1 PoE
Gi0/4 interface Gi0.4 0.0 (W) consumer 10 1 PoE
Gi0/5 interface Gi0.5 0.0 (W) consumer 10 1 PoE
Gi0/6 interface Gi0.6 0.0 (W) consumer 10 1 PoE
Gi0/7 interface Gi0.7 0.0 (W) consumer 10 1 PoE
Gi0/8 interface Gi0.8 0.0 (W) consumer 10 1 PoE
Gi0/9 interface Gi0.9 0.0 (W) consumer 10 1 PoE
<output truncated>
Total Displayed: 48 Usage: 145.3
```

This example shows the output that is generated when you enter the **show energywise domain** privileged EXEC command:

```
DomainMember# show energywise domain
Name : Manager-1
Domain : cisco
Protocol : udp
IP : 2.2.2.21
Port : 43440
```

Table 2: show energywise domain Field Descriptions

Character	Description
Name	Domain member name
Domain	Domain name
Protocol	Communication protocol
IP	IP address
Port	Port that communicates with the domain

```
DomainMember# show energywise events
-----
Sequence: 343550446 Priority: 100 References: 0:1 Errors:
Class: PN_CLASS_DISCOVERY
Action: PN_ACTION_CPQR_POWERNET_DISCOVERY_DISCOVERY_UPDATE
Reply To: 2.2.2.10:43440
```



```

-----
Sequence: 345394888 Priority: 100 References: 0:1 Errors:
Class: PN_CLASS_DISCOVERY
Action: PN_ACTION_CPQR_POWERNET_DISCOVERY_DISCOVERY_UPDATE
Reply To: 2.2.2.10:43440
-----
Sequence: 343550449 Priority: 100 References: 0:1 Errors:
Class: PN_CLASS_DISCOVERY
Action: PN_ACTION_CPQR_POWERNET_DISCOVERY_DISCOVERY_UPDATE
Reply To: 2.2.2.10:43440
-----
Sequence: 345394889 Priority: 100 References: 0:1 Errors:
Class: PN_CLASS_DISCOVERY
Action: PN_ACTION_CPQR_POWERNET_DISCOVERY_DISCOVERY_UPDATE
Reply To: 2.2.2.10:43440
-----
Sequence: 343550450 Priority: 100 References: 0:1 Errors:
Class: PN_CLASS_DISCOVERY
Action: PN_ACTION_CPQR_POWERNET_DISCOVERY_DISCOVERY_UPDATE
<output truncated>

```

Table 3: show energywise events Field Descriptions

Character	Description
Sequence	EnergyWise event sequence number
Class	EnergyWise event class
Action	EnergyWise event action
Reply to	IP address where the event originated

This example shows the output that is generated when you enter the **show energywise level** privileged EXEC commands:

```

DomainMember# show energywise level
Levels (Watts)
Interface Name 0 1 2 3 4 5 6 7 8 9 10
-----
NRGYZ-TB-09 0.0 390.0 390.0 390.0 390.0 390.0 390.0 390.0 390.0 390.0
Gi0/27 SEP001201D75BB9 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/41 ap 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4

DomainMember# show energywise level children
Levels (Watts)
Interface Name 0 1 2 3 4 5 6 7 8 9 10
-----
NRGYZ-TB-09 0.0 390.0 390.0 390.0 390.0 390.0 390.0 390.0 390.0 90.0
Gi0/1 Gi0.1 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/2 Gi0.2 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/3 Gi0.3 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/4 Gi0.4 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/5 Gi0.5 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/6 Gi0.6 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/7 Gi0.7 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/8 Gi0.8 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
<output truncated>

DomainMember# show energywise level current
Interface Name Level Value
-----
NRGYZ-TB-09 10 390.0 (W)
Gi0/27 SEP001201D75BB9 10 15.4 (W)

```

show energywise

```

Gi0/41 ap 10 15.4 (W)
DomainMember# show energywise level current children
Interface Name Level Value
-----
NRGYZ-TB-09 10 390.0 (W)
Gi0/1 Gi0.1 10 15.4 (W)
Gi0/2 Gi0.2 10 15.4 (W)
Gi0/3 Gi0.3 10 15.4 (W)
Gi0/4 Gi0.4 10 15.4 (W)
Gi0/5 Gi0.5 10 15.4 (W)
Gi0/6 Gi0.6 10 15.4 (W)
Gi0/7 Gi0.7 10 15.4 (W)
Gi0/8 Gi0.8 10 15.4 (W)
Gi0/9 Gi0.9 10 15.4 (W)
Gi0/10 Gi0.10 10 15.4 (W)
<output truncated>

DomainMember# show energywise level delta
Levels (Watts)
Interface Name 0 1 2 3 4 5 6 7 8 9 10
-----
NRGYZ-TB-09 -130.0 260.0 260.0 260.0 260.0 260.0 260.0 260.0 260.0 260.0 260.0
Gi0/27 SEP001201D75BB9 -6.3 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1 9.1
Gi0/41 ap -9.0 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4

DomainMember# show energywise level delta children
Levels (Watts)
Interface Name 0 1 2 3 4 5 6 7 8 9 10
-----
NRGYZ-TB-09 -130.0 260.0 260.0 260.0 260.0 260.0 260.0 260.0 260.0 260.0 260.0
Gi0/1 Gi0.1 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/2 Gi0.2 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/3 Gi0.3 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/4 Gi0.4 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/5 Gi0.5 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/6 Gi0.6 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/7 Gi0.7 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
Gi0/8 Gi0.8 0.0 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4 15.4
<output truncated>

```

This example shows the output that is generated when you enter the **show energywise neighbors** privileged EXEC command:

```

DomainMember# show energywise neighbors
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone, U - Unknown
Id Neighbor Name Ip:Port Prot Capability
-----
1 Router A 10.0.0.11:43440 udp R
2 Switch A 10.0.0.12:43440 cdp S I
3 Router B 10.0.0.36:43440 cdp U
4 IP_phone A 10.0.0.14:43440 udp U
5 Switch B 10.0.0.4:43440 udp R
6 Switch C 10.0.0.5:43440 udp R
7 Router C 10.0.0.7:43440 udp R

```

Table 4: show energywise neighbors Field Descriptions

Character	Description
ID	Neighbor ID
Neighbor Name	Neighboring domain member name
Port	Neighbor IP address and port

Character	Description
Prot	Protocol that the neighbor was discovered on
Capability	See device capability codes

This example shows the output that is generated when you enter the **energywise level level recurrence importance importance at minute hour day_of_month month day_of_week** interface configuration command:

```
DomainMember# show energywise recurrences
Id Interface Class Action Lvl Cron/Time-range
-----
1 Gi0/1 QUERY SET 10 minutes: 34 hour: 6 day: * month: * weekday:*
```

This example shows the output that is generated when you enter the **energywise level level recurrence importance importance time-range time-range-name** interface configuration command:

```
DomainMember# show energywise recurrences
Id Addr Class Action Lvl Cron/Time-range
-----
1 Gi0/1 QUERY SET 10 tt-range
2 Gi0/2 QUERY SET 10 periodicdaily
4 Gi0/3 QUERY SET 10 absolutestart06:34**2009
```

Table 5: show energywise recurrences Field Descriptions

Character	Description
Id	Recurrence ID
Addr	Recurrence configuration interface
Class	Recurring event class
Action	Recurring event action
Lvl	EnergyWise level set by recurring event
Cron/Time-range	Recurring event in cron format/ Recurring event time-range name

This example shows the output that is generated when you enter the **show energywise statistics** privileged EXEC command:

```
DomainMember# show energywise statistics
Children: 2 Errors: 0 Drops: 3 Events: 3256
```

This example shows the output that is generated when you enter the **show energywise usage** privileged EXEC commands:

```
DomainMember# show energywise usage
Interface Name Usage Category Caliber
-----
NRGYZ-TB-09 130.0 (W) consumer max
Gi0/27 SEP001201D75BB9 6.3 (W) consumer trusted
Gi0/41 ap 9.0 (W) consumer trusted
```

```

Total Displayed: 3 Usage: 145.3

DomainMember# show energywise usage child
Interface Name Usage Category Caliber
-----
NRGYZ-TB-09 130.0 (W) consumer max
Gi0/1 Gi0.1 0.0 (W) consumer presumed
Gi0/2 Gi0.2 0.0 (W) consumer presumed
Gi0/3 Gi0.3 0.0 (W) consumer presumed
Gi0/4 Gi0.4 0.0 (W) consumer presumed
Gi0/5 Gi0.5 0.0 (W) consumer presumed
Gi0/6 Gi0.6 0.0 (W) consumer presumed
Gi0/7 Gi0.7 0.0 (W) consumer presumed
Gi0/8 Gi0.8 0.0 (W) consumer presumed
Gi0/9 Gi0.9 0.0 (W) consumer presumed
<output truncated>
Total Displayed: 48 Usage: 145.3

```

Table 6: show energywise usage Field Descriptions

Character	Description
Interface	Interface ID
Name	Domain member name
Usage	Power usage in watts (W)
Category	Domain member usage type
Caliber	Power usage caliber

This example shows the output that is generated when you enter the **show energywise version** privileged EXEC commands:

```

DomainMember# show energywise version
EnergyWise is Enabled
IOS Version: 12.2(n)xx
EnergyWise Specification: (rel2_7)n.0.n

```

snmp-server enable traps energywise

To enable the domain member to send Simple Network Management Protocol (SNMP) notifications for EnergyWise traps or inform the network management system (NMS) of requests, use the **snmp-server enable traps energywise** global configuration command. To return to the default setting, use the **no** form of this command.

```
snmp-server enable traps energywise[event-occurred][ level-change][neighbor-added][neighbor-deleted]
```

```
no snmp-server enable traps energywise[event-occurred][
level-change][neighbor-added][neighbor-deleted]
```

Syntax Description

event-occurred	(Optional) Enables EnergyWise event traps.
level-change	(Optional) Enables EnergyWise power-level change traps.
neighbor-added	(Optional) Enables EnergyWise traps when neighbors are added.
neighbor-deleted	(Optional) Enables EnergyWise traps when neighbors are removed.

Command Default

The sending of EnergyWise traps is disabled.

Command Modes

Global configuration

Command History

Release	First EW Version	Modification
Cisco IOS 12.2(33)SX14	2	On Cisco Catalyst 6500 series switches: This command was introduced.

Usage Guidelines

Use the **snmp-server host** global configuration command to specify the host (Network Management System [NMS]) that receives the traps.

If you do not specify any keywords, all the EnergyWise traps are enabled.

You can verify your setting by entering the **show energywise** or the **show running-config** privileged EXEC command.

Examples

This example shows how to enable the EnergyWise domain member to send traps to the NMS:

```
DomainMember(config)# snmp-server enable traps energywise
```

This example shows how to enable the EnergyWise domain member to send only event traps to the NMS:

```
DomainMember(config)# snmp-server enable traps energywise event-occured
```

Related Commands

Command	Description
show energywise, on page 22	Displays the EnergyWise settings and status.
show running config	Displays the operating configuration.